



# AUBURN

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## UNIVERSITY

### A Land-Grant University

Auburn University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097: Telephone number 404-679-4501) to award Bachelor's, First Professional, Master's, Educational Specialist and Doctor's degrees.

Auburn University is an equal opportunity educational institution/employer.

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## Policy Notes

The statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and Auburn University.

While the provisions of the bulletin will ordinarily be applied as stated, Auburn University reserves the right to change any provision listed in this bulletin, including but not limited to academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office and/or the dean's office. It is important that each student be aware of his or her individual responsibility to keep apprised of current graduation requirements for the student's respective degree program.

### Civil Rights Compliance

Auburn University is an equal opportunity educational institution and operates without regard to race, sex, color, age, religion, national origin, disability or veteran status. The university complies with the regulations of Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act, the Age Discrimination in Employment Act, Title IX of the Education Amendments of 1972, Sections 503/504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans Readjustment Assistance Act, the Americans with Disabilities Act of 1990, The Equal Pay Act and the Pregnancy Discrimination Act. As a matter of policy, Auburn University prohibits sexual orientation discrimination in matters regarding academic acceptance, academic performance, or dismissal, as well as employment decisions regarding hiring, promotion, and termination. Anyone wishing to file a complaint covered by the above should go to the Affirmative Action Office in 317 James E. Foy Hall, or call (334) 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

### Equal Employment Opportunities

It is the policy of Auburn University to provide equal employment opportunities for all individuals without regard to race, sex, age, religion, color, national origin, disability or veteran status. Sexual orientation discrimination in employment decisions regarding hiring, promotion, and termination is also prohibited. Anyone wishing to file a complaint covered by the above should go to the Affirmative Action/EEO Office in 317 James E. Foy Hall, or call (334) 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

### Prohibited Harassment

Harassment based on protected class constitutes a violation of university policy and may also constitute a violation of civil rights laws. Such harassment will not be tolerated by Auburn University. It subverts the mission of the university and threatens the careers, educational experience and well-being of students, faculty and staff. Prohibited harassment includes harassment based on race, sex, age, religion, color, national origin, disability, sexual orientation, and veteran status.

Sexual harassment is a form of sex discrimination and is prohibited by federal regulation. Sexual harassment in academic settings and in the employment area where students are involved is defined as unwelcome sexual advances, requests for sexual favors, and other verbal, graphic or physical conduct of a sexual nature when (1) submission to such conduct may be explicitly or implicitly a term or condition of a student's academic success or employment, (2) submission to or rejection of such conduct may be used as the basis for employment or academic decisions affecting the student and the student's total educational and/or work experience, or (3) such conduct has the purpose or effect of substantially interfering with a student's employment or academic performance or creates an intimidating, hostile or offensive work or educational environment that is severe, pervasive, and objectively offensive. Students who wish to make a complaint of sexual or other prohibited harassment or discriminatory conduct should contact the Office of Affirmative Action/Equal Opportunity in 317 James E. Foy Hall, or call (334) 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

### Smoking

Smoking of tobacco in AU facilities and vehicles is prohibited except where signs are posted indicating otherwise.

### Weapons

Auburn University prohibits possession, use and transportation on university properties of any dangerous or potentially dangerous weapons, including fixed-blade knives, shotguns, rifles, handguns, bows and arrows, crossbows, brass knuckles, air guns, swords and fireworks or explosive devices.

# Administration

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# Auburn University Calendar 2011-2012

*Auburn University reserves the right to make adjustments to this calendar.*

## 2011 SUMMER SEMESTER

May 19.....	Classes Begin
May 25.....	5th Class Day *
May 30.....	Memorial Day (Holiday)
June 22.....	Mid-Semester (24th Class Day)**
June 23.....	No Classes - MS-I Reading Period
June 24.....	No Classes - MS-I Exam Period
July 4.....	Independence Day (Holiday)
July 29.....	Classes End
July 30.....	Study/Reading Day
Aug. 1-3.....	Final Exam Period
Aug. 6.....	Commencement

## 2011 SUMMER MINI-SEMESTER I

May 19.....	Classes Begin
May 25.....	5th Class Day*
May 30.....	Memorial Day (Holiday)
June 6.....	Mid-Semester (12th Class Day)**
June 22.....	Classes End
June 23.....	Study/Reading Day
June 24, 25.....	Final Exam Period

## 2011 SUMMER MINI-SEMESTER II

June 27.....	Classes Begin
July 1.....	5th Class Day*
July 4.....	Independence Day (Holiday)
July 13.....	Mid-Semester (12th Class Day)**
July 29.....	Classes End

July 30.....	Study/Reading Day
Aug. 1-3.....	Final Exam Period

## 2011 FALL SEMESTER

Aug. 17.....	Classes Begin
Sept. 5.....	Labor Day
Sept. 7.....	15th Class Day*
Oct. 6.....	Mid-Semester (36th Class Day)**
Nov. 21-25.....	Thanksgiving Break
Dec. 2.....	Classes End
Dec. 3-4.....	Study/Reading Day
Dec. 5-9.....	Final Exam Period
Dec. 12.....	Commencement

## 2012 SPRING SEMESTER

Jan. 9.....	Classes Begin
Jan. 16.....	M. L. King Jr. Day
Jan. 30.....	15th Class Day*
Feb. 28.....	Mid-Semester (36th Class Day)**
Mar. 12-16.....	Spring Break
Apr. 25.....	Classes End
Apr. 26-27.....	Study/Reading Day
Apr. 30 - May 4.....	Final Exam Period
May 7.....	Commencement

- \* Last day to withdraw from a course with no grade assignment
- \*\* Last day to withdraw from a course with no grade penalty
- \*\*\* Special Scheduling

# Graduate Calendar 2011-2012

*Auburn University reserves the right to make adjustments to this calendar.*

## SUMMER 2011

May 19.....	Classes begin
May 30.....	Memorial Day Holiday
June 9.....	Last day to submit Dissertation First Submission Approval Form with University Reader info and dissertation in PDF form for format check
June 13.....	Last day to clear incomplete grades from Fall 2010
June 20-24.....	Submission of master's thesis in PDF form for format check
July 4.....	Independence Day Holiday
July 13.....	Last day to submit Form 9 (Thesis Maaster's Final Examination Form), ETD Final Approval Form, and electronic thesis
July 15.....	Last day for doctoral and non-thesis master's (Form 8) final oral examinations
July 22.....	Last day for submission of Form Z, ETD Final Approval Form, electronic dissertation, publishing agreement, and SED notification of completion
July 29.....	Classes end for semester
August 1-3.....	Final examinations for semester
August 6.....	Graduation and last day for students to request graduation checks in Graduate School for December graduation (students must be registered no later than the fifteenth class day of Fall semester to graduate)

## FALL 2011

Sept. 21.....	Last day to submit Dissertation First Submission Approval Form with University Reader info and dissertation in PDF form for format check
Sept. 30 - Oct. 7.....	Submission of master's thesis in PDF form for format check
Nov. 7.....	Last day to submit Form 9 (Thesis Master's Final Examination Form), ETD Final Approval Form, and electronic thesis
Nov 9.....	Last day to clear incomplete grades from Spring 2011
Nov. 10.....	Last day for doctoral and non-thesis (Form 8) master's final oral examinations
Nov. 28.....	Last day to submit Form Z, ETD Final Approval Form, electronic dissertation, publishing agreement, and SED notification of completion

## SPRING 2012

February 6.....	Last day to clear incomplete grades from Summer 2011
February 21.....	Last day to submit Dissertation First Submission Approval Form with University Reader info and dissertation in PDF form for format check
March 2 - 9.....	Submission of master's thesis in PDF form for format check
April 6.....	Last day to submit Form 9 (Thesis Master's Final Examination Form), ETD Final Approval Form, and electronic thesis
April 13.....	Last day for doctoral and non-thesis (Form 8) master's final oral examinations
April 23.....	Last day to submit Form Z, ETD Final Approval Form, electronic dissertation, publishing agreement, and SED notification of completion

# The University

AUBURN UNIVERSITY, chartered in 1856, is located in Auburn, Alabama, and traces its beginning to the East Alabama Male College, a private liberal arts institution whose doors opened in 1859. From 1861 to 1866 the college was closed because of the Civil War. The college had begun an affiliation with the Methodist Church before the war. Due to financial straits, the church transferred legal control of the institution to the state in 1872, making it the first land-grant college in the South to be established separate from the state university. It thus became the Agricultural and Mechanical College of Alabama.

Women were admitted in 1892, and in 1899 the name again was changed, to the Alabama Polytechnic Institute. In 1960, the school acquired a more appropriate name, Auburn University, a title more in keeping with its location, size and complexity. The institution has experienced its greatest growth since World War II, and today enrolls more than 25,000 students. The majority are Alabama residents.

Auburn University Montgomery was established as a separately administered branch campus in 1967. The institution has developed rapidly, especially since moving to a 500-acre campus east of Montgomery in 1971. Current enrollment at AUM exceeds 5,800.

## Statement of Vision and Mission

The following statement of vision and mission was developed by the Task Force on Mission established in 1995 and was approved by the Board of Trustees on March 20, 1997 and amended May 7, 2004.

**Vision.** Auburn University will emerge as one of the nation's preeminent comprehensive land-grant universities in the 21st century. Central to all its functions will be the university's historic commitment of service to all Alabamians as the state becomes a part of a global society with all of its challenges and opportunities. The university will be widely recognized for the quality of its undergraduate, graduate and professional educational programs, the effectiveness of its research and outreach programs and the broad access to the university provided through the innovative use of information technology. The university will ensure the quality of its programs through the careful focusing of its resources in areas of institutional strengths. One constant will remain unchanged at the university is that intangible quality Auburn men and women call the "Auburn spirit."

**Mission.** Auburn University's mission is defined by its land-grant traditions of service and access. The university will serve the citizens of the State through its instructional, research and outreach programs and prepare Alabamians to respond successfully to the challenges of a global economy. The university will provide traditional and non-traditional students broad access to the institution's educational resources. In the delivery of educational programs on campus and beyond, the university will draw heavily upon the new instructional and outreach technologies available in the emerging information age.

As a comprehensive university, Auburn University is committed to offering high-quality undergraduate, graduate, and professional education to its students. The university will give highest priority for resource allocation for the future development of those areas that represent the traditional strengths, quality, reputation, and uniqueness of the institution and that continue to effectively respond to the needs of students and other constituents. Consistent with this commitment, the university will emphasize a broad and superior undergraduate education that imparts the knowledge, skills, and values so essential to educated and responsible citizens. At the same time, the university will provide high-quality graduate and professional programs in areas of need and importance to the state and beyond. To accomplish these educational goals, Auburn University will continue to compete nationally to attract a faculty distinguished by its commitment to teaching and by its achievements in research, both pure and applied. The university will strive to attract a faculty that will bring distinction and stature to the undergraduate, graduate, and professional programs offered by the university.

Because research is essential to the mission of a land-grant university, Auburn University will continue development of its research programs. The primary focus of this research will be directed to the solution of problems and the development of knowledge and technology important to the state and nation and to the quality of life of Alabama citizens. The university's research programs will make important contributions

to instructional programs through the involvement of graduate and undergraduate students and the renewal of the faculty. Research will also provide the knowledge base for outreach programs. In carrying out its research mission, the university will emphasize established areas of strength and will focus available resources in those areas of research and doctoral study that are, or have the potential to develop into nationally and internationally recognized centers of excellence.

Extension and outreach programs are fundamental to the land-grant mission because these programs directly affect the lives of all citizens in the state. The university will maintain the strengths of its traditional outreach programs and will increasingly involve the broader university in outreach programs that respond to the changing needs of the society in which we live. The university will continue to seek new and innovative ways to reach out to the people it serves.

## Instruction

Auburn University is committed to excellence in teaching at both the undergraduate and the graduate level. This commitment has long been reflected in the diversity of course offerings and in the variety of instructional approaches that are offered. Increasingly, electronic technology is providing instructors with innovative and creative teaching strategies. The high academic aptitude of the university's incoming students also makes accelerated learning possible.

The liberal arts and sciences - introduced in the university's nationally recognized Core Curriculum - are the heart of Auburn's undergraduate programs. They lay the foundation not only for advanced study and career preparation but also for the development of a more responsible citizenry through students' personal and intellectual growth. The Core Curriculum provides students with a common set of experiences, develops their powers of analysis and communication, and encourages their understanding of human culture and the natural world. Auburn has won recognition for its high academic quality.

Auburn offers baccalaureate degrees in more than 130 areas across the spectrum of disciplines and provides the state's only publicly supported programs in many fields, including several in agriculture, architecture, building science, forestry, pharmacy and veterinary medicine. Particularly strong baccalaureate programs can be found in the Colleges of Business, Education, Engineering, Liberal Arts, and Sciences and Mathematics. For many years, ROTC programs at Auburn have also been nationally prominent in providing leadership for the military.

While Auburn has long been widely recognized for the quality and diversity of its undergraduate and first-professional programs, more recently expanding research accomplishments have broadened the scope and raised the prominence of the university's graduate programs. Today Auburn supports a comprehensive graduate school, providing master's level programs in more than 64 areas and awarding the doctorate in more than 40 fields. In many fields it offers the state's only doctoral program. For many years the university has enjoyed strong graduate programs in agriculture, the biological and physical sciences, education, engineering, forestry, the human sciences, mathematics, pharmacy and veterinary medicine. More recently, excellent graduate programs have also emerged in business, the liberal arts and the social sciences. The university anticipates expanded research activity and graduate instruction, especially in agriculture and the biological sciences, in engineering and the physical sciences, in veterinary and pharmaceutical sciences, as well as in business and education.

## Research

Research is the means through which new knowledge is created and new information is developed. As such, research at Auburn University is an essential link in its three-pronged mission of instruction, research and outreach. Successes among the varied research activities within each of its 12 schools and colleges continue to bolster Auburn's reputation among the nation's top universities.

Auburn's role as a land-grant university emphasizes strong research programs in agriculture, natural resources, the life sciences, engineering and the physical sciences. Strong and expanding research programs exist in agriculture; architecture, design and construction; business; education; engineering; forestry and wildlife sciences; human sciences;

the liberal arts; nursing; pharmacy; science and mathematics; and veterinary medicine.

Whether in the laboratory, the field, or in the classroom, Auburn University's research endeavors are diverse, comprehensive, and collaborative focusing on developing solutions to major problems that confront humankind and on expanding the base of knowledge and technologies available to improve our quality of life. Additionally, major efforts to increase the protection and commercialization of intellectual properties are central to Auburn's continual drive for improvements in its research mission.

These efforts mesh to create a research environment that enhances the state's economic, cultural, social and intellectual development and, at the same time, undergirds the university's undergraduate, graduate, professional and outreach programs.

In support of these efforts, the Auburn University Huntsville Research Center interfaces with agencies and industries in order to increase research funding, raise our national profile, as well as bring new ideals and products to government, industries and consumers. A high-tech economic engine for Alabama; Huntsville executes billions in federal contracts yearly. Increasingly, these contracts require the collaboration of a broad array of disciplines. The Auburn University Huntsville Research Center enables North Alabama business, industry, and government to access the capabilities of one of the Southeast's major research institutions.

Lastly, the Auburn Research and Technology Foundation (ARTF) and the Auburn Research Park were developed to further integrate research and the business community to complement the economic development and research initiatives of the university. In addition to facilitating the commercialization of university technologies and industry-university partnerships, the research park offers employment opportunities for Auburn's students and graduates.

## Outreach

As a land-grant institution, Auburn University has a mission of Outreach – engaging its expertise beyond campus to improve quality of life across Alabama, nationally, and even internationally. More importantly, outreach provides opportunities to establish mutually beneficial partnerships between Auburn University and the communities that it serves. Through outreach, citizens benefit from greater access to Auburn's high quality educational resources. Community interaction benefits the university as well, providing valuable insights and information for teaching and research, and enhancing the institution's relevance to the broader society.

Outreach focuses on three major areas of activity – lifelong learning, expert assistance, and civic engagement. Auburn University's lifelong learning programs offer individuals of all ages opportunities for professional continuing education as well as skills development and personal enrichment. The university provides an array of expert assistance and consultation services to improve operations in government, education and business institutions. Finally, civic engagement projects help bond Auburn University and communities in a variety of public service activities. University faculty members are involved significantly in the institution's outreach initiatives.

Auburn students have a role in the outreach mission too, and there are many innovative ways for students and their faculty mentors to engage in service activities locally, regionally, and even internationally. The Office of the Vice President for University Outreach provides administrative leadership and support for outreach work campus wide. Units reporting to that office include the Center for Governmental Services, Distance Learning and Outreach Technology, the Economic and Community Development Institute, the Office of Professional and Continuing Education, and the Office of Public Service. University Outreach is also home to the AUBURNSERVES initiative ([www.auburnserves.com](http://www.auburnserves.com)), a collaboration of Auburn's faculty, academic units, campus organizations, and community partners in the development of new service learning, experiential education and engagement opportunities for students.

There are more than 75 outreach units and program initiatives within the university's schools and colleges. Some of these include the Caroline Marshall Draughon Center for the Arts and Humanities in Liberal Arts, the Auburn Technical Assistance Center in Business, the Truman Pierce Institute in Education, Engineering Continuing Education, and the Rural Studio in Architecture. Auburn University also serves as the headquarters for Alabama's Cooperative Extension System, which serves all 67 Alabama counties with educational programs and services

provided by faculty specialists and local agents.

From this base of organizational and faculty resources, Auburn hosts a diverse range of outreach activities. Annually, the university produces some 1,000 conferences, non-credit courses and training programs, with registrations averaging 50,000. More than half of these programs are approved to offer continuing education units. The university's distance education offerings include more than 20 degree programs and approximately 250 course options in business, engineering, education, liberal arts, human sciences, and agriculture. Auburn conducts hundreds of technical assistance projects annually for industrial and governmental clients across the state, representing millions of dollars in direct impact from improved processes, cost savings, and investments. Auburn supports roughly 100 outreach facilities and research sites throughout Alabama, giving the university a statewide community presence greater than any other educational institution. This makes Auburn's outreach resources highly accessible to citizens

A comprehensive directory of Auburn's outreach resources and contacts is available at [www.auburn.edu/outreach](http://www.auburn.edu/outreach).

## Libraries and Archives

The largest library on campus is the Ralph Brown Draughon Library, a 377,000 square-foot structure with seating for 2,800 and shelving space for approximately 3 million volumes. Branch libraries are located in the College of Veterinary Medicine and the College of Architecture, Design and Construction. Auburn University is one of the 125 universities that are members of the Association of Research Libraries.

Collections include more than 3 million volumes, more than 2.7 million items in microform, and 152,000 maps. The libraries license access to over 200 electronic databases, including online full-text access to over 3,000 scholarly journals and receive more than 37,000 current serials, including publications issued by the U.S. government. Electronic access is also provided to the Government Printing Office's GPO Access database of federal publications.

The libraries offer an online catalog to library holdings at [www.lib.auburn.edu](http://www.lib.auburn.edu), expedited electronic document delivery to faculty and students via the AubieExpress service, delivery of books or documents held at other libraries via Interlibrary Loan, and expedited purchasing of titles requested by faculty or students via Purchase Request.

The Draughon Library contains the Learning Commons with over 600 power outlets to allow students to use personal laptops while in the library; carrels for faculty and graduate student use; a Media Digital Resource Laboratory to provide access to the latest multimedia hardware and software along with on-site expertise to assist users, and over 200 university and public computer workstations - including laptop computers that can be checked out to faculty and students.

Reference service and library use instruction is provided by subject specialist librarians. Draughon Library also features an expanded assistive technology workstation area on the second floor that hold three workstations with specialized software for helping vision-impaired patrons use library and Internet resources.

Special Collections and Archives collects rare and unique material related to the history, literature and natural history of Alabama; the American Civil War; the history of aviation; and family history in the southeastern United States.

Library borrowing privileges are extended to enrolled students; members of the administrative, research, instructional and extension staffs of the university; student, faculty and staff spouses; and active alumni association members.

## Information Technology

The Office of Information Technology (OIT) offers computing and communication services to the university community. OIT provides Auburn University with a reliable, secure information technology infrastructure and technical support that enables and encourages the effective use of information technology. Contact OIT via the OIT HelpDesk at (334) 844-4944, via email to [helpdesk@auburn.edu](mailto:helpdesk@auburn.edu), online at [www.auburn.edu/oit](http://www.auburn.edu/oit) and follow us on Twitter (AuburnOIT) and Facebook (Auburn University OIT).

**Internet Connectivity.** AU Net, Auburn University's campus network, is the Ethernet backbone linking computers and networks in all buildings to each other, and Auburn University to the Internet. The campus is connected to the Alabama Research and Education Network (AREN) and to the Internet through high-speed fiber optic connections. Auburn

University is a participant in the Internet2 initiative. A secure wireless network is available to AU students, faculty, and staff in a number of public and classroom spaces around the campus and in the campus residence halls as well.

**Servers.** Solaris, NetWare, P-Series AIX, Red Hat Linux, and Windows servers provide campus-wide network services including email, web resources, user authentication, web and application hosting, and workgroup computing for departmental users. A Helix server is available for distribution of streamed audio and video and live broadcasts as well.

**Computing Access.** Each currently enrolled student has a username and password which provides access to AU Access (campus portal), TigerMail Live (AU email), network storage, OIT computing labs, network printing, restricted online class materials, and other AU computing resources. Students have Web access to the online student information system, Tiger i, where they can register for courses, view grades, and access additional student services. E-Bill provides online payment of University fees as well as account summaries. Students log in to AU Access for registration, billing, and academic records.

**Computers for Students.** Computing labs across campus are available for use by students and employees. OIT maintains 16 computing labs with more than 300 networked multimedia Windows machines, most of which are available 24 hours a day. An AU username and password are required to use the OIT labs. OIT computing labs have general purpose software for database, spreadsheet, word processing, Internet (Web browsing), email, and some course-specific software. Network laser printing is available in all OIT Labs, and color printing is available in the 3<sup>rd</sup> floor library lab for a nominal fee.

**World Wide Web.** Auburn University is committed to providing convenient and secure Web applications to our University community. Student admissions, registration and records, campus directory services, administrative systems, email, and instructional and research tools are available to the Auburn University students, faculty and staff via the World Wide Web. The official AU Web site resides at [www.auburn.edu](http://www.auburn.edu).

AU colleges, schools, and departments maintain websites specific to their areas. The AU website includes online directory services, news, calendars, campus map, and a search engine. AU Access, the campus portal, SharePoint and restricted webspace are provided for sensitive information (such as copyrighted material). The Office of Information Technology website is located at [www.auburn.edu/oit](http://www.auburn.edu/oit). It serves as a central dissemination point for information about and assistance with computing, information technology, multimedia, and telecommunications at Auburn University. AU OIT also has a presence on Twitter (AuburnOIT) and Facebook (Auburn University OIT).

**Instructional Technology.** Auburn University is dedicated to providing all faculty and students with effective technology to enhance teaching and improve learning. Blackboard Learning System provides ways for faculty to manage course activities and content and for students to interface with the material, the teachers, and each other. Streaming media and web-based technologies are available for distance education

programs and to enhance the online learning experience for all students. Several technology-enhanced classrooms are available on-campus, as are several special course-specific computer classrooms and general computer labs. The Instructional Media Group (IMG) of OIT consults with and conducts workshops for faculty members in a range of instructional technologies. Several technology-enhanced classrooms are available on campus as well as special course development labs. For information on instructional technologies, contact the Instructional Multimedia Group at [img@auburn.edu](mailto:img@auburn.edu) or (334) 844-5181.

**Telecommunications.** OIT Telecommunications operates the telephone service, data communications system (wired and wireless), and Cable TV for all campus buildings including dormitories. Additional information on Telecommunications services available to AU students including cellular service discounts is provided at [www.auburn.edu/oit/connectivity](http://www.auburn.edu/oit/connectivity).

**Infrastructure Planning.** OIT participates on all building committees for new buildings and major renovation projects. Through this process, OIT ensures that telecommunications, audio/visual, and networking needs are addressed and that these systems are properly designed. OIT meets regularly with the Facilities Division to coordinate necessary infrastructure improvements. In support of Auburn University's mission, OIT is continually planning and upgrading its backbone copper and fiberoptic cabling infrastructure and systems.

**Hardware.** OIT manages AU Lease ([aulease@auburn.edu](mailto:aulease@auburn.edu)), a PC leasing program for campus departments and the Student PC Shop for computer setup and repair. Additional information on this program is available at: [http://www.auburn.edu/oit/help\\_support/spcs](http://www.auburn.edu/oit/help_support/spcs). Additional information on AU Lease services is available at [www.auburn.edu/aulease](http://www.auburn.edu/aulease).

**Support.** Training, documentation, and consulting are provided for Auburn University students, faculty and staff via orientations, seminars, workshops, publications, and the OIT HelpDesk. The HelpDesk is available on University business days and Sundays to answer questions regarding AU computing, telecommunications, and information technology. Contact the HelpDesk at (334) 844-4944, via email to [helpdesk@auburn.edu](mailto:helpdesk@auburn.edu), or drop by the third floor, RDB Library. Hours of operation can be found at [www.auburn.edu/helpdesk](http://www.auburn.edu/helpdesk).

Online technology support is always available at [www.auburn.edu/oit](http://www.auburn.edu/oit). The *Survival Guide* site at [www.auburn.edu/oit/sg](http://www.auburn.edu/oit/sg) is designed to help new students and their parents become familiar with computing services and resources available at Auburn University.

The Office of Information Technology does not conduct an academic program. Inquiries concerning computer curricula should be directed to the Samuel Ginn College of Engineering or the College of Business.

**Policies.** Auburn University's Information Technology policies are on the Web at [www.auburn.edu/oit/policies](http://www.auburn.edu/oit/policies). Email ([username@auburn.edu](mailto:username@auburn.edu)) is an official means of communication at Auburn University. As such, students are responsible for checking their Auburn University issued email account in a timely fashion and on a regular basis.

# Academic Policies

## Policies and Procedures for Freshman Admissions

Auburn University, is an equal-opportunity educational institution, and as a matter of policy, does not discriminate in its admissions policy on the basis of race, color, sex, religion, disability, sexual orientation, age or national origin. Preference is given to the admission of Alabama residents at the undergraduate level; in considering applications to professional schools or programs with restrictive admissions policies, the length of residency in the state will be a factor.

Applications for resident and non-resident students are accepted for all curricula; however, the number of students and academic credentials of the applicants accepted for admission are determined by the availability of facilities and faculty.

**Application Forms.** Applicants are required to submit their application electronically by using the document available on the Auburn University Web site at [www.auburn.edu/apply](http://www.auburn.edu/apply). Application to the Graduate School, the College of Veterinary Medicine, or the James Harrison School of Pharmacy must be made to those schools.

**Process for Application.** All individuals except incoming freshmen may apply for entrance to any term of a calendar year as early as June 1 of the preceding year. Applications from incoming freshmen are accepted, beginning August 1. Applicants to Veterinary Medicine and Pharmacy will be admitted in the fall semester only. Because of the large number of applications, credentials should be submitted as early as possible. In all cases, complete credentials along with the medical examination report must be filed at least three weeks before the term's opening. **The university reserves the right to establish earlier deadlines should circumstances warrant. Prospective students who are offered admission to the university must maintain a level of academic achievement comparable to that in the record used for admission evaluation. Otherwise, the university reserves the right to rescind the offer of admission.**

**Application Fee.** A \$50 processing fee (international application processing fee is \$60), payable by check, money order or credit card, must accompany all admission applications and is neither refundable nor applicable to other fees. Responses on the application forms and on related materials must be complete and accurate; entrance may be denied or registration canceled as a result of false or misleading statements.

Applicants may receive provisional acceptance after they submit the application form and current academic documents. However, they must complete and return a medical examination report form provided by the university by the first day of classes of the first term. The university may require additional medical examinations, and it may refuse admission to individuals whose health records indicate that their health or the university community might be adversely affected by their attendance. All applicants must certify that they have registered with the Selective Service Board or that they are not required by law to register.

Applicants may be asked to supply evidence of good character. The university may deny admission to those whose presence is deemed detrimental to the institution or its students.

**Admission of Freshmen: Academic Criteria.** Favorable consideration for admission will be given to accredited secondary school graduates whose college standardized test scores, high school grades, and other factors, that give promise of the greatest level of success in college courses.

Secondary school students planning to apply for admission to AU should emphasize the following high school courses: English, mathematics, social studies, sciences and foreign languages.

### HIGH SCHOOL CURRICULUM REQUIREMENTS

English.....	4 years
Mathematics.....	3 years
Algebra I and Algebra II .....	2 years
Geometry, Trigonometry, Calculus or Analysis .....	1 year
Science.....	2 years
Biology.....	1 year
Physical Science.....	1 year
Social Studies.....	3 years
Recommended: one additional Science, one additional Social Studies and one Foreign Language.	

Applicants are required to present scores from either the American College Test (ACT) or the Scholastic Aptitude Test (SAT) of the College

Entrance Examination Board. Students will also be required to submit test scores on the Writing Test section of the ACT or the Essay section of the SAT. Scores on these tests may be used as a partial basis for admission, for placement in English, chemistry, and mathematics and for awarding university scholarships and loans. The writing score is not utilized in awarding scholarships and loans. Applicants whose native language is not English are required to demonstrate proficiency in English.

Applicants of mature age who are not high school graduates may be considered for admission if their educational attainments are shown through testing to be equivalent to those of a high school graduate. The tests used include the USAFI General Educational Development Test, the American College Test and/or other tests recommended by the Admissions Committee. The Committee will consider applicants from non-accredited high schools on an individual basis.

*For further admission information, prospective students may contact:* Office of Enrollment Services, The Quad Center, Auburn, AL 36849, [admdean@auburn.edu](mailto:admdean@auburn.edu)

**Early Admission and Joint Enrollment.** Students of high academic promise may be admitted directly from the eleventh grade without a diploma. Basic requirements for early admission include:

- Superior competence and preparation, evidenced by the high school record and college aptitude test scores (ACT, SAT or other tests prescribed by the University Admissions Committee).
- A letter from the high school principal assessing the applicant's emotional and social maturity and readiness for college work.
- A letter of support from a parent or guardian.
- A letter from the student requesting early admission, including the circumstances for early admission.
- Proper personal qualifications.

**Advanced Standing and Credit.** Prospective students are advised to check the Web site of the Office of the Registrar for specific information on placement and credit at [www.auburn.edu/administration/registrar/](http://www.auburn.edu/administration/registrar/).

Entering students with superior preparation or with special competence in a specific area may qualify for advanced placement or credit. Placement or credit may be granted on the basis of Advanced Placement Examinations of the College Board, International Baccalaureate scores, scores on college ability or achievement tests, departmental proficiency examinations, and other evidences of experience and competence.

Students enrolled at Auburn may apply to an academic department for a Departmental Proficiency Test if they have demonstrated a reasonable basis of experience or study in the subject area. If they score a satisfactory grade on the examination, they will be eligible for placement in an advanced course and for credit in the subject. Students who have previously enrolled for the subject at Auburn are not eligible for this test in the same subject.

The amount of advanced placement credit granted in each subject area is determined by the recommendation of the academic teaching department with the approval of the student's academic dean and the provost or designee.

Students transferring to Auburn who have received advanced placement credits from another institution may be awarded these credits insofar as Auburn's requirements for awarding such credits are met. Advanced placement credits may not be substituted for residency requirement.

**Tuition Deposit.** All freshmen and transfer applicants who meet the university admission requirements and are offered provisional admission are required to pay a \$200 non-refundable deposit to confirm the offer of admission. Deposits for the summer and/or fall semesters are due by May 1, and deposits for spring semester are due November 1. However, it is suggested students deposit as early as possible. Students will receive housing information and orientation registration materials following submission of the deposit.

**Admission of Transfer Students and Transfer Credit.** Transfer applicants must provide official transcripts (not duplicated or faxed copies) from each college attended, including any at which the applicant enrolled while in high school. A minimum 2.5 cumulative GPA on a 4.0 scale on all college work attempted and eligibility to re-enter the institution last attended are required to be considered for transfer admission. Transfer applicants who were not eligible for admission to Auburn when they graduated from high school must present a minimum of 45 quarter hours or 30 semester hours of college credit. All transfer



students who have attempted 45 quarter hours or 30 semester hours of college work must have earned a cumulative 2.5 GPA in at least 30 quarter hours, or 20 semester hours, of standard academic courses as required in Auburn University's Core Curriculum, in addition to the overall 2.5 cumulative average. These 30 quarter hours, or 20 semester hours, must include at least one course in each of the following areas: English (college-level composition or literature), History, Mathematics - approved core mathematics for articulation and general studies (or its equivalent from other institutions) and Natural Science with a laboratory. Admission of transfer students to the university is contingent on availability of space.

Transfer applicants (from both on and off campus) to Architecture, Interior Architecture and Building Science in the College of Architecture, Design and Construction must meet all university requirements and must have a minimum 2.80 cumulative GPA.

The Department of Consumer Affairs limits admission of transfer students to the Interior Design (INDS) curriculum, based on space available. Students from both on- and off-campus who wish to transfer into INDS must submit a Statement of Intent, résumé and transcripts from all schools attended. Both on- and off-campus transfer applicants must have a minimum cumulative GPA of 2.5 (on a 4.0 scale) on all collegiate work attempted. The applicant's GPA, Statement of Intent, related courses and work experience are criteria which will determine admission status. Applicants for the INDS program are admitted only in the fall term.

Entrance examinations may be required of applicants transferring from colleges with which the university has had little or no experience.

**Transfer Credit.** For students transferring from accredited public institutions within the state of Alabama, the amount of credit for freshman and sophomore course work is governed by the Articulation and General Studies agreement. Credit for Core Curriculum English writing courses is allowed only on grades of C or better, as approved by the Discipline Committee of the Articulation and General Studies Agreement. Courses with grades of D are only acceptable for transfer in those degree programs in which grades of D are acceptable for equivalent freshman and sophomore courses taken at Auburn University. The maximum credit allowed for work completed in a junior college will be equivalent to one-half of the student's curriculum at Auburn but not to exceed 96 quarter hours or 64 semester hours.

For students transferring from other accredited institutions, the amount of transfer credit and advanced standing allowed will be determined by the appropriate dean and the provost or designee. Courses with grades of D are only acceptable for transfer in those degree programs in which grades of D are acceptable for equivalent courses taken at Auburn University.

Students transferring from unaccredited institutions or programs may be granted provisional credit. When such credit is allowed, the final amount of credit will be determined upon completion by the student of one year of course work at Auburn University. If a C average is not achieved, the amount of credit will be reduced in proportion to the number of hours in which the student fails to earn a C average or better.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admdean@auburn.edu

**Transferring from Auburn University Montgomery (AUM).** Undergraduates enrolled at either of Auburn's campuses may take classes at either campus, if they are in good standing, and approved by the home campus, and have that credit count toward their graduation requirements. This policy does not supersede departmental requirements related to the minimum number of credits to be earned in the major at the home campus. During such terms when students take classes at the other campus, they are classified as transient students. Students must complete an admission application as a transient student; however, the application fee will be waived. To become a degree-seeking student on either campus, however, students must meet minimum transfer requirements.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admdean@auburn.edu

**Admission of Undergraduate Transient Students** (Non-degree candidates enrolling for one term). A student in good standing in an accredited college may be admitted to the university as a transient student when faculty and facilities are available. Generally, space availability is limited for the fall semester.

To be eligible for consideration, an applicant must submit an application, an acceptable medical report and a letter of good standing bearing the signature of the dean or registrar of the college in which the applicant is currently enrolled.

Permission to enroll is granted for one term only; a transient student who wishes to re-enroll must submit a new application. Transient status does not constitute admission or matriculation as a degree candidate. The transient is, however, subject to the same fees and regulations as a regular student except for the continuation-in-residence requirements.

**Admission of Unclassified Students.** Admission to most undergraduate programs as an Unclassified Student may be granted on the basis of the bachelor's degree from an accredited college. Unclassified students must submit the same admissions credentials as transfer applicants.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admdean@auburn.edu

**Special Admissions.** Persons who do not meet general admission requirements for freshmen but who are judged to have potential for success may be approved for special admission. An individual interested in special admission should contact the Office of Enrollment Services.

**Admission of International Students.** The university welcomes admission inquiries from international students. Because of limited facilities, only those students who have demonstrated academic excellence will be given serious consideration for admission. The international student should be proficient in English. In all cases, English proficiency is determined by satisfactory results on the Test of English as a Foreign Language (TOEFL), offered by the Educational Testing Service, Box 899, Princeton, N.J., 08540, U.S.A. The student must also submit satisfactory results on the Scholastic Aptitude Test of the College Entrance Examination Board.

International students should first send all of their academic credentials to a professional credentials evaluation agency for evaluation. If they appear qualified and show promise of success in their chosen fields of study, they will be asked to make formal application, which must be accompanied by a non-refundable application fee of \$60. If applicants present satisfactory academic credentials, test results, and evidence that they have sufficient funds to meet their college expenses (there is no financial assistance for undergraduate international students), they will then be sent an acceptance and the form I-20, the authorization for a student visa. International students are required to purchase the university student insurance plan or provide evidence of equivalent coverage. This mandatory health insurance may be purchased upon arrival in the U.S.

Detailed information can be found at the: Office of International Education, 228 Foy Hall, Auburn University, Auburn, AL 36849, intlledu@auburn.edu

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, USA, admdean@auburn.edu

**Admission of Auditors.** Auditing of courses is restricted, but when faculty and facilities are available, individuals who do not seek admission for course credit may audit a lecture course or the lecture portion of a course upon approval of the dean and the head of the department. A formal application must be filed. Auditors must register and pay appropriate fees. Although listed on class rolls, auditors are not required to take part in classroom discussion, tests, examinations or reports, and they receive no grade or credit. However, students who attend the audited course rarely or not at all will have non-attendance of the course indicated on their records.

A student enrolled in other courses for credit will be granted permission to audit a course only on the approval of the dean and the head of the department of the course involved.

Students may not change from audit to credit after classes begin, but may change from credit to audit within the first four weeks of classes (seven class days during any summer session). No refund of fees will be made except for changes made during the first three weeks of classes in accordance with university policy.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admdean@auburn.edu

**Admission to Graduate Standing.** Admission to graduate standing is granted only by the university's Graduate School. A \$50 (\$60 international) application fee is required. A bachelor's degree or equivalent from an

accredited college or university and submission of satisfactory scores on the General Test of the Graduate Record Examinations (GRE) are required for Graduate School admission in all departments except Business. Applicants in Business must submit satisfactory scores on the Graduate Management Admission Test (GMAT). Certain departments require applicants for master's degree programs to take the GRE Subject Test. Applicants for admission to doctoral programs in some departments must submit GRE Subject Test scores also.

The undergraduate preparation of each applicant must also satisfy the requirements of a screening committee of the school or department in which the student plans to major. A student in good standing in a recognized graduate school who wishes to enroll in summer session, off-campus workshop, or short session, and who plans to return to his or her former college, may be admitted as a graduate transient. For more information, see the Graduate School section in this bulletin.

**Readmission.** Students who have previously attended Auburn and who wish to re-enter must secure permission to register from the Office of the Registrar if they have not been enrolled at AU during the preceding 12 months or if they have been academically ineligible to be enrolled. Undergraduate students who have not been enrolled at Auburn University for a period of five years or more and who are returning to the same curriculum may be subject to different university, college, school, or departmental requirements than those which existed at the time of their initial entry, as well as those which existed at the program level when continuous enrollment ceased. The university, college, school, or department reserves the right to review a former student's completed work, and if deemed appropriate, may require any readmitted student to meet graduation requirements as listed in the catalog in effect at the time of re-entry. In addition, each college/school may have more specific requirements for readmitted students. A student seeking readmission who has attended another college since being enrolled at Auburn University must (1) be eligible to re-enter the last institution attended and (2) have a 2.0 average overall in course work attempted at other colleges if they have been enrolled elsewhere for two or more terms. An official transcript from each institution attended must be furnished to the Office of the Registrar. Students who have been away from the University for more than one term must re-establish their right to residency. They will initially be classified as a non-resident and be required to produce normal documentation.

**Orientation.** To help entering freshmen adjust to the first semester at the university, including scheduling of courses, Auburn provides a summer orientation program, Camp War Eagle. Freshmen entering summer or fall semester attend sessions on campus during the summer prior to entrance. In these sessions, students meet faculty members, administrators and student leaders, and plan with their advisers a schedule of their first semester of college work. New transfer students (and freshmen who enter in the January term) should plan to attend one of the regularly scheduled SOS (Successfully Orienting Students) sessions held prior to the beginning of each term. At these programs, new students will have the opportunity to meet with an advisor and plan their schedules for the upcoming term. Other new students may meet with advisers during the regular registration period at the beginning of the term in which they plan to enroll.

## Enrollment

### Registration and Scheduling

Every student who makes use of the instructional staff and facilities of the university must register and pay fees. This rule also applies to students who are clearing incomplete grades, clearing for graduation, or working on graduate theses. The university calendar on page 4 lists the dates for registration and late registration/schedule adjustment. Students are urged, and depending on the curriculum may be required, to seek guidance from their advisers before attempting to register for classes, and they are urged to register during their assigned registration period. Students should register for courses during the term preceding the term they plan to attend. **When registering, the student is responsible for observing the pre-requisites or co-requisites of courses.** Any waiver of these requirements must be approved by the department head or, in some cases, the dean. Waiver of the junior standing pre-requisite for courses that may be taken for graduate credit must have the Graduate School dean's approval. The dean may reduce a student's class load. Students may register for classes via the web through the 5th university class day in Spring and Fall semesters, and through the 1st university

class day during Summer term. **Students may register for classes after the close of student web registration only with the approval of the college, school or department offering the course. No student without a course schedule will be allowed to register after the 15th day of classes during Fall or Spring or after the 5th day of classes in any Summer term without the approval of the provost.**

**Permission To Register.** All students must have a username and a password prior to participating in registration, late registration or schedule adjustment. All registration holds must be cleared prior to the start of registration to avoid delays in registration.

**Transient Students.** An Auburn student in good standing may be approved to take courses at another institution on a transient basis for one term only. The college or school dean issues a "Transient Student Form" that, when signed and stamped by the Office of the Registrar, certifies the student is in good standing and eligible to return to Auburn. The student's dean's office advisor then lists courses and credits approved to be taken elsewhere. The completed form is taken or mailed to the intended university prior to course enrollment. Credits earned elsewhere without a fully executed Transient Student Form may not be accepted for credit here.

Credit will only be accepted from regionally accredited institutions where there are reasonable course equivalencies. It is the responsibility of the student to determine the accreditation status of any institution where they intend to take courses as a transient student.

Students will be given transfer credit for those approved courses listed on the Transient Form provided a grade of D or better is earned (with the exception of courses which require a C or better such as English Composition).

Students may not take courses for transfer credit taken at another institution while on suspension or dismissal from AU. Additionally, students may not enroll in courses at another institution for which they have not met the AU prerequisites if the intent is to transfer these courses back to AU. Students may not receive transfer credit from another institution for AU courses which have been "gapped" at AU.

**Concurrent Enrollment.** During any given term, students enrolled at Auburn University are expected to take courses only at Auburn. Only under exceptional circumstances, and with prior permission from the dean, may a student receive transfer credit toward the Auburn degree while concurrently enrolled at another college or university.

### Classification

Sophomore ..... completed 30 hours and is in the 31st to 60th credit hour;  
 Junior ..... completed 60 hours and is in the 61st to 90th credit hour  
 Senior ..... completed 90 hours and is in the 91st hour or higher.

The codes for identifying the classification of students are as follows: FR, Freshman; SO, Sophomore; JR, Junior; SR, Senior; 5YR, fifth year; UND, undergraduate non-degree students; UPR, undergraduate provisional; MST, master's; EDS, educational specialist; EDD, doctor of education; PHD, doctor of philosophy; GPR, graduate provisional; GND, graduate non-degree; P1, first-year professional; P2, second-year professional; P3, third-year professional; and P4, fourth-year professional.

A student with a baccalaureate degree who undertakes a program for a second bachelor's degree will be classified as an undergraduate.

### Course Load

The maximum load for students in undergraduate curricula is 18 hours during the semester, 7 semester hours during the 5-week session, and 14 hours during the 10-week session or any combination of summer sessions. International Students and Scholars are required to be enrolled as full-time students during the academic year and are subject to special full-time enrollment regulations. They may NOT drop below the full-time course loads without prior written authorization from the Office of International Programs. Dropping below full course loads without prior OIP approval can subject international students to USDHS termination of their immigration status therefore international students and academic advisors must check with OIP PRIOR TO modifying full-time course loads for international students. An undergraduate must enroll for 12 or more hours during a semester or summer term to be considered full-time for athletic, financial aid, loan and insurance purposes.

The maximum load may be exceeded under the following circumstances:

On approval of the dean, students may schedule overloads not to exceed 22 hours during the semester or 17 hours during the summer terms or 9 hours during a 5-week session. To be eligible for an overload, students must have passed all work attempted and earned a GPA of 2.5

or higher during their last residence semester at Auburn University in which they carried 15 or more hours (10 or more in their last summer).

Students who have scheduled fewer than 15 hours during an intervening semester (or semesters) will retain the overload privilege if all work carried was passed with a minimum GPA of 2.5 in each intervening term. In special cases the dean may make exceptions to the 2.5 requirement, by electronic notice to the Office of the Registrar.

Students who register for course work in excess of the approved load may be required by the dean to drop the overload during the Schedule Adjustment period. See course load requirements in the Graduate School.

## Grades

**Grade Definitions.** Final passing grades are A, superior; B, good; C, acceptable; D, passing; and S, satisfactory. Final failing grades are F, failure; FA, failure for excessive absences; U, unsatisfactory; NR, no grade reported; and WF, officially dropped with permission of the student's dean but failing at time of withdrawal and is calculated into the GPA. (For the definition of W, see the following section on Grade Assignment for Class Withdrawal.)

A TD, thesis and dissertation research credit, is assigned to courses 7990 Research and Thesis and 8990 Research and Dissertation.

A grade of IP (In Progress) is used by professional programs, specifically Pharmacy and Veterinary Medicine, for those courses that extend beyond the end of the regular term. Students who are making progress toward completion of their work but have not completed all course requirements may receive the IP grade. The IP grade is not calculated in the GPA until the grade is cleared.

Grades of SA and SN may be assigned in certain specialized classes in which progress to the next level of a program depends on performance in the class. In such cases, a grade of SA in a particular course may be required for advancement. A grade of SN will give the student appropriate earned credit, but will not allow the student to advance in that program.

An NR is assigned systematically when the instructor does not assign a letter grade. For undergraduates, an NR is calculated as an F until a letter grade is reported.

**Faculty Policy on Assigning Grades of Incomplete (excludes Distance Education courses).** Effective Fall 2007, student (or appropriate representative) must contact the instructor in writing prior to the submission of final course grades to request a grade of Incomplete due to documented reason (illness/ death in family/ etc.).

If a student does not request an IN, the instructor should grade the student based upon the percentage of course work completed to date and using a 0 for any exams/ assignments not completed.

To be eligible for a grade of IN, the student must have completed (and have passed) more than half of all class assignments for the semester or summer term.

The instructor must fill out the Incomplete Grade - Memorandum of Understanding form, indicating:

- reason for the IN,
- percent of course work currently completed at the time of submission and the grade average on that work,
- detailed information about the additional work needed to complete the course,
  - timeline to complete the work (6 months maximum; preferably sooner), and
  - grade the student should be assigned if the additional work is NOT completed by the deadline set for the completion of the work; the missing work is calculated as a 0.

Grades of Incomplete automatically become the grade identified by the instructor, if not cleared within 6 months.

If the instructor assigning a grade of IN leaves Auburn University, the Department Head should make a reasonable attempt to contact the former instructor and then assign a grade based upon the work presented by the student and the information provided on the Incomplete Grade - Memorandum of Understanding form.

Once an IN has been changed to another grade it may not be changed, in the future, to a different grade without approval of the provost.

A grade of IN is calculated as an F (for undergraduate students) until it is changed.

Documentation of class work must be maintained by the student; the Incomplete Grade-Memorandum of Understanding form must be maintained by the student, faculty and the Office of the Registrar. For instructors who submit the IN Grade forms to the Office of the Registrar

prior to course grades being rolled to academic history, the IN will be reflected on the electronic grade roster; faculty will be unable to change that grade on the electronic grade roster.

Instructors should NOT enter a grade on the electronic course roster for those students who are to be assigned the IN grade but leave the grade blank. The system will automatically convert blanks to NR. Once the IN Grade form is received by the Office of the Registrar, that office will convert the NR to the IN grade.

It is the responsibility of the instructor to send a copy of the Incomplete Grade - Memorandum of Understanding form to the Office of the Registrar.

When the student has completed the outstanding work, it is the responsibility of the instructor to initiate the change of grade form and send it to the appropriate department/dean's office for additional signatures and transmittal to the Office of the Registrar.

These policies apply to all students in undergraduate and graduate courses.

**Faculty Policy on Grade Changes (includes NR; Excludes IN)** Grades should be accurate when posted.

- Any change of letter grades (A, B, C, D, F, S, U, FA, and NR) should be made only in extraordinary situations.
- Any grade changes must be completed within 6 months of completion of the course.
- Any grade changes outside of this timeframe must also be approved by the provost.
- A final grade may be changed only by the written request of the instructor, with approval of the department head and dean, submitted to the registrar.
- A grade of F and additional penalties may be assigned for academic dishonesty. See the Student Academic Honesty Code section in the Tiger Cub for further information.

**Grade Assignment For Class Withdrawals.** A student who withdraws from a course prior to the 15th class day during a semester (or the fifth class day of summer term) will have no grade assignment; however, from the 15th class day during a semester (or the fifth class day of summer term) through mid-semester (mid-term) a W (Withdrawn Passing) grade will be recorded for the course. A course may be dropped with a W after mid-semester only under unusual conditions and only with permission from the student's dean. When approval for dropping the course under such circumstances is granted, a W may be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise, a grade of WF (Withdrawn Failing) is assigned. All failing grades are calculated into GPA as grades of F.

**Grade Average and Quality Point Computation.** A 4.0 grade scale is used. An A equals 4.0; B, 3.0; C, 2.0; D, 1.0; and F equals 0.0. Only course work attempted at Auburn University is used in determining the grade report average and continuation-in-residence requirements. S and U grades do not enter into grade-point computations.

**S-U Grading.** Grades of S (Satisfactory) and U (Unsatisfactory) may be assigned only to courses approved to be graded S-U, and courses elected under the S-U option.

A junior or senior with a minimum overall grade average of 2.5 on at least 20 hours of credit earned at Auburn may elect any course to be graded on the S-U option, except for courses required in the Core Curriculum or for required courses as defined by the student's curriculum. A total of 12 credits may be earned at the rate of one course per term. Students will receive credit toward a degree for these courses, provided credit is normally accepted in their curricula for these courses.

An unclassified student may schedule one or more courses on the S-U option with the approval of the dean. Courses completed on the S-U choice by unclassified students may not be applied later to degree requirements should the student become a degree candidate.

A graduate student may enroll in undergraduate courses, except for 6000-level courses taken for graduate credit, under the S-U option on the major professor's recommendation.

Students are not permitted to change from S-U grading to conventional grading or vice versa after the fifteenth class day of the fall and spring terms or the fifth class day of any summer term.

**Grade Reports.** Grade information may be obtained via tigeri at the Auburn University homepage, www.auburn.edu.

## Undergraduate Continuation in Residence Requirements

Auburn University may place an undergraduate student on academic warning or suspension at any time if the student flagrantly neglects academic work or fails to make satisfactory progress toward graduation.

An academically suspended student who has incomplete or other deferred grades which could, when cleared, remove the suspension will be permitted to register conditionally for the next semester. The suspension must be removed within three weeks of the beginning of the semester (one week for summer sessions); otherwise the Office of the Registrar will resign the student.

No credit earned at another institution by a student on academic suspension from Auburn will be used in clearing a suspension or in meeting requirements for an Auburn University degree.

A student who resigns after mid-term may be subject to academic suspension. (See Resignation for further information.)

**Academic Warning** status is imposed at the end of any term for which the student's cumulative GPA on Auburn course work is below 2.0.

**Academic Suspension.** Any student who is on Academic Warning status will be placed on Academic Suspension if both of the following conditions apply: (1) the term GPA is below 2.2 and (2) the cumulative GPA on Auburn course work is below that required for the designated number of hours earned as follows:

Hours Earned	Required Minimum Auburn Cumulative GPA
0-30.999.....	1.50
31-60.999.....	1.80
61-90.999.....	1.90
91 or more .....	1.97

All students, whether beginning freshmen or transfers, are not subject to suspension until they have received one semester warning.

**Terms of Suspension.** A student who incurs a First Academic Suspension may not enroll in the university for a minimum of one semester. Summer term does not count as a semester for terms of suspension. A student may not take coursework at Auburn University or at another institution of higher education during the period of suspension and apply the credit to an Auburn University degree. A student returning from academic suspension will be on Academic Warning status. A student who incurs a Second Academic Suspension may not enroll in the university for a minimum of two semesters. A student who has incurred two academic suspensions will be placed on Last Warning. A student on Last Warning who does not achieve at least a 2.2 in the current academic term or reach the overall GPA target listed above will be dismissed from the University. A student on suspension may not take coursework at Auburn University or any other institution of higher education, either during summer term or during the other semesters of suspension, and apply the credit to an Auburn University degree. Under some extraordinary circumstances, a student who has been dismissed from Auburn University may be readmitted at a future date. In these cases, no coursework taken elsewhere during the period of dismissal can be applied toward an Auburn University degree.

**Suspension for Resigning Students.** The academic dean will review all grades for the semester in which a student who is on Academic Warning resigns after mid-semester (or term). If the student's GPA in that term's course work results in the student's cumulative GPA being below the minimum cumulative GPA required, the student will incur Academic Suspension.

**James Harrison School of Pharmacy.** A student enrolled in the James Harrison School of Pharmacy who is placed on academic suspension and who wishes to re-enter the school must, in addition to complying with other university readmission requirements, be approved for readmission by the Pharmacy Admissions Committee and, when applicable, by the university's Admissions Committee.

**College of Veterinary Medicine.** Any student who earns less than a 2.25 GPA for any term will be placed on academic probation. A student who fails to earn a 2.25 GPA for any two terms in the same academic or calendar year may be dropped from the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have an overall average of 2.25 for an academic year or who does not have a veterinary overall average of 2.25 for an academic year or who does not have a veterinary school cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

A student who makes a grade of F in any course may be dropped from the College of Veterinary Medicine until such time as the course is offered again. Such students may be required to repeat certain other courses in the curriculum for the term in which a grade of F was earned.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the general scholastic requirements for continuance in the university. Scholastic penalties

incurred during enrollment in the College of Veterinary Medicine will become part of the student's record.

**Policies on Directed Studies, Repeated Courses, Course Withdrawals, Resignation and Appeals, and Grade Adjustment**

**Credit for Directed Studies.** The university policy on directed studies was approved effective August 2006. Auburn University offers directed readings courses, also referred to as special problems courses or independent studies, in accordance with established policy.

Directed readings courses allow in-depth study of a particular subject by a student who is well into her or his major and, in extraordinary circumstances, accommodate scheduling issues when no other remedy is available.

Directed readings courses should not normally be used as replacements for required courses or as a solution to routine scheduling problems.

Eligibility - To be eligible to take a directed readings course a student must be at junior level or above, and the course must be taken for credit toward the student's major or minor; exceptions may be approved as follows:

Exceptions concerning junior standing or higher, or concerning credit toward the student's major or minor, must be approved by the instructor and the offering department head/chair (or dean, if the instructor serves as department head/chair or associate dean), and by the dean of the college in which student is enrolled, if different from the offering college.

A student must have the approval of her/his dean and the provost to take more than 9 hours of directed readings coursework for credit over the course of her/his degree program.

Approval to Teach Course - A standard **Approval for Independent Study/Directed Readings Form**, available through the Office of the Provost Web site, will specify the necessary approvals and serve as the vehicle for obtaining them.

**Grade Adjustment.** All regularly admitted undergraduate students, who were enrolled during fall 2000 or after, may delete a maximum of three (3) course grades of D or F (including FA or U) associated with their undergraduate degree program from the computation of their cumulative GPA. Deletion of grades from the computation of the cumulative GPA is not available to professional students in audiology, pharmacy and veterinary medicine. Grades and credit considered as transfer credit, courses earned in a previously awarded baccalaureate degree, or grades that have been assigned as a result of academic misconduct are excluded from this policy.

This policy does not offer exemption from academic requirements for Auburn University degrees; adjustment only applies to grades in individual courses. **All core and major requirements must be met for graduation. Students should be aware that D or F/FA/U grades in required courses may be deleted from the computation of the cumulative GPA prior to a repeat, but the required course must be repeated at Auburn University before graduation.** Where a specific course is required for the core or a major, that course must be repeated to replace the deleted grade. Courses covered by this policy and needed to meet core area requirements or elective courses within a major may, subject to the approval of the academic dean, be replaced by any course accepted for that requirement, where applicable.

All courses for which a grade is awarded at Auburn University will remain on the transcript. Students may submit a written request for grade deletion to their academic dean's office at any time prior to graduation. Once a request for deletion of a grade has been granted and that grade has been removed from the calculation of the cumulative GPA, the grade and credit cannot be restored.

Students should follow guidelines for the repeat of courses in which grades of A, B, or C have been awarded (See the following section on Other Policies on Repeat of Courses). However, all grades will be used for determining all academic honors.

All Auburn University transcripts will include two GPAs: a semester GPA, and a cumulative GPA. The transcript will carry an appropriate notation that the cumulative GPA may not include grades for all courses attempted.

**Other Policies on Repeat of Courses.** No student may repeat a course for credit in which the student has previously earned a grade of A, B, or C without written permission by the student's academic dean. Courses specifically designated as repeatable in the *Auburn University Bulletin* are exempt from this regulation. Students may repeat courses in

which they earn a grade of D or F. Grades and hours for both attempts will be included in the calculation of the GPA unless the grade adjustment policy has been invoked for the first attempt. (See the previous section for limitations and procedures). If the grade adjustment policy is not invoked in the case of the repeat of a D grade, then the course credit hours may count only once toward graduation unless the course is designated as repeatable.

**Withdrawal from a course.** No grade penalty is assigned for dropping a course on or before mid-term. A student who withdraws from a course prior to the 15th class day during fall or spring semester will have no grade assignment; however, after the first 15 days a W (Withdrawn Passing) grade will be recorded for the course. For the summer terms, all withdrawals with no W grade assignment must be processed prior to the fifth class day.

A course may be dropped with a W after midterm only under unusual conditions such as serious illness of the student, serious illness or death of a member of the student's immediate family or other seriously disruptive circumstances. When approval for dropping the course under such circumstances is granted by the student's dean, a W may be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise, a grade of WF (Withdrawn Failing) is assigned.

**Resignation from all courses.** Students who wish to resign from all courses for a term should contact their deans. To avoid complications with student financial aid and other matters, resignations should not be done on the Web. Students may withdraw without penalty of failure if they resign no later than midterm, a date specified in the university calendar.

After this date, the dean will obtain from the student's instructors his or her scholastic standing at the time of resignation, and report it to the Office of the Registrar. If the student is failing in over half of the work (not counting any previously assigned grades of W for the term), the number of hours reported as failing will be counted as credit hours attempted and will be included in academic eligibility calculations and grade-point computation. Those hours reported as passing will not be counted in the grade-point computation. Furthermore, if a student is on Academic Warning at the time of resignation after midterm, the dean will review the grades and determine whether the student will be placed on academic suspension.

When a student through illness or physical disability, or other seriously disruptive circumstances is forced to resign after midterm, and when this situation has been the main factor in causing scholastic deficiencies, discretionary power in waiving the scholastic penalty will rest with the student's dean. A student who is resigned for disciplinary reasons will retain the academic status achieved immediately prior to the disciplinary action.

**Appeals of Suspension.** Students who incur Academic Suspension under the rules detailed in this bulletin may appeal the decision to the Admissions Committee if they believe extraordinary circumstances merit an exception to the rules. Any student on dismissal must appeal to their academic dean for readmission, and must subsequently receive approval from the Office of the Provost.

### Accommodation Policy for Students with Disabilities

Auburn University is committed to providing its students with an accessible campus and equitable learning environment. If you have a disability that requires reasonable academic accommodations, assistive technology, or support services, contact the Program for Students With Disabilities for additional information, 1228 Haley Center; 334-844-2096 (Voice/TT).

### Bachelor's Degree Requirements

To earn the bachelor's degree from Auburn University students must complete the requirements of the university's Core Curriculum, and they must choose a curriculum and complete its requirements and those of the college or school with at least a 2.0 average in all Auburn courses attempted, at least a 2.0 average on transfer credits accepted for their degree program, and a 2.0 average in all course work in the major. These requirements are university requirements. Individual colleges, schools and departments may have higher requirements. Credits required for graduation are at least 120 hours. The student's dean clears subject and non-course requirements in the curriculum; the registrar, together with the dean's office, clears total hours, GPA, and freshman English. A list of specific courses identified as major courses in each curriculum is available in the appropriate dean's office.

## Auburn University's General Education Goals and Outcomes

Auburn University has identified seven General Education Goals, representing the knowledge, skills, and perspectives graduates will attain through their academic programs, including the Core Curriculum. These goals and associated student learning outcomes are listed below.

### Information Literacy

Students will be information literate.

### Analytical Skills and Critical Thinking

Students will be able to read analytically and critically.

Students will be able to critique and construct an argument effectively.

Students will be able to apply simple mathematical methods to the solution of real-world problems.

Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi-step problems.

### Effective Communication

Students will be able to write effectively.

Students will demonstrate effective oral communication skills.

### Informed and Engaged Citizenship

Students will be informed and engaged citizens of the United States and the world.

### Intercultural Knowledge and Diversity Awareness

Students will understand and appreciate the diversity of and within societies of the United States and the world.

### Scientific Literacy

Students will understand and appreciate methods and issues of science and technology.

### Aesthetic Appreciation and Engagement

Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world.

Students are introduced to these goals in the Core Curriculum and develop higher levels of competency within majors and by co-curricular experiences.

## Auburn University's Core Curriculum

The purpose of the Auburn University Core Curriculum is to foster the development of educated citizens and to help students begin to attain the University's General Education Goals – the knowledge, skills, and perspectives that are hallmarks of an Auburn graduate. By completing courses that introduce the General Education Goals and that represent a range of disciplines in the humanities, the sciences and mathematics, and the social sciences, students begin to acquire an educated appreciation of the natural world, of human life, and of the interactions between them. In this way students are provided a broad foundation for the learning experience and are prepared for the degree programs in their chosen field of study.

The seven broad General Education Goals are made more specific through eleven associated student learning outcomes. Each course approved for the Core Curriculum both represents a key academic discipline and focuses on helping students reach at least one General Education Student Learning Outcome (SLO). Thus students are working to attain these key outcomes as they learn about broad fields of study. Some approved Core courses focus on more than one General Education Student Learning Outcome, and most of these outcomes are addressed by more than one course, providing students with choices. Likewise, Core courses offer students several options within the broad areas of the humanities, sciences and mathematics, and the social sciences. Effective fall semester 2011, students must satisfy Core Curriculum requirements by completing at least one course focused on each General Education Student Learning Outcome and at the same time completing the indicated minimum number of credit-hours in English Composition, the humanities, science and mathematics, and the social sciences. With appropriate planning, students should be able to satisfy both requirements in no more than 41-42 credit-hours.

The approved Core courses are listed below, grouped by the General Education Student Learning Outcome they address. Courses ending in "7" are Honors courses.

### Students will be information literate (SLO 1).

ENGL1120 or 1127 English Composition II\* (3 hrs)

### Students will be able to read analytically and critically (SLO 2).

ENGL 2200 or 2207 World Literature I (3 hrs)

ENGL 2210 or 2217 World Literature II (3 hrs)

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ENGL 2230 Survey of British Literature I (3 hrs)  
ENGL 2240 Survey of British Literature II (3 hrs)  
ENGL 2250 Survey of American Literature I (3 hrs)  
ENGL 2260 Survey of American Literature II (3 hrs)  
HONR 1007 Honors Technology and Culture I\* (6 hrs)  
HONR 1017 Honors Technology and Culture II\* (6 hrs)  
HONR 1027 Sustainability and the Modern World I\* (3 hrs)  
HONR 1037 Sustainability and the Modern World II\* (3 hrs)  
PHIL 1010 or 1017 Introduction to Logic\* (3 hrs)  
PHIL 1020 or 1027 Introduction to Ethics\* (3 hrs)  
PHIL 1030 or 1037 Ethics and the Health Sciences\* (3 hrs)  
PHIL 1040 Business Ethics\* (3 hrs)  
PHIL 1050 Introduction to Political Philosophy\* (3 hrs)  
PHIL 1060 Philosophy East and West\* (3 hrs)  
PHIL 1070 Art, Value, and Society\* (3 hrs)  
PHIL 1080 Introduction to Philosophy of Religion\* (3 hrs)  
PHIL 1090 Philosophy of Race and Gender\* (3 hrs)  
PHIL 1100 Introduction to Philosophy\* (3 hrs)

### Students will be able to critique and construct an argument effectively (SLO 3).

HONR 1007 Honors Technology and Culture I\* (6 hrs)  
HONR 1017 Honors Technology and Culture II\* (6 hrs)  
HONR 1027 Sustainability and the Modern World I\* (3 hrs)  
HONR 1037 Sustainability and the Modern World II\* (3 hrs)  
PHIL 1010 or 1017 Introduction to Logic\* (3 hrs)  
PHIL 1020 or 1027 Introduction to Ethics\* (3 hrs)  
PHIL 1030 or 1037 Ethics and the Health Sciences\* (3 hrs)  
PHIL 1040 Business Ethics\* (3 hrs)  
PHIL 1050 Introduction to Political Philosophy\* (3 hrs)  
PHIL 1060 Philosophy East and West\* (3 hrs)  
PHIL 1070 Art, Value, and Society\* (3 hrs)  
PHIL 1080 Introduction to Philosophy of Religion\* (3 hrs)  
PHIL 1090 Philosophy of Race and Gender\* (3 hrs)  
PHIL 1100 Introduction to Philosophy\* (3 hrs)

### Students will be able to apply simple mathematical methods to real-world problems (SLO 4).

### Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi-step problems (SLO 5).

MATH 1100 Finite Math and Applications\* (3 hrs)  
MATH 1120 Pre-Calculus Algebra\* (3 hrs)  
MATH 1130 Pre-Calculus Trigonometry\* (3 hrs)  
MATH 1150 Pre-Calculus Algebra and Trigonometry\* (4 hrs)  
MATH 1610 or 1617 Calculus I\* (4 hrs)  
MATH 1680 Calculus with Business Applications I\* (4 hrs)

### Students will be able to write effectively (SLO 6).

ENGL 1100 or 1107 English Composition I (3 hrs)  
ENGL 1120 or 1127 English Composition II\* (3 hrs)

### Students will demonstrate effective oral communication skills (SLO 7).\*\*

COMM 1000 Public Speaking (3 hrs)

### Students will be informed and engaged citizens of the United States and the world (SLO 8).

ECON 2020 or 2027 Principles of Microeconomics (3 hrs)  
ECON 2030 or 2037 Principles of Macroeconomics (3 hrs)  
HIST 1010 or 1017 World History I\* (3 hrs)  
HIST 1020 or 1027 World History II\* (3 hrs)  
HIST 1210 or 1217 Technology and Civilization I (3 hrs)  
HIST 1220 or 1227 Technology and Civilization II (3 hrs)  
HONR 1007 Technology and Culture I\* (6 hrs)  
HONR 1017 Technology and Culture II\* (6 hrs)  
HONR 1027 Sustainability and the Modern World I (3 hrs)  
HONR 1037 Sustainability and the Modern World II (3 hrs)  
POLI 1050 or 1057 Global Politics and Issues (3 hrs)  
POLI 1090 or 1097 Amer. Government in a Multicultural World (3 hrs)  
UNIV 2710 or HONR 2717 Human Odyssey I\* (3 hrs)  
UNIV 2720 or HONR 2727 Human Odyssey II\* (3 hrs)

### Students will understand and appreciate the diversity of and within societies of the United States and the world (SLO 9).

ANTH 1000 or 1007 Introduction to Anthropology (3 hrs)  
FLGC 1150 Global Fluency and Awareness (3 hrs)  
GEOG 1010 or 1017 Global Geography (3 hrs)  
HIST 1010 or 1017 World History I\* (3 hrs)  
HIST 1020 or 1027 World History II\* (3 hrs)

PSYC 2010 or 2017 Introduction to Psychology (3 hrs)  
SOCY 1000 or 1007 Sociology Global Perspective (3 hrs)  
UNIV 2710 or HONR 2717 Human Odyssey I\* (3 hrs)  
UNIV 2710 or HONR 2727 Human Odyssey II\* (3 hrs)

### Students will understand and appreciate methods and issues of science and technology (SLO 10).

BIOL1000 & 1010 Introduction to Biology & A Survey of Life (4 hrs each)  
BIOL1020 or 1027 & 1030 or 1037 Principles of Biology & Organismal Biology (4 hrs each)  
CHEM 1010+1011 & 1020+1021 Survey of Chemistry I & II (4 hrs each)  
CHEM 1030+1031 & 1040+1041 Fundamentals of Chemistry I & II (4 hrs each)  
CHEM 1110+1111 or 1117+1118 & 1120+1121 or 1127+1128 General Chemistry I & II (4 hours each)  
GEOL 1100 & 1110 Physical Geology & Historical Geology (4 hrs each)  
PHYS 1000 Foundations of Physics (4 hrs)  
PHYS 1150 Astronomy (4 hrs)  
PHYS 1500 & 1510 General Physics I & II (4 hrs each)  
PHYS 1600 or 1607 & 1610 or 1617 Engineering Physics I & II (4 hrs each)  
SCMH 1010 or 1017 Concepts of Science (4 hrs)

### Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world (SLO 11).

ARCH 2600 The Art of Architecture, Place, and Culture (3 hrs)  
ARTS 1710 or 1717 Introduction to Art History I (3 hrs)  
ARTS 1720 or 1727 Introduction to Art History II (3 hrs)  
ARTS 1730 or 1737 Introduction to Art History III (3 hrs)  
MUSI 2730 or 2737 Appreciation of Music (3 hrs)  
RTVF 2350 Introduction to Film Studies (3 hrs)  
THEA 2010 or 2017 Introduction to Theater (3 hrs)

\* Course focuses on more than one General Education Outcome.

\*\* For some students, the Oral Communication Outcome is addressed in one or more courses in the major rather than in the Core Curriculum.

Students must also satisfy Core requirements in terms of broad academic areas. Approved Core courses grouped by the four required academic areas are listed below:

### ENGLISH COMPOSITION: 6 hours required

ENGL 1100 or 1107 English Composition I (3 hrs)  
ENGL 1120 or 1127 English Composition II (3 hrs)

### HUMANITIES: 12 total hours required

Literature (at least 3 hours): Students must complete at least one literature course and a history sequence OR a literature sequence and at least one history course.

ENGL 2200 or 2207 World Literature I (3 hrs)  
ENGL 2210 or 2217 World Literature II (3 hrs)  
ENGL 2230 Survey of British Literature I (3 hrs)  
ENGL 2240 Survey of British Literature II (3 hrs)  
ENGL 2250 Survey of American Literature I (3 hrs)  
ENGL 2260 Survey of American Literature II (3 hrs)

Fine Arts (at least 3 hrs): Students must complete at least one fine arts course from this list.

ARCH 2600 The Art of Architecture, Place and Culture  
ARTS 1710 or 1717 Introduction to Art History I (3 hrs)  
ARTS 1720 or 1727 Introduction to Art History II (3 hrs)  
ARTS 1730 or 1737 Introduction to Art History III (3 hrs)  
MUSI 2730 or 2737 Appreciation of Music (3 hrs)  
RTVF 2350 Introduction to Film Studies (3 hrs)  
THEA 2010 or 2017 Introduction to Theatre (3 hrs)

Other Humanities Choices: In addition to the Literature and Fine Arts courses listed above, students may select courses from this list to complete the required 12 hours in Humanities.

COMM 1000 Public Speaking (3 hrs)  
FLGC 1150 Global Fluency and Awareness (3 hrs)  
HONR 1007 Technology and Culture I (3 of 6 credit hours assigned to Humanities)  
HONR 1017 Technology and Culture II (3 of 6 credit hours assigned to Humanities)  
PHIL 1010 or 1017 Introduction to Logic (3 hrs)  
PHIL 1020 or 1027 Introduction to Ethics (3 hrs)  
PHIL 1030 or 1037 Ethics and the Health Sciences (3 hrs)  
PHIL 1040 Business Ethics (3 hrs)  
PHIL 1050 Introduction to Political Philosophy (3 hrs)  
PHIL 1060 Philosophy East and West (3 hrs)  
PHIL 1070 Philosophy of Art, Value, and Society (3 hrs)  
PHIL 1080 Introduction to Philosophy of Religion (3 hrs)

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PHIL 1090 Philosophy of Race and Gender (3 hrs)  
 PHIL 1100 Introduction to Philosophy (3 hrs)  
 UNIV 2710 or HONR 2717 Human Odyssey I (3 hrs)

British Literature II ENGL 2240  
 American Literature I ENGL 2250  
 American Literature II ENGL 2260

### SCIENCE AND MATHEMATICS: 11-12 hours required

Mathematics (3-4 hrs): Students must complete at least one mathematics course from this list.

MATH 1100 Finite Math and Applications (3 hrs)  
 MATH 1120 Pre-Calculus Algebra (3 hrs)  
 MATH 1130 Pre-Calculus Trigonometry (3 hrs)  
 MATH 1150 Pre-Calculus Algebra and Trigonometry (4 hrs)  
 MATH 1610 or 1617 Calculus I (4 hrs)  
 MATH 1680 Calculus with Business Applications I (4 hrs)

Science sequence (8 hrs): Students must complete a sequence from this list.

BIOL 1000 & 1010 Introduction to Biology & Survey of Life (4 hrs each)  
 BIOL 1020 or 1027 & 1030 or 1037 Principles of Biology & Organismal Biology (4 hrs each)  
 CHEM 1010+1011 & 1020+1021 Survey of Chemistry I & II (4 hrs each)  
 CHEM 1030+1031 & 1040+1041 Fundamentals of Chemistry I & II (4 hrs each)  
 CHEM 1110+1111 or 1117+1118 & 1120+1121 or 1127+1128 General Chemistry I & II (4 hrs each)  
 GEOL 1100 & 1110 Physical Geology & Historical Geology (4 hrs each)  
 PHYS 1500 & 1510 General Physics I & II (4 hrs each)  
 PHYS 1600 or 1617 & 1610 or 1617 Engineering Physics I & II (4 hrs each)  
 SCM 1010 or 1017\* & BIOL 1010\*\* Concepts of Science & Survey of Life (4 hrs each)  
 SCM 1010 or 1017\* & CHEM 1010 +1011\*\* Concepts of Science & Survey of Chemistry I (4 hrs each)  
 SCM 1010 or 1017\* & GEOL 1100\*\* Concepts of Science & Physical Geology (4hrs each)  
 SCM 1010 or 1017\* & PHYS 1000\*\* Concepts of Science & Foundations of Physics (4 hrs each)  
 SCM 1010 or 1017\* & PHYS 1150\*\* Concepts of Science & Astronomy (4 hrs each)

### SOCIAL SCIENCES: 12 hours total required

History (at least 3 hours): Students must complete at least one History course & a Literature sequence OR a History sequence and at least one Literature course.

HIST 1010 or 1017 World History I (3 hrs)  
 HIST 1020 or 1027 World History II (3 hrs)  
 HIST 1210 or 1217 Technology and Civilization I (3 hrs)  
 HIST 1220 or 1227 Technology and Civilization II (3 hrs)

Other Social Sciences: In addition to the history courses listed above, students can select hours in other Social Science courses listed below to total 12.

ANTH 1000 or 1007 Introduction to Anthropology (3 hrs)  
 ECON 2020 or 2027 Principles of Microeconomics (3 hrs)  
 ECON 2030 or 2037 Principles of Macroeconomics (3 hrs)  
 GEOG 1010 or 1017 Global Geography (3 hrs)  
 HONR 1007 (3 of 6 credit hours assigned to Social Sciences) Technology and Culture I  
 HONR 1017 (3 of 6 credit hours assigned to Social Sciences) Technology and Culture II  
 HONR 1027 Sustainability and the Modern World I  
 HONR 1037 Sustainability and the Modern World II  
 POLI 1050 or 1057 Global Politics and Issues (3 hrs)  
 POLI 1090 or 1097 American Government in a Multicultural World (3 hrs)  
 PSYC 2010 or 2017 Introduction to Psychology (3 hrs)  
 SOCY 1000 or 1007 Sociology Global Perspective (3 hrs)  
 UNIV 2720 or HONR 2727 Human Odyssey II (3 hrs)

\* SCM 1010 or 1017 should be taken as the first course in this sequence.  
 \*\* Other pairings with SCHM 1010 or 1017 may be possible. See academic advisor for details.

### Core for Students Starting College Before Fall 2011

Students beginning college work before Fall 2011 must meet the previously established requirements listed below\*:

#### ENGLISH COMPOSITION (6 semester hours):

English Composition I ENGL 1100  
 English Composition II ENGL 1120

#### ENGLISH LITERATURE (6 semester hours):

World Literature I ENGL 2200  
 World Literature II ENGL 2210  
 British Literature I ENGL 2230

#### PHILOSOPHY (3 semester hours):

Introduction to Logic PHIL 1010  
 Introduction to Ethics PHIL 1020  
 Ethics and the Health Sciences PHIL 1030  
 Business Ethics PHIL 1040

#### FINE ARTS (3 semester hours):

The Art of Architecture, Place and Culture ARCH 2600  
 Introduction to Art History I ARTS 1710  
 Introduction to Art History II ARTS 1720  
 Introduction to Art History III ARTS 1730  
 Appreciation of Music MUSI 2730  
 Introduction to Theatre THEA 1010  
 Introduction to Theatre THEA 2010

#### MATHEMATICS (3 semester hours):

Finite Mathematics & Applications MATH 1100  
 Pre-Calculus Algebra MATH 1120  
 Pre-Calculus Trigonometry MATH 1130  
 Pre-Calculus Algebra & Trigonometry MATH 1150  
 Calculus I MATH 1610  
 Calculus with Business Applications I MATH 1680  
 Calculus for Engineering & Science I MATH 1710

#### SCIENCE (8 semester hours in a sequence):

Introductory to Biology BIOL 1000  
 A Survey of Life BIOL 1010  
 Principles of Biology BIOL 1020  
 Organismal Biology BIOL 1030  
 Survey of Chemistry I CHEM 1010  
 Survey of Chemistry II CHEM 1020  
 Fundamentals of Chemistry I CHEM 1030  
 Fundamentals of Chemistry II CHEM 1040  
 Gen. Chemistry for Scientists and Engineers I CHEM 1110  
 Gen. Chemistry for Scientists and Engineers II CHEM 1120  
 Physical Geology GEOL 1100  
 Historical Geology GEOL 1110  
 Foundations of Physics PHYS 1000  
 Astronomy PHYS 1150  
 General Physics I PHYS 1500  
 General Physics II PHYS 1510  
 Engineering Physics I PHYS 1600  
 Engineering Physics II PHYS 1610  
 Concepts of Science SCM 1010

#### HISTORY (6 semester hours in a sequence):

World History I HIST 1010  
 World History II HIST 1020  
 Technology & Civilization I HIST 1210  
 Technology & Civilization II HIST 1220  
 Human Odyssey I UNIV 2710  
 Human Odyssey II UNIV 2720

#### SOCIAL SCIENCE (6 semester hours):

##### Group I (select one):

Intro. to Anthropology: A 4-Field Approach ANTH 1000  
 Global Geography GEOG 1010  
 Introduction to Psychology PSYC 2010  
 Sociology: Global Perspectives SOCY 1000

##### Group II (select one):

Principles of Microeconomics ECON 2020  
 Political Economy POLI 1020  
 American Government in a Multicultural World POLI 1090

\* Students in the Honors College may take Honors sections of Core courses as available.

**English Composition Requirements.** The following covers a number of possible situations for students who enroll at Auburn University as freshmen and for students who are transferring from another institution into Auburn. Different requirements are based on when the student first began collegiate study. If a student's particular situation is not covered in the explanations below, or if a student has questions about his or her status, then the student should contact the Coordinator of Composition by calling the Department of English at (334) 844-4620. Students may also contact the department via e-mail at english@auburn.edu.

Students beginning collegiate study at Auburn as freshmen in fall 2000

or later must complete ENGL 1100-1120, English Composition I-II, with a grade of C or better in each course. (Students in the Honors College must complete ENGL 1107-1127, Honors Writing Seminar I-II, with a grade of C or better in each course.) The grades of C or better are required by the Articulation and General Studies agreement. Students cannot take ENGL 1120 (or 1127) unless they earn a C or better in ENGL 1100 (or 1107), and they must earn a C or better in ENGL 1120 (or 1127) to be eligible to take ENGL 2200-2210, World Literature I-II or any other Core Literature courses.

Students who began collegiate study at Auburn between summer 1998 and summer 2000 have met the freshman composition requirement if they have completed ENGL 0110-0112 (or the Honors equivalents, ENGL 0118-0120) with a grade of C or better in each. (ENGL 0110-0112 and ENGL 0118-0120 were the course numbers in use between 1998 and 2000.) If they have completed only the first course in the composition sequence, they must complete ENGL 1120 (or 1127) with a grade of C or better. If they have not taken either course in the sequence, they must take ENGL 1100-1120 (or 1107-1127) and pass with a grade of C or better in each.

Students who began collegiate study at Auburn between fall 1991 and spring 1998 have met the English composition requirements if they have completed ENGL 0110 (or ENGL 0118). Only one freshman composition course was required at the time. Moreover, students in this group graduating after summer 1998 have not been required to meet the core junior level writing requirement which had earlier been in place. The provost waived that requirement. Students in this group should, however, consult with an advisor in their major course of study to see if that major requires an additional writing course beyond English Composition I.

Transfer students beginning collegiate study at another institution in fall 2000 or later must meet Auburn's six semester-hour freshman composition requirement. They may do so in one of two ways: (1) take freshman composition I and II at another institution, provided these courses are comparable in scope and coverage to ENGL 1100-1120, and earn a grade of C or better in each, or (2) take ENGL 1100-1120 (or 1107-1127) at Auburn, if they did not take composition at the other institution, and earn a grade of C or better in each. NOTE: transfer students will also meet the Auburn freshman composition requirement if they take two five quarter-hour courses and pass with grades of C or better in both.

Transfer students who have earned a grade of C or better in freshman composition I, and earned three semester hours or five quarter hours, at another institution will be required to take ENGL 1120 (or 1127) at Auburn. Students may also fulfill the requirement for ENGL 1120 (or 1127) by taking a freshman composition II course at another institution, provided the course is similar in scope and coverage to ENGL 1120 (or 1127) and they earn a grade of C or better.

Transfer students who have earned eight or more quarter hours or six semester hours, and have thereby met the freshman composition requirement of another institution, will be given credit for ENGL 1100-1120. Two conditions must be met for credit to be given: the minimum of eight quarter hours or six semester hours involves no duplication, and the student has earned a grade of C or better in each freshman composition course.

Transfer students who began collegiate study at another institution between summer 1998 and summer 2000 must meet Auburn's six semester-hour English composition requirement. They may do so in the ways explained in the preceding paragraph.

Transfer students who began collegiate study at another institution between fall 1991 and spring 1998 must meet the same requirements as students who began college at Auburn during the same period (see paragraph 4 above). They may meet this requirement by transferring a writing course taken at another institution, provided this course is comparable in scope and coverage to freshman composition I as offered at Auburn during this period, or by taking ENGL 1100 (or 1107).

Transfer students who have been exempted, on the basis of standardized test scores from freshman composition I carrying five quarter hours or three semester hours at another institution, and who have earned a grade of C or better in a subsequent freshman composition course at the same institution carrying the same amount of credit, will have fulfilled Auburn's freshman composition requirement. Transfer students who have been exempted with credit will have both the exemption credit and course credit accepted at Auburn. Transfer students who have been exempted without credit will be given the course credit and, in addition, will be awarded sufficient advanced standing credit to fulfill Auburn's freshman composition requirement.

Transfer students who have been exempted from freshman composition I at another institution but have had no subsequent freshman composition course there or have not earned a grade of C or better in the subsequent

course must still complete Auburn's six semester-hour freshman composition requirement. However, if they meet any of Auburn's criteria for exemption from ENGL 1100, they will receive three semester hours of credit for ENGL 1100 at Auburn and will be required to take ENGL 1120 (or 1127) at Auburn. Additionally, if they meet any of Auburn's criteria for exemption from ENGL 1120, they will receive three semester hours of credit for ENGL 1120.

All transfer students should confer with their major academic advisor concerning the composition requirement as soon as possible after enrolling at Auburn.

Students who enter an undergraduate program at Auburn after receiving a bachelor's degree from an accredited institution are exempt from meeting the above requirements.

All students may be eligible to exempt ENGL 1100 and/or ENGL 1120 with credit on the basis of their score in one of the following standardized tests: the English portion of the ACT; the verbal portion of the SAT; the International Baccalaureate English A1 exam; or the CEEB Advanced Placement Exam in English. Note that CLEP test scores are not eligible for exemption. The exemption scores for each test are reviewed each year and are available in the Auburn University Advanced Placement Program, which is distributed by the Office of the Registrar. See <http://www.auburn.edu/administration/registrar/helpful-resources/enrollment/ap-ib-clep-information.html>

Students who get a grade of D or F in a freshman composition course at Auburn must repeat that course. Students may repeat the course at another institution, unless they wish to use the grade adjustment policy to exclude the grade of D or F.

**Literature Requirements.** All Auburn students beginning college work before Fall 2011 must fulfill the Core Curriculum literature requirements by taking one of three sequences: ENGL 2200 or 2207 (World Literature I or Honors World Literature I) and ENGL 2210 or 2217 (World Literature II or Honors World Literature II), ENGL 2230 and ENGL 2240 (British Literature I and II), or ENGL 2250 and ENGL 2260 (American Literature I and II). Students beginning college work in Fall 2011 or after must have at least one Core literature course and a complete sequence in either literature or history. Completion of the freshman composition requirement is a prerequisite for all the literature courses.

Literature courses taken at other institutions may fulfill the Core literature requirement with the following provisions:

1. Students may transfer as equivalents of the three sequences for Core Curriculum credit only sophomore-level literature survey courses covering a broad historical period.
2. Students transferring a single literature course may receive credit for ENGL 2200 only if it is the first course in a World Literature sequence and includes literature of the ancient world. Any survey of modern literature (beginning at any time after 1600 and extending to the present), whether world literature or a national literature, will transfer as credit for ENGL 2210, 2230, 2240, 2250 or 2260 as appropriate.
3. Freshman literature courses and literature courses based on genres (poetry, the short story, the novel), themes, or narrowly defined historical periods will not fulfill the Core literature requirements but are eligible for transfer as electives.

Students or advisors with special questions about placement or credit for the Core literature requirements may call the Coordinator of Undergraduate Studies at (334) 844-4620.

**History Requirements.** One of the purposes of the university's Core Curriculum is to give students an understanding of their culture and its backgrounds. Course sequences designed especially for this purpose are those in World History and Technology and Civilization. Native students beginning college work before Fall 2011 must earn six hours of credit in one of these sequences. Students beginning college work in Fall 2011 or after must have at least one Core history course and a complete sequence in either literature or history.

Credit in history earned at another institution may be allowed on transfer as shown below in meeting this particular requirement.

1. If transfer students have three hours in the first course of a broad, introductory two-course sequence in world history or western civilization or technology and civilization or U.S. history to complete a history sequence, they must complete HIST 1020 (for world history and western civilization), HIST 1220 (for tech. and civ.) or HIST 2020 (for U.S. history). A transfer student who has taken the last course in a similar two-course sequence would take HIST 1010 or HIST 1210 or HIST 2010 to complete a sequence.



2. Students entering an undergraduate program at Auburn, after earning bachelors' degrees from other accredited universities, may be exempted from the history requirements unless their curricula specify otherwise.

**Oral Communication Requirement.** All Auburn University bachelor's degree programs provide components to ensure competence in oral communication skills. Program information documenting oral communication components is maintained in the Office of the Provost/Vice President for Academic Affairs. Appropriate accommodations will be made to enable individuals with disabilities to satisfy this requirement.

### Academic Programs and Curricula

An **academic program** is an organized plan of study which, when successfully completed, is recognized by the awarding of a degree. It includes all courses and related activities required by the university and those required by a school, college, department or interdisciplinary program. **At Auburn University, the minimum number of semester hours in an undergraduate academic program is 120, including 41 semester hours of the Core Curriculum.** The academic program must include the University Core Curriculum and the major. It may also include a school or college core curriculum, a minor, and supporting course work. For undergraduates, the academic program is the most general term describing the formal course of their baccalaureate education. Students not completing an approved academic program do not qualify for baccalaureate degrees. Students who are completing an academic program may take courses in addition to those required by it including a minor or free electives beyond those required for graduation by their academic programs.

An undergraduate program option is a formal variation of an academic program by the offering department which meets objectives that may be more specifically focused. These additional objectives are integrated with the basic program. Some academic programs are structured only in the form of several formal program options. A program option is designated on the transcript. Other variants, which may carry the name of "track," "concentration," "emphasis," or similar terms, will not be designated on the transcript, but must meet the same minimal requirements for overlap as formal options. At Auburn University, all formal program options, like all academic programs, must include the Core Curriculum. Moreover, a formal program option must preserve the integrity of the academic program of which it is a variant by requiring at least half of the specific course work required by the program above and beyond the Core Curriculum. (In majors that are largely "menu-driven," with few specific course requirements, the menus of courses must contain sufficient overlap that a student in one option is not excluded from having half or more courses in common with students in any other option in that degree program.) All academic programs and designated variations (whether called options, tracks, concentrations, or any other name) must be approved by the Alabama Commission on Higher Education (ACHE).

A graduate program option is a formally approved variation of an academic program by the offering department which meets objectives that may be more specifically focused. These additional objectives are integrated with the basic program. A formal graduate program option must preserve the integrity of the academic program of which it is a variant. Specifically, the formal program option must 1) be in a recognized sub-field of the discipline; and 2) share at least half of the total credits of the degree program. Only formally approved graduate program options are designated on the transcript. Other less formal variants, which may carry the name of "track," "concentration," "emphasis," or similar terms, are not designated on the transcript; however, all academic programs and designated variations (whether called "options," "tracks," "concentrations," "emphases" or some similar term) must be approved by the Alabama Commission on Higher Education (ACHE).

A **curriculum model** is the schematic organization of an academic program that is listed in this bulletin. **A curriculum model is outlined for all undergraduate academic programs and program options and must be represented in the Auburn University Bulletin.**

A **major** is usually the largest part of an academic program which differentiates it from other programs. The term designates that portion of the program which consists of a specified group of courses offered by a particular academic department or interdepartmental program. The major may include lower-division courses and always includes specified upper-division courses or choices among courses offered by the department or interdepartmental program. The major may include course work from

other departments. The major does not include other components of the academic program: the Core Curriculum, a school or college curriculum (if any), a required second major (if any), a required minor (if any), supporting course work (if any), or free electives. **At Auburn University, all majors must represent substantial academic concentration in a well-defined discipline or interdisciplinary field. The minimum number of hours required for an undergraduate major is 30 hours of course work in the discipline or in a closely allied field. Of these hours, a minimum of 20 must be taken in upper-division (numbered 3000 or above) courses in the major. Departments must have the consent of other departments before requiring their courses in a major.**

A **minor** is an organized sequence or cluster of courses, including both lower- and upper-division courses, offered by a department or interdepartmental program. It is more restricted in scope than the major but may also have a somewhat different focus and objective that make it appropriate for students whose principal concentration is in another discipline. Not all departments or interdepartmental programs offer a minor. At Auburn University, the term minor designates those sequences or clusters of courses that have been formally proposed as minors by departments or interdepartmental programs and approved by the University Senate Curriculum Committee. The minimum number of semester hours in a minor is 15. Of these, six hours may be lower-division courses. The remaining semester hours in the minor (a minimum of nine hours) must be courses numbered 3000 or above. At least nine semester hours required for the minor must be completed at Auburn University. Courses a student has taken in fulfillment of the university Core Curriculum, the school/college core curriculum (if any) or the courses designated as "in the major" (e.g. counting toward the GPA "in the major") may not be used to fulfill a minor. Elective courses (not in the major) and required supporting courses (e.g. required courses in the academic program that are not used to fulfill the university Core Curriculum or the school/college core and which are not counted toward the GPA in the major) may be used toward a minor. Some academic programs may require students to earn a minor. Students whose academic programs do not require a minor are free to earn one, though in such cases they should recognize that fulfilling the requirements for a minor may delay their graduation. No academic program is required to allow for a minor in its curriculum model. Students must follow announced university procedures and deadlines for declaring a minor. In addition, students may not be awarded a minor after the degree for the major has been awarded. **No course taken under the S/U option may be counted toward a minor. Students must earn a minimum overall grade average of C (2.0) on all course work in the minor. Individual colleges, schools and departments may have higher grade-point requirements.**

The phrase "supporting course work" designates courses that are required for the completion of a specific academic program but not included in the University Core Curriculum, the major, the school or college core curriculum (if any), the minor (if required), and free electives. At Auburn University, academic programs may require courses that are not specific to the major but support the general education and preparation of students in that program. Because these courses are usually outside the department of the major area of study, departments must have approval of the departments offering the courses they designate as required supporting course work. Supporting course work may be used in satisfying the requirements for a minor if a minor is not required by the academic major.

**Second baccalaureate and/or concurrent degrees.** To earn a second baccalaureate degree, a student must complete all the additional requirements for the second degree (including course work in the major fields, college/school core requirements and courses in support of a major). At least 30 semester hours of the second degree must be unique to the second degree and may not be used as major, supporting or core courses for the first degree. In addition, the total number of hours to complete both degrees must total at least 30 additional semester hours. If 30 unique hours or 30 additional hours cannot be identified, the student is not eligible to receive a second baccalaureate degree. Students who are completing a second degree must comply with all the same grade-point requirements and residency requirements as other students. Students may elect to pursue and to receive the two degrees simultaneously if college and departmental requirements can be met simultaneously. Not all colleges allow students to receive two of the same degree from the same college, e.g., Business. All students should consult with their advisor concerning eligibility for a second degree,

and if eligible, complete appropriate paperwork to declare the second degree. It is recommended that students declare the second degree prior to the beginning of the senior year. It is the student's responsibility to file a graduation application for each degree being sought. If the two degrees are in the same college, the student must file two applications with his/her dean's office. If the student is completing degrees in different colleges, one application must be filed with each dean's office. Students completing a second or two degrees concurrently receive a diploma for each degree. The transcript will list each degree and each major. Eligibility for graduation with academic honors for the second baccalaureate degree requires a minimum of 60 semester hours above the requirements for the first baccalaureate degree. Students earning the second baccalaureate degree must earn the minimum overall grade average required for the honors distinction on the 60 additional hours for the second degree and must be achieved on Auburn University courses. Honors calculations for the second baccalaureate degree follows the same procedures as graduation honors for the first degree (see Graduation Honors).

Students who completed a first baccalaureate degree at an institution other than Auburn University and subsequently pursue a second degree at Auburn University are not required to fulfill Auburn University's Core Curriculum. However, they may be required to take some classes listed as fulfilling the Auburn University Core Curriculum if these classes are pre-requisites to major classes.

**Double major.** To earn a double major, a student must complete all the major courses in the second major (courses bolded in the curriculum model) and meet all the requirements for both majors (fields of study) such as grade-point requirements, the department, school or college core, etc. The minimum number of hours required for an undergraduate major is 30 semester hours. Of these major courses, at least 20 hours must be unique, not courses that have been used as major, supporting, or core courses in the first major. If at least 20 hours of unique courses do not exist between the two majors, a student is not eligible to complete a double major. The student in a double major is not required to complete the college/school core requirements or the courses in support of the second major. The student will designate which major is the primary field of study and which is the secondary field of study. The student must complete all degree requirements in whichever curriculum he/she designates as the primary field of study. If the two majors for the double major lead to the same degree, e.g., BS or B.A, both majors will appear on the diploma and on the transcript. However, if the two majors for a double major lead to a BA and a BS, the degree will be determined based on the primary field of study and that will dictate which baccalaureate major will appear on the diploma. The student must complete the appropriate forms declaring the double major to the Office of the Registrar and to the dean's office in his/ her college(s). The student who completes the requirements for a double major receives a degree from the college of his/her first or primary field of study and has the successful completion of the secondary major entered on his/her transcript. A double major does not result in two degrees. Students should consult with their advisor concerning this option and, if eligible for a double major, complete the appropriate paperwork prior to the beginning of the senior year. If a student changes his/her decision to pursue a double major, it is his/her responsibility to notify the Office of the Registrar and the dean's office of his/her college(s). A double major may not be awarded after the degree for the primary major has been granted. Additional majors, beyond a double major, are allowed if the student can complete all the requirements outlined above, including 20 unique hours in the additional major, which are not used in any other major, or for supporting courses in any other major, or courses used to satisfy university core curriculum requirements.

**Accelerated Bachelor's / Master's Degree Plan.** The Accelerated Bachelor's / Master's Degree Plan allows Auburn students in some academic programs to count up to nine approved hours (in a 30-35-hour master's program) or 12 approved hours (in a 36-hour or greater master's program) toward both a bachelor's and a master's degrees. These hours must be at the graduate level.

To be considered for admission, students must have completed at least 45 credit hours and no more than 96 credit hours, including advanced placement credits. Transfer students must have completed at least 24 credit hours at Auburn University. All students must have a cumulative GPA of 3.4 / 4.0 or higher on course work completed at Auburn. Individual graduate programs may set higher standards or require additional criteria for admission to the accelerated degree program.

Students must complete an "Application for Admission to the Accelerated Bachelor's / Master's Degree Plan," and work with a graduate advisor in

the degree-granting department to complete an approved Plan of Study, including: a) a list of the courses that count toward both the undergraduate and graduate degree; and b) the projected dates for the completion of the bachelor's and master's degrees. Students in the Honors College remain eligible to graduate with Honors while participating, and should consult with an Honors advisor.

Students must maintain a cumulative GPA (CGPA) of 3.4 / 4.0 or higher on Auburn University coursework; if the student completes the bachelor's degree requirements with a cumulative GPA of less than 3.4 / 4.0 at Auburn, the student cannot double-count credit hours and is terminated from the program.

Students must apply for admission to the Graduate School by the prescribed deadline. Admission to the Accelerated Degree Plan does not guarantee admission to the Graduate School. Students cannot opt to bypass the bachelor's degree.

Students may withdraw voluntarily from the Accelerated Plan at any time. Students must notify, in writing, the graduate program officer and the coordinator/director of undergraduate studies in their respective departments. Students who withdraw from the program voluntarily or because they do not meet program requirements will not be awarded graduate credit for double-counted courses.

**Residence Policy. Percentage of Course work Earned in Residence at Auburn University Policy.** A minimum of 25 percent of the total semester hours are required for the baccalaureate degree and at least 50% of the course work in the major must be earned in residence at Auburn University. As a general rule, these hours must be taken in the final year and in the school/college curriculum of graduation. The student's dean may waive the final year's residence and may also allow course credit to be earned at another institution during the final year. However, the minimum of 25 percent of course work in residence at Auburn University is a firm requirement.

**Undergraduate Distance Learning.** All regularly admitted campus-based students are eligible to take Auburn University distance courses. A campus-based student may not exceed the maximum class hour load by adding a distance education course.

All non-traditional/distance education students must apply and meet Auburn University's minimum admission requirements. Non-traditional/distant students will be permitted to register for distance courses only. These non-traditional/distance students are non-degree seeking students. Thus, a new application is required each academic year. Non-degree seeking students are not eligible for financial aid. A non-degree seeking student, who wishes to become a degree-seeking student, must apply to become a degree-seeking student and must meet the transfer requirements of 30 hours, including any Auburn University distance education courses, with an overall GPA of 2.5.

Information on available courses may be obtained from: Distance Learning & Testing Services, 118 Foy Hall, Auburn University, Auburn, AL 36849. Tel. (334) 844-5103

**Credit For Military Science and Physical Education.** A student may be allowed a maximum of 6 credits in military science courses toward graduation. All undergraduate curriculum models must accommodate these 6 credits in military science either through elective hours or substitutions. A student may be allowed four credits of physical education activity courses toward graduation. A student who has served on active duty in the Armed Forces may receive physical education credits as follows: for less than six months of service, no credit; for six months to less than a year, two hours of credit for Physical Education; for one year or more in the service, three hours of credit. Application for credit for military experience should be submitted to the Office of the Registrar.

## Academic Advising

Academic Advising Web Site: [www.auburn.edu/academicadvising](http://www.auburn.edu/academicadvising). In relation to registration for a given academic term and preparation of an academic plan of study, students are strongly encouraged to meet with an academic advisor in his/her chosen college or school. Contact information for the academic advisors in each college or school can be found on the Web site shown above. Please note that all students are strongly encouraged to meet with an academic advisor prior to registration. In selected colleges or schools, students are required to meet with an academic advisor prior to registration.

## Change of Major or Curriculum

Students must have their dean's approval to change to another major within the same college or school. To change Colleges or Schools within the university, students must complete a Change of Major Form.

## Internal Transfers and High-Demand Majors

Transfer applicants (from on and off campus) to certain high-demand majors must meet specific requirements for admission to the major.

In the College of Architecture, Design and Construction, the following programs have been approved for special admissions requirements based on space available in the major: bachelor of architecture, bachelor of interior architecture, bachelor of science in building science, bachelor of industrial design, and bachelor of fine arts in graphic design.

In the College of Education, the following programs have been approved for special admissions requirements based on space available in the major: bachelor of science in early childhood education, bachelor of science in exercise science, and bachelor of science in elementary education.

In the College of Liberal Arts, the following programs have been approved for special admissions requirements based on space available: bachelor of science in communication disorders, bachelor of arts in radio/television/film, bachelor of arts in communication, bachelor of arts in public relations, bachelor of arts in journalism, bachelor of arts in health administration, bachelor of arts in music, bachelor of social work, bachelor of fine arts in theater.

In addition, the bachelor of science in nursing has been approved for special admissions requirements based on space available, and the bachelor of science in interior design in the College of Human Sciences has been approved for special admissions requirements based on space available. Restrictions also apply on transfer into all programs in the College of Business.

Students wishing to transfer into a high demand major should contact the school or college advising office for details on the criteria for admission and the application process.

## Curriculum Model Change

When the university changes a curriculum model, students in the altered curriculum may be required to complete the subjects and hours placed above the level to which they have progressed. They will not, however, be required to complete additional subjects placed in the curriculum below the level they have achieved. Courses shifted from one class level to another are exempt from this latter provision. Students' deans will determine the revised subject requirements, and the registrar will determine the revised total hour and grade-point requirements. In no case for students who are continuously enrolled, however, will the changed curriculum compel them to accumulate additional hours and grade points to graduate. In other words, students must complete the university core requirements in place during the term that they first enroll, and in general they must complete the school, college or major requirements in place when they declare a major. Undergraduate students who have not been enrolled at Auburn University for a period of five years or more and who are returning to the same curriculum may be subject to different university, college, school or departmental requirements than those which existed at the time of their initial entry, as well as those which existed at the program level when continuous enrollment ceased.

## Academic Program Assessment

Auburn University is committed to fostering the academic achievement and personal development of its students. To carry out that commitment, the university continuously gathers information about the effectiveness of its academic programs, about the progress of its students toward educational and personal goals, and about the achievements and perspectives of its alumni. This information is used to monitor program effectiveness, to recognize educational trends and opportunities, and to develop a sound, factual basis for academic planning.

Each Auburn student is expected to participate in the university's assessment efforts. Academic programs use various means to gather assessment information, including portfolios, performances, achievement tests, comprehensive examinations, surveys, interviews, focus groups, evaluation forms, and other methods. While enrolled, a typical student can expect to take part in one or more of these assessment activities. The total time spent on assessment activities is not likely to exceed 15 hours

over the course of four years of enrollment. Participation in these activities may be a completion requirement for some degree programs.

## Satisfactory Progress

**Student Athletes.** In addition to meeting the general academic requirements of the university, student athletes must meet all academic requirements, including those relating to satisfactory progress toward a degree, set forth in the legislation of the Southeastern Conference (SEC) and of the National Collegiate Athletic Association (NCAA).

**Student Financial Aid Recipients.** In addition to meeting the general academic requirements of the university, applicants for student financial aid funds must maintain Satisfactory Academic Progress to receive, or to continue to receive, assistance through federal, state and institutional student aid programs. Descriptions of these Satisfactory Academic Progress requirements for distinct classifications of Auburn students are available from the Office of Student Financial Services.

**Veterans.** All VA eligibles (Chapters 30, 31, 32, 35 and 106), in addition to meeting the general academic requirements set forth by the university, must maintain satisfactory academic progress as approved by the State Approving Agency of the State of Alabama, Department of Education. Such standards are as follows: Any undergraduate VA eligible must have a 2.0 GPA after the student has earned 120 hours at Auburn University. This would be checked at each term's end and, the VA benefits of any VA eligible not meeting this requirement would be terminated. Separate standards of progress apply to graduate students as outlined in the Graduate School section.

## Dean's List

The name of every eligible student who meets certain scholastic requirements for a given semester is placed on a list prepared for the dean of the student's college or school. This honor is also noted in the student's permanent record.

To meet Auburn University's requirements for inclusion on the dean's list, the student must be enrolled for 12 credit hours exclusive of any S-U option courses, pass all courses attempted for the semester, have no D or D\* grades that term, and earn a GPA of at least 3.75 (on the 4.00 system). All grades, including those excluded by the grade adjustment/course repeat policy, are used for determining academic honors. The special requirements, applied in addition to the university regulations, are listed as follows:

College of Architecture, Design and Construction: 3.75 average; only if an S-U graded course is required in the student's curriculum may it be included in the 12-hour minimum total.

School of Nursing: 3.75 average, only if S-U graded courses are required in the student's curriculum may they be included in the 12 hour minimum total if and only an S grade is earned in these courses.

## Class Attendance

Students are expected to attend all their scheduled classes. College work requires regular class attendance as well as careful preparation. Specific policies regarding class attendance are the prerogative of individual faculty members. Faculty shall inform each class in writing at the beginning of the course regarding the effect of absences on the determination of grades.

The student is expected to carry out all assigned work and to take examinations at the class period designated by the instructor. Failure to carry out these assignments or to take examinations at the designated times may result in an appropriate reduction in grade, except as provided in paragraph 4 below.

Instructors shall determine the policy regarding grading which they feel is best for the course. This policy shall be presented to the class, in writing, at the beginning of the term and will govern the actions of the instructor in the course.

Arrangement to make up missed major examinations (e.g. hour exams, midterm exams) due to properly authorized excused absences (as defined by the Tiger Cub) shall be initiated by the student within one week from the end of the period of the excused absence. Normally, a make-up exam shall occur within two weeks from the time that the student initiates arrangements for it. Instructors are encouraged to refrain from giving make-up examinations during the last three days prior to the first day of final examinations. The format of make-up exams and opportunities for students to make up work other than major examinations are at the discretion of

the instructor whose make-up policies should be stated in writing at the beginning of the term. Instructors are expected to excuse absences for:

1. Illness of the student or serious illness of a member of the student's immediate family. The instructor may request appropriate verification.
2. The death of a member of the student's immediate family. The instructor may request appropriate verification.
3. Trips for members of the student organizations sponsored by an academic unit, trips for university classes, and trips for participation in intercollegiate athletic events. When feasible, the student must notify the instructor prior to such absences, but in no case more than one week after the absence. Instructors may request formal notification from appropriate university personnel to document the student's participation in such trips.
4. Religious holidays. Students are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays.
5. Subpoena for court appearance.
6. Any other reason the instructor deems appropriate.

If the instructor does not appear within 20 minutes after the designated class hour, it may be assumed the class is canceled.

It is university policy that all classes will meet as scheduled on the last day before and the first day after holiday periods designated by the university.

Unresolved problems regarding class attendance or procedures should be referred to the University Student Academic Grievance Committee.

## Examinations

Examinations are classified as (1) final examinations at the end of each term; (2) special examinations; and (3) other course examinations as determined by the instructor.

Announced tests in undergraduate courses will be administered at a regularly scheduled meeting of the course. Exceptions to this regulation may arise in specialized courses requiring performance or oral tests, and in multiple-sectioned laboratory classes requiring practical laboratory tests. Faculty having sound reasons for scheduling tests at times other than regularly scheduled meeting times are to obtain approval from the department head prior to the beginning of the term, and are to present a written schedule of these changes to the class during the first few days of the term. Rescheduled tests are not to interfere with other scheduled academic endeavors of the students involved, and an appropriate reduction in regularly scheduled class time is to be given to compensate for the rescheduled test period.

**Final Examinations.** A final examination is a desirable means of evaluation in most undergraduate courses. In unusual circumstances, performance tests, term papers, research projects or other forms of evaluation appropriate to the objectives of the course may be substituted for a final examination with the approval of the department head, who will report such action to the dean. Instructors not giving a final examination are to present to the class at the beginning of the term a written description of the forms of evaluation to be used and the means of determining final grades. The professor teaching a 6000-level course or higher shall determine whether a formal final examination is appropriate.

Final examinations are to be given as scheduled in the term examination schedule. Exceptions to this policy require prior approval by the provost. Rescheduled examinations must not interfere with scheduled academic activities of the students involved.

Auburn University students are provided the conditional right to take no more than two (2) final examinations in a single calendar day if the student provides the designated timely notice to the affected faculty members. The deadline for student requests to reschedule final examinations with affected faculty members, under this policy, is the Mid-Semester Day (mid-term in the summer). Students with three or more final examinations scheduled on one calendar day should contact instructors on or before the designated deadline to request rescheduling so that no more than two final examinations fall on any calendar day. Any Auburn student unable to get any instructor(s) to voluntarily move the examination(s) will present this situation to the associate dean of the student's major college and, after verification, that associate dean will contact the faculty member(s) scheduled for the middle exam period(s) of the student's scheduled finals to arrange to reschedule the exam(s). Each student must contact the appropriate associate dean within one week following the mid-semester date, either to report the rescheduled examination(s) or to ask for assistance in rescheduling.

## Student Academic Grievance Policy

The Student Academic Grievance policy, which appears in full in the student handbook, *Tiger Cub*, is designed to resolve academic grievances of students which result from actions of faculty or administrators.

## Graduation

To earn a bachelor's degree, a student must earn a 2.00 GPA on all courses attempted at Auburn, a 2.00 GPA on all transfer courses which apply to degree requirements and a 2.00 GPA on all work in the student's major. These are university requirements. Individual colleges and schools may have higher requirements. Identification of the specific courses counted as courses in the major in an academic program is available in the dean's office.

**Clearing for Graduation.** Seniors should register for UNIV 4AA0 in the term before they graduate in order to arrange for a graduation check through their dean's office; they must also clear deferred grades by the 15th day of the graduation term for courses to be used toward degree requirements. Independent (Asynchronous) Distance Education courses must be completed by mid-term prior to graduation.

Students must be registered at Auburn University in the term in which degree requirements are completed. Students who have completed all course requirements but who lack other requirements (non-thesis final exam, internship, etc.) must register for UNIV4AA0 for the term in which those requirements are completed and/or the student is scheduled to graduate. The undergraduate student who is registered for no credit hours at Auburn University in the term of graduation must register for UNDG4900 in any semester during which the staff or the facilities of the university are used for academic work, for removal of an "Incomplete" grade, or when a student is completing graduation coursework requirements at an Institution other than AU. Undergraduate students who have completed all courses and requirements for graduation should register for UNIV4AA0. **Students who have in a previous term completed all requirements for the degree, upon receipt of a "certificate of completion" in the Office of the Registrar (undergraduate) will be required to register only for UNIV4AA0 in the actual term in which the degree is conferred.** Graduate students should refer to page 108 of this *Bulletin* under "Registration and Graduation Requirements" for graduate students.

A graduation fee is payable to Office of Student Financial Services at the beginning of the term of graduation. A student who is a candidate for a degree in a term in which no credit work is taken is required to register in such term as a pre-requisite to graduation. (For members of the faculty and staff the charge is reduced to \$5.00.) The graduation fee is in addition to this charge. See "Fees and Charges" in this bulletin for details. If a student is in default on any payment due to the university, the diploma and academic record will not be issued until the matter is cleared. Degrees are conferred each term. Commencement exercises are held after fall and spring semesters and summer term. If a student does not plan to attend the exercises, arrangements should be made with the dean or the Office of the Registrar to receive the degree in absentia.

## Graduation Honors

Undergraduate students with a minimum overall grade average of 3.40 are graduated Cum Laude; a 3.60 Magna Cum Laude; and a 3.80 Summa Cum Laude. This distinction of high academic achievement is placed on the student's diploma and on his or her permanent record.

The grade average for graduation honors must be achieved on Auburn University course work. At least 60 hours in residence at Auburn University are required for graduation honors. All grades, including those excluded by the grade adjustment/course repeat policy, are used for determining academic honors. Grades of S or U and non-credit courses are not used in the calculations. Students earning a second baccalaureate degree must earn the minimum overall grade average required for honor distinction on the additional hours completed for the second degree. Those additional hours must total at least 60 credit hours.

Students meeting all of the requirements of the Auburn University Honors College graduate as University Honors Scholars.

## Student Records

### Confidentiality of Student Records

The university recognizes that the maintenance of student information and educational records is necessary and vital to assist the student's education and development and to provide opportunities for university research and policy formulation. The university recognizes its obligation to exercise discretion in recording and disseminating information about students to ensure that their rights of privacy are maintained.

The university will furnish annual notification to students of their right to inspect and review their educational records; the right to request amendment of educational records considered by them to be inaccurate or misleading or that violate privacy or other rights; and of their right to a hearing should the university decline to amend such records. This annual notice will be published in the *Auburn University Bulletin*.

The following guidelines have been developed to ensure the privacy rights of students. For the purposes of this policy statement a student is defined as an individual who has been admitted and has been in attendance in a component unit of the university. Classification as a student in one component unit of the university (e.g., an undergraduate program) does not imply that the person has been accorded the rights outlined below in other component units (i.e., graduate school, professional schools, branch campus).

### Student Access to Records

Auburn University's permanent student education record consists of one or more of the following: the official transcript of grades, competency evaluations, and any narrative evaluations. This is in accordance with guidelines established by the American Association of Collegiate Registrars and Admissions Officers and the State of Alabama policies on Retention of Records.

Students have the right to be provided a list of the type of educational records maintained by the university which are directly related to the student; the right to inspect and review the contents of these records; the right to obtain copies of these records; the right to a response from the university to reasonable requests for explanation and interpretation of these records; the right to an opportunity for a hearing to challenge the content of these records; and if any material or document in the educational record of a student includes information on more than one student, the right to inspect and review only the part of such material or document as relates to the student.

Students do not have access to financial records of their parents; confidential letters and statements of recommendation which were placed in the educational record prior to Jan. 1, 1975, provided such letters or statements were solicited or designated as confidential and are not used for purposes other than those for which they were specifically intended; confidential recommendations, if the student signed a waiver of the right of access, respecting admission, application for employment, and the receipt of an honor or honorary recognition.

Students do not have access to instructional, supervisory or administrative personnel records which are not accessible or revealed to any other individual except a substitute; Campus Security records which are maintained apart from educational records, which are used solely for law enforcement purposes, and which are not disclosed to individuals other than law enforcement officials of the same jurisdiction; employment records except when such employment requires that the person be a student; and the Alumni Office records.

Students do not have access to physical or mental health records created by a physician, psychiatrist, psychologist or other recognized professional acting in his or her capacity or to records created in connection with the treatment of the student under these conditions which are not disclosed to anyone other than individuals providing treatment. A physician or appropriate professional of the student's choice may review these records.

### Procedures for Access

The Office of the Registrar has a complete list of educational records maintained by the university which students may obtain. Students should contact the appropriate office to inspect and review their records. An office may require that a university official be present when a student inspects and reviews his or her educational records. Any questions concerning a student's access to records should be directed to the registrar.

## Amending Educational Records

Students may request that any information contained in their educational records which they consider to be inaccurate, misleading, or in violation of their privacy or other rights be amended or deleted from the records. (A grade or other academic scores may not be amended, except that the accuracy of recording the information may be challenged.)

Students who request that information in their records be amended should first direct their request to the official with primary responsibility for the information on the record. If the matter is not resolved to their satisfaction, students should direct their requests to the official's dean or division head. If the matter is not resolved to their satisfaction, they may request a formal hearing.

### Right to a Formal Hearing and Procedures for Decision

Students may request formal hearings to challenge information contained in their educational records. The hearing will be held in a reasonable time (not to exceed 45 days) and in a reasonable place. Students may be assisted or represented by persons of their choice, including an attorney, at the expense of the student, and shall be afforded a full and fair opportunity to present evidence relevant to the issue(s).

Students or their representative should request the hearing in writing and should specifically identify the information they seek to have amended. The request should be directed to the Office of the Provost/Vice President for Academic Affairs.

The Office of the Provost/Vice President for Academic Affairs will conduct the hearing and render a decision within a reasonable period of time after the conclusion of the hearing and the decision shall be based solely upon the evidence presented at the hearing. The student shall be notified in writing of the reason(s) for the decision and given a summary of the evidence.

If the decision is that the information in the student's educational records is inaccurate, misleading or in violation of his rights and privacy, the statement(s) will be corrected or expunged from the students records.

If the decision is that the information is not inaccurate, misleading, or in violation of the privacy or other rights of the student and that the information or parts thereof are to remain in the student's educational records, the student shall be notified and given the right to enter a statement in the records setting forth any reason for disagreeing with the decision of the Office of the Provost/Vice President for Academic Affairs. This statement shall be maintained in the records as long as the record or contested portion thereof is maintained, and if the contested educational record or contested portion thereof is disclosed by Auburn University to any party, the student's explanation shall also be disclosed to that party.

The Secretary of Education has established a review board to receive complaints regarding violation of student's rights. Students wishing to file a complaint directly to the review board should write to the Family Policy and Regulations Office, Department of Education, Washington, D.C. 20202. Detailed procedures for this complaint procedure are listed under section 99.63 of the regulations issued by the Secretary and will be furnished upon request by the registrar, Auburn University.

This policy is adopted pursuant to the Family Educational Rights and Privacy Act, (34 CFR Part 99), and is not intended to impose any restrictions or grant any rights not specifically required by this Act.

### Release of Directory Information

The university may release directory information without the student's written consent. Directory information consists of student's complete name; local address and associated telephone number; place of birth; parent/spouse name, address and associated telephone number; mailing address and associated telephone number; E-mail address; photographs, video or other electronic image; participation in recognized activities and sports; weight and height of members of athletic teams; dates of attendance; enrollment time status (full or part time); degrees and awards received; and most recent previous educational agency or institution attended.

A student may deny the release of directory information by completing an Address Change/Information restriction request form available in the Office of the Registrar, 100 Mary Martin Hall. Students may also restrict directory information on tigeri.

To deny the release of information regarding participation in recognized activities the student must notify the vice president for Student Affairs and the student's academic dean in writing. To deny the release of

athletic information, the student must notify the director of Athletics in writing. A former student, one who is not in attendance, must contact the appropriate offices to deny the release of information.

### Release of Educational Records

The university will release a student's educational record(s) upon the student's written request. The student must:

1. Specify the records to be disclosed.
2. Include the purpose or purposes of the disclosure.
3. State the party or parties and the address to whom the information is to be disclosed.

The student shall, upon request, receive a copy of the record that is to be disclosed. It is university policy to furnish single copies of a student's record at no charge.

The university may release student's educational records to the following without prior written consent:

1. University officials who have a legitimate educational interest in the records. University officials are defined as teachers, administrative personnel and other employees except personnel of the security or law enforcement unit of Auburn University, and other agents acting on behalf of the university. If university officials are required in the performance of their duties to review the educational records of a student, this will be considered to be a legitimate educational interest. Auburn University has designated the National Student Clearinghouse as a university official.
2. Officials of another school in which the student intends to enroll upon request of the transfer school.
3. Government representatives of the Comptroller General of the United States, the Secretary of Education, the U.S. Commissioner of Education, the Director of the National Institute of Education, the Assistant Secretary for Education, State educational authorities, and State officials to whom such information is specifically required to be reported or disclosed by State law adopted prior to Nov. 19, 1974.
4. Appropriate authorities in connection with financial aid with the understanding that only the necessary records will be released.
5. Organizations conducting studies for, or on behalf of, the university or its agencies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction and student life provided that the studies will not permit the personal identification of students and their parents by individuals other than representatives of the organization and provided that the personally identifiable information furnished will be destroyed when no longer needed for the purposes for which the study was conducted.
6. Accrediting organizations to carry out their accrediting functions.
7. Parents of a dependent student as defined in section 152 of the Internal Revenue Code of 1954. University officials may release educational records to parents on the basis of a written documentation from the parent that the student is a dependent as defined under the Code and there is reasonable notification of the student regarding the request.
8. A court of law to comply with a judicial order or lawfully issued subpoena with the understanding that the student will be notified in advance insofar as possible.
9. Appropriate parties to protect the health and safety of the student or other individuals in emergencies with the understanding that only information essential to the emergency situation will be released, that information will be released only to a party who would be in a position to deal with the emergency, and that the student will be notified insofar as possible of the information released, the purpose for the release, and to whom the information was released.

No personal information on a student will be released without a statement from the university to the party receiving the information that no third party is to have access to such information without the written consent of the student.

Each office with educational records will maintain a record of each request and disclosure of personally identifiable information from the educational records of a student except for information requested in writing by the student, information released to the student or the student's parents, directory information, and information released to university officials and teachers who have a legitimate educational interest in the records. The student may inspect the record of requests, disclosures and the legitimate interests of parties requesting or obtaining information in the appropriate university office.

## Special Academic Opportunities

### The University Honors College

The Honors College at Auburn University offers a select cohort of high-ability students a unique academic experience designed to provide many of the advantages of a small college in addition to the myriad opportunities available at a large and diverse research university. Students in the Honors College receive a more intensive and innovative education than is available in the regular curriculum. These advantages include small class sizes, specialized advising, and regular exposure to diverse social and co-curricular programs. Honors students have close personal contacts with their teachers and with other students, providing a sense of community and identity within the larger university context.

**Eligibility.** Entering freshmen as well as currently enrolled students who demonstrate the potential for outstanding academic achievement are eligible for admission into the Honors College. Selection of incoming freshmen is based on ACT/SAT scores (29/1290 minimum), high school GPA (3.75 minimum), and a record of leadership and service. Students enrolled at Auburn who have a 3.4 unadjusted GPA may also be considered for admission.

**Curriculum.** The Honors Curriculum has two components, the Honors College Courses and the Honors Apogee Experience.

**The Honors College Courses** were developed to provide Honors students an opportunity for broad enriching educational experiences primarily based on Auburn's Core Curriculum. To complete the Honors College course requirements, students are required to:

1. Maintain a minimum unadjusted 3.2 GPA
2. Complete a minimum of 18 Honors hours in the following areas:
  - a. Honors University Core Courses
  - b. Honors Interdisciplinary Symposia
  - c. Honors Departmental Courses
  - d. Honors Contracted Courses
3. Complete a minimum of 4 hours of Honors Participation Courses.

**The Honors Apogee Experience** offers Honors students the choice of completing the Thesis/Project Option or the Seminar Option. The Seminar Option requires the completion of two 3-hour, 3000-level Honors Seminars. The Thesis/Project Option may be intra-disciplinary or interdisciplinary. It may be a traditional Honors thesis or a conference style presentation, a portfolio, a performance, approved service learning project, a project based on a substantial study abroad experience, or an identifiable part of a team (senior design) project. Students selecting the Thesis/Project Option are required to complete 6 hours of Special Topics/Reading/Thesis/Project/Contract courses under the direction of a faculty member in the student's major and write a thesis or give a podium presentation. Completing an undergraduate thesis is a significant achievement that is noted by admission committees for graduate and professional schools.

**Thesis/Project Option.** Honors students must:

1. Maintain an unadjusted 3.2 overall GPA
2. Complete at least 3 hours in the Honors Special Topics/Thesis/Readings/ Contract course
3. Complete at least 3 hours in the Honors Thesis/Project course.

**Seminar Option.** Honors students must:

1. Maintain an unadjusted 3.2 overall GPA
2. Complete at least 6 hours in the 3000-level Honors Seminars.

**Honors Distinctions.** After completing the requirements of the Honors College Curriculum, students graduate with a special designation that is noted on their diploma and transcript.

- To graduate as an Honors Scholar students must complete the Honors College Course requirements, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.2 – OR – complete the Honors Apogee Experience (Thesis/Project Option), 2 hours of Honors Participation Courses, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.2.
- To graduate as a University Honors Scholar students must complete all requirements of the Honors College Courses and Honors Apogee Experience, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.4.
- To graduate as a University Honors Scholar with Distinction students must complete all requirements of the Honors College Courses and Honors Apogee Experience, the

requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.6.

- To graduate as a University Honors Scholar with Highest Distinction students must complete all requirements of the Honors College Courses and Honors Apogee Experience, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.8.

### Cooperative Education (Co-Op) Program

The Cooperative Education program provides opportunities for students to alternate terms of academic study with experience in industry, business and government agencies.

Coordination of study and work combines theory and practice. As a result students find increased meaning in and motivation for their studies. This experience helps to develop a sense of responsibility, judgment, and maturity. Students also benefit financially, since they are paid for their work.

In four-year undergraduate curricula, the Cooperative Education Program is a five-year plan. A student must complete at least two terms of the freshman year with an above-average scholastic record before being placed with an employer. Cooperative Education is offered in all curricula of the colleges of Agriculture; Architecture, Design and Construction; Business; Education; Engineering; Human Sciences; Liberal Arts; Sciences and Mathematics and in all curricula of the School of Forestry and Wildlife Sciences.

A graduate Co-op Program is arranged for certain students in the master's and doctoral programs where employers can provide professional experiences which relate directly to the student's specialized field of study.

For additional information, contact: Cooperative Education (Co-Op) Program, 104 Ramsay Hall, Auburn, AL, 36849-5123. Telephone: (334) 844-5410. Web site: [www.auburn.edu/co-op](http://www.auburn.edu/co-op).

### Independent Learning

The Independent Learning program provides asynchronous credit and non-credit instruction, designed primarily for persons unable to attend college on a regular basis. Courses are also open to enrolled students with their dean's permission. The credit courses parallel those given in the university, award college credit, and are taught by instructors approved by the relevant academic department. Any person is eligible for enrollment, although enrollment is not equivalent to admission to the university.

Courses are available from a variety of disciplines. They use a number of delivery modes - print, cassettes, CDROM, and computer. Upon registration the student receives course instructions. The student will be required to do assigned reading, submit written assignments, and possibly do supplemental work. A supervised final examination is given upon completion of all course assignments. Any on-campus student trying to satisfy graduation requirements by independent learning must complete all course work and final examinations by mid-term prior to graduation.

Persons typically enroll in an independent learning course (1) when job or family responsibilities prevent on-campus study; (2) when classroom schedules conflict or a course is unavailable during the term it is needed; (3) when a person has been away from formal study for some time and wishes to get back in stride; (4) when a person is away from campus during the summer or while participating in a cooperative education program.

Fees for Independent Learning courses are additional and charged separately from regular university tuition. Fees for independent learning courses are listed under Fees and Charges. Application forms and a course bulletin are available from Distance Learning, Petrie Annex, Auburn, AL 36849, Telephone: (334) 844-5103.

### International Academic Opportunities

Access to international opportunities is provided throughout many colleges, schools, departments and other student support units. However there are several units on campus that provide specialized services for English language study, study abroad and international students attending Auburn University.

### International Internships, Academic/Curricular Practical Training

Academic internship experience both within the US and abroad are highly encouraged for all disciplines and all AU students. Students interested in participating in such experiences should check with their academic units for specific requirements. For international students practical training is available UNIV 4920 Curricula Practical Training depending on US immigration status as Curricular Practical Training (F) or Academic Training (J). Students may also do academic internships abroad under Auburn Abroad. For further details on Auburn Abroad or CPT/AT students should check with the Office of International Programs.

### English as a Second Language (ESL) Program

The ESL Program operates under the assistant provost for International Programs and offers English language instruction to international students and visiting scholars. It provides courses in oral and written proficiency to support international students enrolled in undergraduate and graduate degree programs, a course in classroom communication skills for international graduate teaching assistants, and an Intensive English program involving 25 hours of instruction per week in listening, speaking, reading, writing, grammar, pronunciation, and TOEFL skills. It also operates an International Student English Center that develops international students' and scholars' English skills through tutoring and workshop at no charge. For additional information, contact: 246 Biggin, (334) 844-2122; email: [raffadc@auburn.edu](mailto:raffadc@auburn.edu); or visit [www.auburn.edu/esl](http://www.auburn.edu/esl).

### Office of International Programs

The Office of International Programs (OIP) is a unit of the AU Division of Academic Affairs. Its mission is to provide leadership and relevant administrative support to academic units, faculty, students, and staff for the effective promotion and efficient adoption of Auburn University's internationalization goals. The International Students and Scholar Service component of the OIP assists foreign national students, visiting scholars, and university employees in achieving their academic objectives. The Auburn Abroad unit of the OIP promotes and facilitates student and faculty participation in an international education experience through programs outside of the United States. For additional information, contact: Office of International Program, 227 Foy Hall; 334-844-5001; [intleedu@auburn.edu](mailto:intleedu@auburn.edu); or [www.auburn.edu.international](http://www.auburn.edu.international). Go to the section on International Student Services for additional information.

### OIP International Student and Scholar Services

The ISSS unit of the OIP provides assistance and guidance to foreign national students, visiting scholars, and University employees regarding US immigration requirements and Auburn policies for studying and/or working at Auburn University. Documentation of eligibility for study in the United States, work authorizations, and other government documents required by international students, scholars, and employees are issued and monitored by the ISSS. Joint orientation programs are conducted in cooperation with the Office of International Student Life and other units of the University to assist students, visitors, and employees adapt to the AU community. Currently, the University has over 1200 international students, visiting scholars, and employees from over 90 nations.

### OIP Auburn Abroad Experience

The Office of International Programs (OIP) Auburn Abroad unit seeks to develop, expand and facilitate credit bearing study, internship and exchange opportunities outside of the United States. Each year more than 900 Auburn University students participate in the Auburn Abroad experience. More than 90 percent of these students go on faculty led programs with the rest going on other university or provider programs. With some planning, credit earned through the Auburn Abroad experience can be fully integrated with Auburn University degrees and applied to core, major, minor, and elective courses. Auburn Abroad experiences vary considerably in length and are available for all semesters including summer. Each college and school within Auburn University has programs abroad tailored to their students' needs. The Auburn Abroad staff conducts Fall and Spring Study Abroad and Passport Fairs, and over 100 other information sessions each year to inform students about international opportunities. Both undergraduate and graduate students can participate in the Auburn Abroad Experience. Requirements for acceptance into the Auburn Abroad Experience include the following:

(1) a minimum institutional cumulative GPA of 2.25 for undergraduates and 3.0 for graduate students, (2) the student must attain the age of 19 prior to the start date of program, (3) the student's record must show no pending Auburn University judicial actions and the student must be in good academic standing in their college or school. Faculty directors for programs abroad may also have additional requirements. Although some programs require prior knowledge of a foreign language, there are many that do not.

Students considering any type of credit bearing experience abroad should start their Auburn Abroad Experience by attending either (1) a weekly, thirty minute general orientation session conducted by the Auburn Abroad Staff or (2) by attending a faculty led program orientation session. The Auburn Abroad Experience sessions are held every semester. Sessions are conducted on Thursdays at 3pm and repeated on Fridays at 11am in the Auburn Abroad conference room, 242 Foy Hall. These sessions include an introduction to the on-line Auburn Abroad application process, hints on searching for faculty led and other types of programs abroad, the credit approval process, transcript information, information on a variety of funding resources, and paperwork needed for scholarship, PACT and other benefit programs. Students interested in faculty led programs must contact the faculty director(s) for the dates of their orientation sessions. After students attend a study abroad orientation session, they are ready to start their on-line study abroad application, found at [www.auburn.edu/studyabroad](http://www.auburn.edu/studyabroad) on the Program Search link. They need to complete this on-line application, submit a completed Course Approval Form, and respond to any Auburn Abroad Unit emails requesting additional information. The Course Approval Form requires special attention and students must obtain all required signatures including department chair and dean. The on-line application and requested materials must be completed and submitted by the deadline dates listed on [www.auburn.edu/studyabroad](http://www.auburn.edu/studyabroad) to be considered. Current deadline dates are: Summer Programs: March 15; Fall Programs - April 30 and Spring Programs: October 15.

The OIP staff monitors students' on-line applications and will enroll individual students in one of the following Auburn Abroad Full Time Placeholder courses: (UNIV 2940/2945, UNIV 4940/4945, UNIV5949/5945 or UNIV7940/7945). These courses will be listed on the students' transcripts while they are abroad. Once students complete their course work abroad and the Auburn Abroad staff receives and processes their transcript through the registrar, then the actual, approved courses listed on their Course Approval Form will be listed on the students' transcripts as Auburn University Credit. These processes and dates are subject to change and it is the individual student's responsibility to attend orientation sessions and check the website to insure that they are in compliance. In addition to receiving credit for an abroad experience, students enrolled in Auburn Abroad are provided opportunities to attend pre-departure sessions and will be enrolled in the Auburn University International Travel Assistance plan. Students will receive a MEDEX/CMI enrollment card and material to read concerning the assistance plan, health and safety issues. The Auburn Abroad staff, along with the Department of Safety and Security routinely monitor global situations and will provide assistance to students in distress abroad. Returning students are encouraged to become Global Tiger Peer Advisors when they return, share their "Global Tiger Tale" on the Auburn Abroad website and submit photos from their experience abroad for the annual student photo contest. For additional information please visit the OIP Auburn Abroad Experience Website at [www.auburn.edu/studyabroad](http://www.auburn.edu/studyabroad) and/or send an email to: [auab@auburn.edu](mailto:auab@auburn.edu).

### Service Learning and Student Engagement

Auburn University has a long history of service to the community as part of its land-grant mission of outreach. The value of public service is also emphasized in the Auburn Creed. Service engagement is also one of Auburn's strategic objectives for enhancing students' academic experience, and it is required for many courses of study. Thus, students are expected to engage in organized outreach activities over their academic career at Auburn, through a variety of curricular, co-curricular, and extracurricular services experiences.

Service engagement enhances academic study and provides opportunities for personal and professional growth, while making a difference in the surrounding community. Engagement also builds appreciation for collaboration and cooperation by working with

community partners in a service environment. Students may participate in public service activities through formal service-learning courses and internships that have been established in the university curriculum. Many majors require service as a component of disciplinary study. Students can also fulfill their personal service interests through student organizations, volunteerism in campus service projects, or direct engagement with community agencies.

Students can access information on service learning and service opportunities through AUBURNSERVES, an on-line network hosted by the university's engagement office, the Office of Public Service. AUBURNSERVES is a collaboration of campus partners including University Outreach, Access and Community Initiatives, Extension, the Biggio Center, Student Affairs' IMPACT program, Learning Communities, and academic programs in the schools and colleges. AUBURN SERVES offers students and their faculty mentors contact information for a wide range of organized service options available through more than 125 community partners statewide. The network also provides online resources for managing and documenting service projects.

For more information on student engagement and service learning at Auburn University, and to access the AUBURN SERVES network, visit [www.auburnserves.com](http://www.auburnserves.com), or contact the Office of Public Service at 334-844-5117.

### National Honor Societies

The following members of the Association of College Honor Societies have established chapters at Auburn: Alpha Delta Mu (Social Work), Alpha Epsilon (Biosystems Engineering), Alpha Epsilon Delta (Pre-Medicine), Alpha Kappa Delta (Sociology), Alpha Lambda Delta (Freshman Scholarship), Alpha Phi Sigma (Criminal Justice), Alpha Pi Mu (Industrial Engineering), Alpha Sigma Mu (Metallurgical & Materials Engineering), Beta Alpha Psi (Accounting), Beta Gamma Sigma (Business), Cardinal Key (Junior Leadership), Chi Epsilon (Civil Engineering), Eta Kappa Nu (Electrical and Computer Engineering), Kappa Delta Pi (Education), Iota Delta Sigma (Counselor Education), Lambda Sigma (Sophomore Leadership), Mortar Board (Student Leadership), Omega Chi Epsilon (Chemical Engineering), Omicron Delta Kappa (Student Leadership), Kappa Omicron Nu (Human Sciences), Phi Alpha Theta (History), Phi Beta Kappa (Arts and Sciences), Phi Eta Sigma (Freshman Scholarship), Phi Kappa Phi (Senior Scholarship), Phi Lambda Sigma (Pharmacy Leadership), Phi Sigma Tau (Philosophy), Pi Delta Phi (French), Pi Lambda Sigma (Pre-Law), Pi Sigma Alpha (Political Science), Pi Tau Sigma (Mechanical Engineering), Psi Chi (Psychology), Rho Chi (Pharmacy), Sigma Delta Pi (Spanish), Sigma Gamma Tau (Aerospace Engineering), Sigma Pi Sigma (Physics), Sigma Tau Delta (English), Tau Beta Pi (Engineering), Tau Sigma Delta (Architecture & Allied Arts), Xi Sigma Pi (Forestry).

### National Recognition Societies

The following national societies have chapters established at Auburn: Alpha Epsilon Lambda (Graduate), Alpha Eta Rho (Aviation), Alpha Kappa Psi (Business), Alpha Phi Omega (Service), Alpha Psi Omega (Theatre), Angel Flight (Air Force ROTC Auxiliary), Arnold Air Society (Air Force ROTC), Beta Beta Beta (Biology), Block and Bridle (Animal Husbandry), Delta Nu Alpha (Transportation), Delta Sigma Pi (Commerce & Business Administration), Eta Sigma Delta (Hotel and Restaurant Management), Gamma Sigma Delta (Agriculture), Golden Key National Honor Society, Kappa Kappa Psi (Band), Kappa Omicron Nu (Human Sciences), Kappa Psi (Pharmacy), Lambda Tau (Medical Technology), National Student Speech, Language, Hearing Association (Communication Disorders), Omicron Delta Epsilon (Economics), Omicron Kappa Pi (Architecture), Order of Omega (Greek Leadership), Phi Delta Kappa (Education), Phi Delta Chi (Pharmacy), Phi Lambda Sigma (Pharmacy), Phi Lambda Upsilon (Chemistry), Phi Mu Alpha (Music), Phi Psi (Textiles), Phi Zeta (Veterinary Medicine), Pi Alpha Xi (Horticulture), Pi Kappa Lambda (Music), Pi Mu Epsilon (Mathematics), Pi Sigma Epsilon (Marketing), Scabbard and Blade (Military), Semper Fidelis (Marine Corps ROTC), Sigma Alpha Iota (Music), Sigma Delta Chi (Journalism), Sigma Gamma Epsilon (Earth Sciences), Sigma Lambda Chi (Building Construction), Sigma Theta Tau (Nursing), Sigma Xi (Scientific Research), Society for Technical Communication (Liberal Arts), Steerage (Navy ROTC), Tau Beta Sigma (Band), Upsilon Pi Epsilon (Computer Science).



# Financial Information

Auburn University's fees have remained somewhat lower than those charged by similar institutions in the Southeast and in other sections of the country. As institutional costs have risen, the Board of Trustees has authorized small increases in fees from time to time. Every effort is made, however, to hold fees and charges at a minimum.

The following fees and charges are in effect at this time. However, since the catalog must be published well in advance of the next school year, it is not always possible to anticipate changes. Thus the fee schedule may have to be revised. Every effort will be made to publicize changes as far in advance as possible.

## Basic Charges (revised May 2011)

The following is a schedule of the tuition structure effective Fall, 2011. If you need more details, please call the Student Financial Services Office at (334) 844-4634.

Tuition and Registration	Resident	Non-Resident
Credit Hour Tuition - Undergraduate to 12 hours* (a)	304.00	912.00
Credit Hour Tuition - Graduate/Professional to 9 hours* (a)	405.00	1,215.00
Registration Fee (a)	501.00	501.00
Proration Fee	200.00	200.00
<b>Non-Credit/Specialty Fees</b>		
Auburn Abroad Fee** (b)	501.00	501.00
Auditing Fee - Undergraduate per course (c)	304.00	912.00
Auditing Fee - Graduate/Professional per course (c)	405.00	1,215.00
Clearing for Graduation** (d)	501.00	501.00
College of Veterinary Medicine Clinical Rotation Fee	540.00	540.00
Continuous Enrollment Fee - Graduate	450.00	450.00
GRA/GTA Enrollment Fee	307.00	307.00
Horticulture	307.00	307.00
International Student Fee	130.00	130.00
Music Fee (full hour lessons) (e)	246.00	246.00
Music Fee (half-hour lessons) (e)	163.00	163.00
<b>Professional Fees, Program Fees, Differential Tuition***</b>		
College of Architecture, Design, & Construction (per semester)	2,160.00	2,160.00
College of Business FR/SO (per semester)	260.00	260.00
College of Business FR/SO Summer (per semester)	75.00	75.00
College of Business JR/SR (per semester)	560.00	560.00
College of Business JR/SR Summer (per semester)	150.00	150.00
College of Business Graduate - per credit hour	200.00	200.00
College of Veterinary Medicine (per semester)	4,000.00	8,000.00
Honors College FR (per semester)	250.00	250.00
School of Nursing - per credit hour	200.00	200.00
School of Pharmacy (per semester)	5,283.00	5,283.00

\* Additional credit hour tuition eliminated

\*\* Same as Registration fee

\*\*\* Professional fees, program fees, differential tuition in addition to regular credit hour tuition. Graduate students' tuition and registration fee are waived, provided they are on a one-quarter time or greater appointment and are being paid according to the approved salary structure as a Graduate Research or Teaching Assistant. Their appointment date must be effective as of the eighth class day of the spring semester, the fifth class day of summer semester, or September 1 for the fall semester.

Professional and Program fees are not waived.

Graduate students that have their tuition and registration fee waived pay the GRA/GTA enrollment fee each semester.

a.) The university tuition and registration fee is used to meet part of the cost of instruction, physical training and development, laboratory materials and supplies for student use, maintenance, operation and expansion of the physical plant, Library and Student Activities. The Student Activities portion of the fee supports such activities as intercollegiate athletics, exhibits, GLOMERATA, intramural sports, PLAINSMAN, religious life, social affairs, student government, student union activities and operations, TIGER CUB, and WEGE Radio Station. This fee includes \$0.25 held in reserve to cover damage to university property by students. The Registration Fee is waived for full-time faculty and staff. All students except faculty and staff are eligible to participate in Student Activities.

b.) Students participating in the Study Abroad/Exchange Program will pay the Auburn Abroad Fee, and any course work resulting in AU credit or grades will be assessed in accordance with the university fee structure.

c.) Not charged to faculty and staff.

d.) A student who is a candidate for a degree in a term in which no credit work is taken is required to register in such term as a pre-requisite to graduation. (For members of the faculty and staff the charge shall be reduced to \$5.00.) Graduation fee is to be paid in addition to this charge.

e.) This additional music fee is to be paid for each Performance Course of individual instruction. Instruction is available in either half-hour or hour lessons.

## Other Fees and Charges

**Late Payment Charges.** All students, regardless of classification, must clear tuition, fees and other university obligations by the deadlines set by the university, or be liable for late payment charges. Late payment charges will be assessed following each due date at 1.5 percent of the unpaid balance.

Returned Check Charge ..... 25.00

Note: All checks accepted subject to collection.

**Application Fee.** An application fee must accompany all applications for admission and is not refundable nor applicable to registration fees.

(See "Undergraduate Admissions" section under Academic Policies.) An application fee must accompany the application for housing and is not refundable or applicable to housing fees. (See "Housing and Residence Life" section under Student Services.)

### Fees Related to Graduation

Graduation Fee (each degree).....	20.00
Duplicate Diploma Fee .....	20.00
Thesis and Dissertation Binding Fee (per copy) .....	21.00
Doctoral Dissertation Microfilming Fee .....	70.00

**Internship Courses.** Effective fall 2007, students registering for internship courses from one to nine hours will be assessed at the per credit hour rate and pay tuition only. No registration fee will be assessed **provided that the student is not enrolled in any other courses and is taking an internship course only.**

Rent for Student Housing, (see "Housing and Residence Life")

Meal Plans (See "Dining Services" under Student Services.)

### Special Service Fees

Cooperative Education Program .....	45.00
Cooperative Education ID Fee (athletic tickets) .....	96.00
Cooperative Education Diploma Fee .....	15.00

## Resignations and Refunds

Students officially resigning prior to the start of a term will not be held liable for fees (other than non-refundable fees). Students resigning during the first 15 class days of the fall and spring semesters and the first 5 class days of the summer term and/or session will be charged a \$100 Resignation Fee.

The liability for fees will not be excused for resignations effective after the 15th class day of fall and spring semesters and the 5th class day of summer term and/or session except in cases of resignation caused by personal illness (physicians statement required) or call into military service (copy of activation orders required, excluding temporary training assignments). A pro-rata reduction will be made in cases of personal illness and a full reduction for military service activation. Students having made prior payment will be refunded the amount paid less their liability after the resignation. Students suspended for disciplinary reasons are not eligible for refunds or reductions in liability. Resigning students receiving refunds will first have their refunds applied to any outstanding obligations and to any scholarship, grant or loan which they had received for the term.

Students reducing course loads on or prior to the 15th day of classes of fall and spring semesters and the 5th class day of summer term and/or session may be eligible for a partial refund or reduction in liability of tuition and fees. To be eligible, the adjustment must be completed on or before the 15th day of classes of fall and spring semesters and the 5th class day of summer term and/or session. In such cases, fees will be reassessed based on the adjusted schedule.

Students who believe that extenuating circumstances warrant an exception to the refund policy must submit an appeal in writing to the Director, Office of Student Financial Services, Martin Hall. Acceptance or rejection of the appeal will be mailed within 10 business days.

Any Federal Title IV financial aid recipients who resign will be liable for any unearned funds received as determined by the Federal Return of Funds Policy. These amounts will be charged back to the student's university account.

## Payment of University Obligations

The Auburn University Billing/Receivable System will bill students the majority of their charges due AU. Among the charges included within this system are those for tuition/fees, Tiger Club, housing and parking. Other charges will be included in the system as deemed appropriate. Any questions concerning a charge should be directed to the department responsible for that particular charge.

AU Billing/Receivable statements will be processed at approximate monthly intervals corresponding to the university's semester schedule. The first installment for tuition and fees will be billed and due prior to the beginning of each semester. The final installment will be billed approximately one week prior to the beginning of the semester and due on the bill due date. Additional charges will be billed as incurred. All charges appearing on a billing statement must be cleared by the due date for that statement or late payment charges will be assessed. Late

payment charges may be waived for tuition resulting from university registration and housing charges when financial aid is processed through the university and evidence of such aid is recorded on the statement.

AU Billing/Receivable statements will be delivered via E-Bill (the university's electronic billing system.) Students are notified through TigerMail when a new billing statement has been processed, and any other Authorized Users added by the students, through Tigeri, are sent e-mails to their specified e-mail addresses.

Students are expected to meet all financial obligations when they fall due. The university reserves the right to deny admission, dis-enroll, prevent participation in graduation and withhold transcripts, cap, gown and diploma of any student who fails to meet promptly their financial obligations to the university. It is each student's responsibility to be informed of all payment due dates, deadlines, and other requirements by referring to official sources of university information such as this catalog, official calendar of events, announcements printed in the Plainsman, or that disseminated by other means from time to time. Students owing charges for prior terms will not be allowed to register for future terms until all charges are paid.

University registration or other requests for class assignment create a liability for the payment of tuition and fees resulting from assigned classes. Such liability can only be excused when students withdraw or resign in accordance with university procedures.

**Checks:** Checks given in payment of any university obligation are accepted subject to final collection. If the bank on which the check is drawn does not honor the demand for payment and returns the check unpaid, the student will pay a returned check fee of \$25 and any applicable late payment charges. If payment is not cleared promptly, the student's registration may be canceled. The university has the right but not the obligation to redeposit any insufficient check without notice to the student or maker.

Collection costs or charges along with all attorney fees necessary for the collection of any debt to the university will be charged to and paid by the debtor.

**Veterans:** All veterans (Chapters 30 and 32), reservists and guard members (Chapter 106) and veterans' dependents (Chapter 35) are responsible for paying fees and charges on the same basis as other students. Veterans under the Vocational Rehabilitation program (Chapter 31) and students receiving the Alabama GI Bill should make arrangements for their tuition, fees and books to be paid prior to their first payment due date.

**Foreign Students Under Contract:** A special administration management/program fee will be negotiated for foreign students who come to the university under a contractual arrangement that requires special administrative and programming arrangements beyond those of the regular academic program of the university.

## Alabama and Non-Alabama Student Policy

Students enrolled prior to June 1, 1996 should consult with the Office of the Registrar for changes in residency status.

## Policy for Students Enrolled for the First Time June 1, 1996, and Thereafter

For the purpose of assessing fees, applicants shall be classified as Alabama or non-Alabama students. Non-Alabama students are required to pay a non-resident tuition fee.

An Alabama student is a person which shall be a citizen of the United States, or a resident alien, and who shall have resided and had habitation, home and permanent abode in the State of Alabama for at least 12 months immediately preceding current registration. In applying this regulation, "applicant" shall mean a person applying for admission to the institution, if applicant is married or 19 years of age, and financially independent. Otherwise, it shall mean parents, parent or legal guardian of his/her person. If the parents are divorced, residence will be determined by the residency of the parent to whom the court has granted custody.

A person who establishes a guardianship for purpose of avoiding non-Alabama fees will be subject to non-resident tuition.

No person who moves to Alabama for the primary purpose of attending college shall be considered to have demonstrated intent to establish domicile in the State of Alabama, and will generally not be considered eligible for classification as a resident student. Clear and convincing evidence to the contrary must be presented to overcome this presumption.

In determining Alabama student status for purposes of assessing fees, the burden of proof is on the applicant.

## Additional Persons Eligible for Resident Tuition

1. Military personnel on active duty stationed in Alabama, their spouses and dependent children (as defined by Internal Revenue Codes), as well as military personnel whose "Home of Record" is Alabama, who have continuously filed Alabama income tax returns for the duration of their service, and their spouses and dependent children.
2. Non-resident undergraduate students who have been awarded full academic, athletic or other similar performance tuition scholarships by Auburn University and graduate students appointed on assistantships of at least 1/4-time.
3. Full-time employees of a state of Alabama agency or institution, their spouses and dependent children.
4. Spouse and dependent children of a non-resident, provided the nonresident has been employed in Alabama full-time for at least 12 consecutive months prior to registration, has filed an Alabama Income Tax Return for the tax year prior to the year in which the student is admitted, and did not claim a credit on the Alabama return for income taxes paid to another state.
5. Non-resident students with junior or senior standing selected for programs included in the Southern Regional Education Board Academic Common Market, provided the student does not change to another program not included, is enrolled in 12 hours per term and earns a 3.0 each term. In such cases of change, reduction in course load or failure to meet the GPA, the student will be classified as a non-resident for tuition purposes. See section on Academic Common Market for application process.
6. Persons whose spouses by legal marriage are bona fide Alabama residents.
7. Spouses and dependent children of persons who establish domicile within the State of Alabama, provided that the person who establishes domicile is employed full-time in a permanent position in Alabama.
8. Non-resident persons enrolled in programs of Auburn University not funded by tax revenues of the state of Alabama.
9. Students enrolled in the College of Veterinary Medicine professional DVM program admitted under contract with the Southern Regional Education Board.

## Initial Determination of Eligibility

To be initially classified as eligible for resident tuition, students must demonstrate that they or their parent, guardian or spouse qualify for one of the eligibility categories prior to the first day of class. A signed statement is required that qualification for the eligibility category claimed has been met prior to registration.

## Transfer Students

In the case of new transfer students, classification as a resident by the previous institution does not guarantee that status at Auburn University. Enrollment by a non-resident student at a college or university within the state of Alabama for more than 9 hours in any term during the period when the student is attempting to establish residency will normally exclude that student from consideration. That student will be considered to be in the state for the purpose of education.

## Change in Eligibility for Resident Tuition

Students determined to be eligible for resident tuition will maintain that eligibility upon re-enrollment within 12 months of their most recent enrollment, unless there is evidence that the student subsequently has abandoned resident status (e.g., registering to vote in another state.) Students failing to re-enroll within 12 months must establish eligibility upon re-enrollment.

Students initially classified as ineligible for resident tuition will retain that classification for tuition purposes until they provide clear and convincing evidence that they have established permanent domicile in Alabama. The burden of proof of change in eligibility rests on those requesting change. Evidence relevant to an initial determination of eligibility is also relevant to establishing a change in eligibility.

Non-resident students who carry an academic load considered normal (10 or more hours per term) for students at Auburn University will be presumed to be in the State of Alabama primarily for the purpose of gaining an education and, thus, have not demonstrated the intent to establish a true domicile in Alabama. Clear and convincing proof may overcome this presumption, but again, the burden of proof rests on those requesting change in eligibility. Any change in resident tuition eligibility occurring during an academic term will not become effective until the registration for the succeeding term.

## Financial Information

The following types of evidence may contain data to support the establishment of twelve 12-month residency in the State of Alabama. In all cases, the person must be at least 19 years of age or married, and financially independent. Otherwise, the person's residency will be based on that of the parent or guardian.

1. Ownership of rental or residential property in the State of Alabama and continuous occupation thereof on an extended term of not less than twelve consecutive months.
2. Full-time permanent employment in the State of Alabama.
3. Possession of State of Alabama License(s) required to do business or practice a profession in Alabama.
4. Legal marriage to a bona fide Alabama resident.
5. Registration to vote in the State of Alabama.
6. Filing of Alabama resident income tax returns.
7. Holding a current Alabama drivers license.
8. Registration of vehicle in Alabama, and payment of property taxes, thereon.
9. Evidence of local banking activity within the State of Alabama for 12 consecutive months prior to making application for residency change.

The Office of the Registrar at Auburn University and the Office of the Registrar at AUM shall have the responsibility for determining whether a student shall be classified as an Alabama or non-Alabama student. The decision of the Office of the Registrar shall be subject to review by the Residency Committee (at Auburn) or the Chancellor (at AUM) or the designated representative of each, upon written request of the applicant.

### Procedures for Appeal of Residency Decision

The following outlines the process by which students may appeal the initial decision of residency for tuition purposes by the Office of the Registrar.

Students must submit a letter to the Office of the Registrar, addressed to the Residency Committee, requesting residency reclassification and outlining the circumstances that have changed since the initial residency decision.

Along with the letter, students should submit whatever evidence they feel is relevant to their appeal. Examples of the types of evidence that may contain information relevant to reclassification can be found in the Auburn University Residency Guidelines in the this bulletin.

The letter of request for appeal and the supporting evidence must be received no later than two business days before the committee meets. The Office of the Registrar will prepare all materials for presentation to the committee regarding each individual appeal.

The committee will vote on the merits of each appeal and as it relates to the written guidelines as adopted by the state of Alabama and the Auburn University Board of Trustees.

The Residency Appeals Committee Chair will send a letter to students informing them of the final decision and reason.

All proceedings and votes will be recorded and filed in the Office of the Registrar.

The students may submit further appeals to the senior associate provost if desired.

### Academic Common Market

The Academic Common Market is an agreement among 14 Southern Regional Education Board states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia). According to the agreement, if one of these states does not offer a particular degree program in its state-supported universities, a resident of that state may enroll in that degree program at a university in one of the other states without having to pay out-of-state tuition. Each state specifies which programs offered at out of-state universities it will allow its residents to attend as common market students. The states of Florida, North Carolina and Texas do not participate in the Academic Common Market. To be eligible for consideration for the Common Market at Auburn, students must be enrolled in degree programs agreed to by their home states, be classified as a junior or senior at Auburn, have a 3.0 GPA for all college-level course work attempted, including transfer work, and be certified as a resident of one of the other states. Auburn students who enter as common market students and do not complete 12 hours per term, do not maintain a 3.0 or who later change to a degree program not certified as eligible by their home states, lose the waiver of out-of-state tuition. Since out-of-state residence is a requirement for being a common market student, students may not use the time spent as common market students to qualify them

as residents of Alabama. For additional information about the Academic Common Market, contact the Provost Office, 129 Quad Center, (334) 844-4900. Application materials are due by March 15 for the following year. If space remains, applications for spring semester received by October 15 will be considered.

### Financial Aid

The Office of Student Financial Services at Auburn University provides financial assistance to students who need aid to attend the university. Students seeking assistance are required to file an application for Federal Student Financial Aid annually. Applications for aid should be completed in January or February of the year prior to the academic year in which the student will need assistance. Application materials and a brochure describing available aid programs may be obtained from the Office of Student Financial Services, 203 Martin Hall, and on the Web at [www.auburn.edu/finaid](http://www.auburn.edu/finaid).

Financial aid includes scholarships, grants, loans and part-time employment.

**Grants.** Federal Pell Grants are provided to undergraduate students who demonstrate exceptional need. Federal Supplemental Educational Opportunity Grants are available, in limited number, to undergraduates with the greatest financial need.

**Loans.** Federal Perkins Loans, Federal Subsidized and Unsubsidized Loans, and Institutional Loans provide long-term, low interest loans to students. Some loans require demonstrated financial need. The Health Professions Loan Program makes available long-term loans for students in Pharmacy and Veterinary Medicine.

**Work.** The Federal Work-Study Program provides part-time employment for students who demonstrate financial need.

**Graduate Assistantships.** Graduate students may be eligible for teaching and research assistantships and traineeships. Information is available from the department of the student's major field.

### Scholarships

Auburn University recognizes the importance of a quality education and is dedicated to helping students find a way to achieve their higher education goals. Auburn annually awards Freshman, Transfer, General, and Departmental Scholarships. Additional funds from external sources are applied directly to the students' university billing account. Unless a scholarship specifically states that it is automatically awarded, scholarships are awarded competitively, and consideration does not guarantee a scholarship will be awarded. To ensure maximum consideration, it is imperative that students are knowledgeable of the specific requirements and deadlines associated with all scholarships awarded. For more information, please visit [auburn.edu/scholarship](http://auburn.edu/scholarship).

### Minimum Requirements

December 1 is the Freshman Scholarship priority deadline. Incoming freshmen who apply for admission with all admission materials postmarked by this date receive automatic consideration for Freshman and General Scholarships. Students who have a minimum 28 ACT or 1250 SAT score (excluding the writing score) and a 3.25 high school GPA receive priority consideration for these scholarships.

April 1 is the Transfer Scholarship priority deadline. Transfer students pursuing a first undergraduate degree who are accepted for admission with a minimum 3.25 transfer GPA and 30 transfer hours completed by this date receive automatic consideration for Transfer Scholarships. Financial need may also be a consideration in the awarding of these scholarships. Transfer students accepted for admission by February 1 with a minimum 3.0 transfer GPA receive automatic consideration for General Scholarships.

Current Auburn students who have a minimum 3.0 cumulative, unadjusted AU GPA at the end of fall semester receive automatic consideration for General Scholarships.

To receive consideration for need-based scholarships, students must complete the Free Application for Federal Student Aid (FAFSA) each year. The FAFSA must be received by Auburn by the financial aid priority deadline of March 1. Unless otherwise noted, scholarships are awarded in the spring for the upcoming academic year.

## Freshman Scholarships

**National Scholars Presidential Scholarships** are awarded to National Merit Finalists, National Achievement Finalists, and National Hispanic Scholars. National Presidential Scholars receive tuition for four years, a \$1,500 technology allowance in the first fall semester, and the Auburn Academic Guarantee. The Auburn Academic Guarantee includes an invitation to participate in the University Honors College and a \$4,000 enrichment experience stipend available for one semester after the second year. National Presidential Scholars also receive an on-campus housing allowance for four years and an annual stipend based on eligibility as determined by the National Merit Scholarship Corporation and/or financial need as demonstrated through completion of the Free Application for Federal Student Aid (FAFSA). National Merit and Achievement Finalists must have a minimum 3.0 high school GPA. National Hispanic Scholars must have a minimum 30 ACT or 1330 SAT score and a 3.5 high school GPA. National Merit Finalists should contact National Merit Scholarship Corporation to name Auburn University as their first choice institution by May 1. National Achievement Finalists and National Hispanic Scholars should mail or fax a copy of their notification letter to the Office of University Scholarships by May 1.

**Spirit of Auburn Scholarships** are automatically awarded to Alabama residents with a minimum 28 ACT or 1250 SAT score and a 3.25 high school GPA at three levels beginning in October. Students must have the minimum test score and high school GPA required for consideration at each level. Presidential Scholars receive tuition for four years, a \$1,500 technology allowance in the first fall semester, and the Auburn Academic Guarantee. The Auburn Academic Guarantee includes an invitation to participate in the University Honors College and a \$4,000 enrichment experience stipend available for one semester after the second year. Founders Scholars receive tuition for four years. University Scholars receive \$10,000 over four years at \$2,500 per year.

**Academic Scholarships** are awarded among non-residents with a minimum 28 ACT score or 1250 SAT score and a 3.25 high school GPA at three levels in December. Students must have the minimum test score and high school GPA required for consideration at each level. Academic Scholarships are awarded competitively, and the minimum test score and GPA required for consideration at any level does not guarantee a scholarship will be awarded at that level. Presidential Scholars receive 2/3 non-resident tuition for four years, a \$1,500 technology allowance in the first fall semester, and the Auburn Academic Guarantee. The Auburn Academic Guarantee includes an invitation to participate in the University Honors College and a \$4,000 enrichment experience stipend available for one semester after the second year. Heritage Scholars receive 2/3 non-resident tuition for four years. Charter Scholars receive \$20,000 over four years at \$5,000 per year.

Additional Freshman Scholarships are also available. Alabama residents should contact their high school guidance counselor regarding scholarships for which students must be nominated for consideration.

## Transfer Scholarships

A number of one-year, non-renewable Transfer Scholarships are awarded at three levels. The minimum transfer GPA required for consideration at each level does not guarantee a scholarship will be awarded at that level. Transfer Scholarships are awarded in April for the upcoming academic year. Students who enroll spring or summer term will be considered with the students who plan to enroll fall term.

**Academic Excellence Scholarships** are awarded up to tuition for Alabama residents and up to 2/3 tuition for non-residents. A minimum 3.75 transfer GPA is required for consideration.

**Academic Achievement Scholarships** are awarded at \$1,500. A minimum 3.25 transfer GPA is required for consideration.

**Phi Theta Kappa Transfer Scholarships** are awarded at \$2,500. A minimum 3.75 transfer GPA and a letter of nomination from the two-year college advisor confirming Phi Theta Kappa membership are required for consideration.

## General Scholarships

Criteria for General Scholarships varies and may include but not be limited to geographic location as defined by high school attended and/or city, county, or state of residence, academic achievement, and financial need. Eligible students are automatically considered for any General Scholarship for which they meet the criteria.

## Departmental Scholarships

Each of Auburn's 12 colleges and schools awards scholarships separate from the scholarships awarded at the University level. Criteria for Departmental Scholarships varies and includes academic major in addition to geographic location, academic achievement, and/or financial need. A separate application may be required for consideration. Students should contact the college or school in which they plan to major for Departmental Scholarship opportunities and requirements.

## External Scholarships

External Scholarships are awarded by individuals or organizations external to Auburn University. Checks should be mailed to the Office of University Scholarships for deposit into the student's university billing account. Students are encouraged to pursue as many External Scholarship opportunities as possible. Although Auburn University does not limit these scholarships by number or amount, scholarships received may affect the amount of federal financial aid for which students are eligible.

# Auburn University Scholarships

## GENERAL SCHOLARSHIPS

A. H. Skinner	Cherokee County Auburn Club/Robert (Blow) Leath Memorial	Greater Birmingham Auburn Club/Howard Elliot	Lieutenant Colonel Henry Earl Turner
A. S. Mitchell	Chicago Auburn Club	Greater Birmingham Auburn Club/Jim Scogin Memorial	Limestone County Auburn Club
AASD-STEM	Chick-Fil-A	Greater Nashville, TN Auburn Club Annual	Lloyd & Ruth Maxwell
Alabama Crime Victim's Dependents	Chilton County Auburn Club	Greater Nashville, TN Auburn Club Endowed	Lois F. & James Turnipseed, Jr.
Alan & Libby Moise	Chilton County Farmers Federation	Greater Valley Area Auburn Club	Louise Dent Hurt
Alabama Centennial	Christine Louise McClain	Guntersville/Marshall County Auburn Club	Lowcountry Auburn Club
Albert L. Thomas	Clarke-Washington Counties Auburn Club/William H. Garris Memorial	Gussie L. Vines	Lowe E. Burford
Albertville High School	Class of 1908	Guy V. Bullock	Lt. General Kelly H. Burke '52 Fund for Excellence
Alexander H. Stephens Chapter	Coach Stokely Bazemore, Jr.	Harry Haman	Lula Bondurant Harrison
Alfred Aldrich Honors	Columbia-Midlands Auburn Club	Harry M. Philpott	Macon County Greyhound Park, Inc. Victoryland
Alfred D. Brown	Columbus/Phenix City Auburn Club	Hawkins Family	Major John Pelham
Allie Bates Jolley	Compass Bank Honors	Helen Krause Leslie	Mamie L. Hardy
Allison Chappell	Corporal Mitchell Red Cloud, Jr.	Henrietta W. & Neil O. Davis	Marguerite Virginia Parsons
Alpha Lambda Delta Freshman Honor Society	Coweta/Fayette Auburn Club	Henry Blizzard	Marilyn Krieger Glass
Alva P. McCrary	Cradle of the Confederacy	Henry County Auburn Club	Marion & Thomas Bass
American Legion Auxiliary	Crenshaw County Auburn Club	Hey Day	Marshall County Auburn Club Annual
Amerson Family	Crenshaw Poole	Holland M. Smith	Marshall County Auburn Club Endowed
Ann Barr Honorary 4-H Club	Cullman County Auburn Club/ Herman T. Pruett Memorial	Homer H. B. Mask	Mary Ansley
Arnold W. Umbach, Sr.	Dale County Auburn Club/Pamela Wells Sheffield Memorial	Horace & Selwyn Turner	Mary C. Ansley
Ashley Williams Memorial	Daniel Foundation of Alabama	Houston Area Auburn Club	Mary Darnell Johnson
Atlanta Auburn Club	David & Donna Lehman	Hub Waldrop	Mary Ellen Ahlstrom-Thorn
Atlanta Auburn Club/Roy B. Sewell Memorial	Dixie Bibb Graves	Hugh M. Long, Jr. '47	Mary Helms
AU Cheerleaders	Dorothy Jones Calloway	Huntsville Madison County Auburn Club Brooks & Marian Moore	Mary Lou Foy
AU Employee Dependent Children	Dorothy Williamson Allen	Ida Susan Morris	Mary Yeager Wilson
AU Family Campaign	Dr. Clarnece Daniel Wright	J&M Bookstore	Mattie Huey
AU Retirees Association	Dr. Pat H. Barnes/Centennial of Women	J. L. & Elizabeth Grant	Maude Baker
AU Tiger Paws	Drummond Company Honors	Jackie Norman Memorial	Max E. Kahn Memorial
Aubie	Dudley Academic	Jackson County Auburn Club	McIntosh Area Auburn Club
Auburn Alumni Association	Edd Kennedy, Jr.	Jacksonville, Florida Area Auburn Club	Melba C. Peebles
Auburn Club of West Florida	Edmund C. & Margaret May Leach	James Arthur King & Mary Neely King	Memphis Area Auburn Club
Auburn Football Lettermen Club	Edmund C. Leach	James E. & Emma O. Foy "Foy Spirit Award"	Metro Washington D.C. Auburn Club
Auburn University Board of Trustees	Electra Semmes Colston	James Henry Willingham	Michael Arnett Nobles Memorial
Auburn University Interfraternity Council	Elizabeth Ann Hall Memorial	James N. (Trey) Wilbourn	Michael Rooker
Auburn Veterans	Elizabeth Bazemore Memorial	James Seaborn Boyd	Middle Georgia Auburn Club
AUF Student Scholars	Elizabeth E. Strother	Jay & Kelley Evers	Mildred & Leonard Barstis
Augustus T. Graydon	Elmore County Auburn Club	Jean B. Martin	Miles & Mary Stephens
Austin Auburn Club	Emerald Coast Auburn Club/Bill & Gayle Creamer Memorial	Jefferson Davis	Miss Alabama
Autauga County Auburn Club/Ronnie Rucker Memorial	Emerging Leader Institute	Jennie Dean	Miss Auburn Universities
Baldwin County Auburn Club	Emory O. & Jeanne L. Cunningham	Jennie Viene Crenshaw Poole	Mobile County Auburn Club
Barbara Coggins McGlamery Memorial	Energen	Jerry Mack Whitaker Memorial	Mollie Hollifield
Baton Rouge, LA Auburn Club/Cecil Hagood Memorial	Erwin & Alberta Hanfl	Jerry Roden, Jr.	Monroe County Auburn Club
Bay Area Auburn Club	Escambia County Auburn Club	Jessica & Stephanie Johnson	Montgomery Auburn Club/Monty Carpenter
Beatrice Blankenship	Etowah County Auburn Club	Jill Margaret Easterling	Moody & Obyree Hayes
Beatrice Fontana	Eugene Allen Smith Memorial	John & Will Vandiver Memorial	Moreland Griffith Smith, I & Charles Milton Smith, II
Bessie Seay Rose	Evelyn & Reid Davis	John A. Braswell	Morgan County Auburn Club
Blanchard H. "Buster" Stallworth	Faith Crystal Hestley Schoggins Henderson	John Edward Wiatt & J. Streeter Wiatt	Mrs. C. Howard Calloway
Blount County Auburn Club	Flora Hestley Bryant	John Gilino	Mrs. Fred T. Sharp
Bluegrass (KY) Auburn Club	Florence B. Burt	John H. Orr	Mrs. John A. Braswell
Bonnie H. Arnall	Florence B. Burt	John Hunt Morgan	Muriel & Mary Lee Albright
Brenda Ford Dadds Memorial	Florida West Coast Auburn Club	John Martin Lee	Myrtle R. Plant
Brian Alexander Payne	Floyd O. Hicks	John McCain Buzbee Memorial	N. H. & D. W. Cline & R. C. & H. R. Collier
Buris R. Boshell Honors	Four Little Girls Memorial	Johnny Micheal Spann Memorial	N. Tod & Vanessa J. Holloway
C. Dozier & Carolyn Hill Corr	Frances Davis	Josephine Law Wallace	Nelson & Charleen Kemp Foundation
C. Howard Calloway	Frank & Virginia Ann Stewart	Judy Bentley Blackwell	New Orleans Auburn Club
C. S. & Louise Bazemore	Frank Y. Conner, Jr.	Kansas City Auburn Club	North Alabama Auburn Club/Lloyd & Sandy Nix
Calhoun/Cleburne Counties Auburn Club	Franklin County Auburn Club	Kate Hollifield	North Baldwin County
Campbell & West Families	Franklin Whyte Bedford Memorial	Katharine Cooper Cater Memorial	Northwest Auburn Club
Campus Club - Caroline Draughon Annual	Frederick & Charlene Kam & Family Futral-Barron Children of the Confederacy	Kathie Little Mattox	NROTC Alumni Association
Campus Club - Caroline Draughon Endowed	Gail McKean Yeagley	Kathryn Ann Collier	Odessa M. King & Shirley S. King
Cape Fear (NC) Auburn Club	Gary C. Martin	Kathryn Gilder Roden	Oklahoma City Auburn Club
Captain Scott Cummins	Gavin Simpson Memorial	Katie & William Pennington	Olivia Watts Martin
Captain Truss Chapter	Gaynell Jackson	Kenneth & Louise Thomas	Omicron Delta Kappa
Captain William H. & May D. Compton	General University	Kenneth J. Ingram, Jr. & Associates	Orlando Area Auburn Club
Carl & Jessie Summers	Global Tigers International Education	Kenneth Todd & Amy Woodall Carroll	Owner Operator Independent Drivers Association
Carl W. Connell	General William Crawford Gorgas	Kristen Hayes Marotte	Palmetto (Greenville, SC) Auburn Club
Carol Wagoner Segrest	Goizueta Foundation	Lanierland Auburn Club	Patricia Ann Holladay Holder Memorial
Carolyn Hugginsmith Chappell	Gold Coast, FL Auburn Club	Lauren Ashley Burk Memorial	Pauline Moran Philpott
Cedrick C. Mack Memorial Beacon Leadership	Golden Eagles	Lauren Ashley Burk	Payne Hopton-Jones
Charles Barkley	Golden Isles Auburn Club	Lee Boyd Chun	Persons with Disabilities
Charles E. Ball, Sr. Memorial	Golden Triangle Auburn Club	Lee County Auburn Club	Peter A. Brannon
Charles Ernest Pannell	Grady F. "Buddy" Edwards, Jr. Memorial	Lee Moody	Phil & Sylvia Richardson
Charles H. Cox Memorial	Great Great Granddaughter Club	Leischuck-Reaves	Philadelphia Auburn Club
Charles M. Sherrod	Greater Birmingham Auburn Club/Jimmy Brown Memorial	Leopold M. Bashinsky	Presbyterian Home
Charlie Wheat	Greater Birmingham Auburn Club Band	Les & Civel Adams	Preston C. & Emerson W. Blakney
Charlotte Auburn Club	Greater Birmingham Auburn Club/Edd Wadley Memorial	Letitia Ross	Provost Leadership Undergraduate Scholarship (PLUS)
Charlotte Williams Coopwood			R.B. Broyles

## Financial Information

Ralph "Shug" Jordan  
 Randolph County Auburn Club  
 Randy & Nancy Campbell  
 Raymond Eugene Sullivan  
 Rena Junkins Roberts  
 Richard Rose McAdory  
 Richmond Area Auburn Club  
 Robert B. Strong Memorial  
 Robert Dana Bartlett Memorial  
 Robert E Lee Ch#192  
 Robert E. Lee  
 Robert G. & Carrie C. Dawson  
 Robert Meyer Foundation  
 Robert W. Harris Memorial  
 Robert Young Brown & Walter Lee Brown  
 Rocky Mountain Auburn Club  
 Roy A. Bolen & Wynona Bolen McDonald  
 Rush Robinson Gross Memorial  
 Ruth E. Martin Quick  
 Sadie Edwards Roberts Miss Auburn  
 Samford Society  
 Samuel & Burnice Wittel  
 Samuel Hamilton O'Hara Memorial  
 San Diego Auburn Club  
 Sandra Logan  
 Sarah Scott  
 Savannah Auburn Club  
 Shoals Area Auburn Club  
 Sloan Y. Bashinsky, Sr. Honors  
 Smoky Mountain Auburn Club  
 Sophie Bibb  
 South Carolina License to Learn  
 South Talladega Auburn Club  
 Southwest Georgia Auburn Club  
 Southwest Georgia Auburn Club/Elmer  
 Cleve Wester, Jr.  
 St. Clair County Auburn Club/Gray Jones  
 Memorial  
 St. Clair County Auburn Club/Marlin S. &  
 Amelia P. Huggins Memorial  
 St. Clair County Auburn Club/W. D.  
 Jackson Memorial  
 St. Louis, Missouri Auburn Club  
 Stephen Garrard Hill  
 Stephen S. Ensminger  
 Student Alumni Association  
 Student Government Association Auburn  
 Creed  
 Student Government Association  
 President  
 Student Government Association Senate  
 & Cabinet Members  
 Sue Hamilton Garner & Woodrow Garner  
 Susan Hester & Clyde Stanley, Jr.  
 Susan Martha Koonce Steagall  
 Tallahassee Auburn Club  
 Tampa Bay Auburn Club/Prentis S.  
 Howard  
 Terry Bowden  
 Thigpen Family  
 Thomas & Rosa Drake Duboise  
 Thomas Goode Jones  
 Thomas W. Bennett, Jr. & William W.  
 Bennett  
 Thomas W. Martin  
 Thomas W. Price  
 Tim & Paula Steigerwald  
 Tim & Shannon Douthit, Owners of  
 Bendall's Pharmacy, Inc.  
 Tom & Kay Aderhold  
 Tuscaloosa County Auburn Club  
 Undergraduate Competitive Research  
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 Vera Young Reid  
 Virginia Clay Clopton  
 W. E. McClain Memorial  
 W. H. Nelson, Jr. Memorial  
 W. James Samford, Jr. '72  
 W. M. & L. Y. McEntyre Burns  
 W. M. Fambrough  
 W.E. McClain Memorial  
 Wade F. Botts  
 Walker County Auburn Club/Sam R.  
 Murphy & Lawson W. Murphy, Jr.  
 Warren Brothers  
 West Central Georgia Auburn Club

West Georgia Auburn Club/Charles D.  
 Hudson  
 Wilkins Eugene & Mary M. Tanner  
 William H. & Kate F. Stockham  
 William Hiram McGhee  
 William Reed Davidson  
 William V. & Marlene Muse Family  
 Wilma Proctor Hall & William Garnol Hall  
 Wiregrass Auburn Club Annual  
 Wiregrass Auburn Club Award  
 Zana Louvin Puerifoy

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 Stevenson & Joe Yeager  
 Agricultural Alumni Association/E. V. &  
 M. N. Smith Memorial  
 Agricultural Alumni Association/L.  
 Aubrey Smith  
 Agriculture Alumni Association  
 Agronomy & Soils  
 Alabama Association of Conservation  
 Districts Auxiliary  
 Alabama Catfish Producers  
 Alabama Council of Cooperatives  
 Alabama Crop Improvement Association  
 Alabama Crop Management Association  
 Alabama Electric Cooperative, Inc.  
 Alabama Farmers Cooperative  
 Alabama Feed & Grain Association  
 Alabama Master Gardeners Association,  
 Inc.  
 Alabama Power Foundation  
 Alabama Seedmen's Association  
 Alabama Soil Fertility  
 Alabama Turfgrass Association  
 ALFA  
 Ann Elizabeth Haggard  
 AU Agriculture Alumni Fall Roundup/  
 Auction  
 Auburn Fisheries Family Legacy  
 Barbara Duggan Wilson  
 Barbour County Farmers Federation  
 Ben T. Lanham, Jr. Memorial  
 Bernard Ward  
 Bill Chesnut  
 Bond Family  
 Bradley Mixon Pace  
 Campus Club First Ladies  
 Charles & Jean Glover  
 Charles F. Simmons Memorial  
 Charles L. Isbell Memorial  
 Charles W. Purvis/A. C. Legg  
 Claude I. & Ruth Laubenthal Carter  
 College of Agriculture Endowment  
 College of Agriculture General  
 Comer Foundation  
 Covington County Farmers Federation  
 Cravey Family  
 Curtis Springer  
 D & F Foundation Endowed  
 D & F Foundation Annual  
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 David Bon Haggard  
 David Whigham Mixson  
 Dawn Fortenberry Knox  
 Don Logan  
 Don W. Sand-Gold Kist  
 Dr. & Mrs. Joseph T. Hood  
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 Dr. Benjamin F. Hajek  
 Dr. Charles F. Simmons  
 Dr. Dale L. Huffman  
 Dr. Lowell E. Wilson  
 Dr. Robert Alexander Nunn  
 Dr. Roy Lee Lovvorn  
 Dr. G. J. Cottier  
 Dr. L.E. Ensminger  
 Dr. Lowell E. Wilson  
 Ed & Nell Richardson  
 Elbert & Barbara Botts  
 Ellis Brothers Seed  
 Eloise & Charles P. Johnston  
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 Association

Forrest H. & William F. Ingram  
 Frank E. Boyd Memorial/Gamma Sigma  
 Delta  
 Frank M. Renfro Memorial  
 Frate Bull, Sr.  
 Fred A. Kummer  
 Garden Club of Alabama, Inc.  
 Garden Club of Alabama/V. R. Welchel  
 Gavin "Gee" Hunter  
 Gayner R. McDaniel  
 Geneva County Farmers Federation  
 George & Mary Pruitt  
 George R. & Monta J. Ingram/Alabama  
 Feed & Grain Association.  
 Goodwin Myrick Memorial  
 Greenscape, Inc.  
 Hale County Farmers Federation  
 Harvey & Lois Downs  
 Henry A. Bullard/Morgan County  
 Farmers Federation  
 Henry Allen Torbert, Jr.  
 Henry P. Orr  
 Hilmer L. Jones  
 Hop King  
 Horticulture Endowment  
 Horticulture Nursery  
 Houston County Farmers Federation  
 Irene & William Gill  
 Irma Spears Lee  
 J. C. & Sally K. Hawthorne  
 James Earl & Louise Mobley  
 James Edgar Payne, Sr. Memorial  
 James H. Hall  
 James W. & Elaine B. Lester  
 Jimmy & Chris Pursell  
 Joel Daniel Hardee Memorial  
 John Louis Whitley Memorial  
 John P. Cunningham, Jr. Memorial  
 John W. Pace, III  
 John W. Pace, Jr. Memorial  
 L. M. & M. H. Ware in Horticulture  
 L. M. Ware Memorial  
 Lawrence County Farmers Federation  
 Lawrence County Friends  
 Lee County Farmers Federation  
 Leroy Hill  
 Louis J. Chapman & Louie Charles  
 Chapman Memorial  
 Loyd P. Owens  
 LWH Enterprises, Inc.  
 Mark & Mindy Jackson  
 Martin L. & Exa B. Beck  
 Mary Hall Ware/Garden Club of Alabama  
 Mary Lou & Maury Matthews  
 Maxwell E. Jones Memorial  
 McMillan Lane  
 Melborn Ivey Memorial  
 Mobile County Farmers Federation  
 Mobile County Master Gardeners  
 Association/JoAnne Ormann  
 Montgomery Federation of Garden  
 Clubs, Inc.  
 Morris White  
 Mr. & Mrs. A. F. Caley  
 North Carolina Recruiting  
 Northeast Alabama Hosta, Iris, & Day  
 Lily Society  
 Poultry Science  
 R. Wayne & Nadine McElrath  
 R. Y. Bailey  
 Rembert Bayne, Jr.  
 Rodeo/Equestrian Team Fund for  
 Excellence  
 Russell & Adelaide Roberson  
 Samuel Earl Upchurch  
 Southern States  
 Staplocotn  
 Terry Beasley  
 Trudy & Henry Baker  
 Tuscaloosa County Master Gardners  
 Association  
 W. F. Ward Fellowship  
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 Wiley C. Johnson  
 Will Howard Smith  
 William & Evelyn Adkins Memorial

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 Campbell  
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 Brawco, Inc./ W. Michael Chandler  
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 Brock Family  
 Chad Bowman  
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 College of Architecture, Design, &  
 Construction PLUS  
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 Cooper Carry, Inc.  
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 Haley Bennett  
 Don Logan  
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 Frank J. Sindelar  
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 Friends of Will Sturges, Class of '88  
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 Architecture  
 Gary R. Dent '70  
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 General Building Science  
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 Golden & Associates Construction, LLC  
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 John & Dodgie Shaffer  
 Jova/Daniels/Busby  
 Keith Petitjean  
 L. Judson Akin  
 Linbeck Construction Corporation  
 Lois F. & James Turnipseed, Jr.  
 Marshall J. Conner '40  
 Martin & Cobey Construction Company,  
 Inc.  
 Martin & Cobey in Honor of Fred Martin,  
 Jr.  
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 R. Mack & Jamie Freeman  
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 Robins Corporation  
 Roger W. Rindt Memorial  
 Seay, Seay & Litchfield  
 Southern A&E, LLC

## Financial Information

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W. S. Ball  
Wesley Scott Bilbo  
William A. Hunt '55  
William P. Caddell Jr. '58  
William T. Warren & William T. Warren, Jr.

### COLLEGE OF BUSINESS

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Alabama Young Bankers  
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Aldridge Borden & Company  
Alldredge  
AmSouth Bank  
Andrew L. Kizer  
Anne Phillips Pearson  
Arthur Anderson & Company/William J.  
Nettles Memorial  
Arthur L. Burnette Estate  
Aston Family  
AT&T/Pathways  
Atlanta Alumni  
Aviation Management Advisory Board  
Babe & Suzelle McGehee  
Barfield, Murphy, Shank & Smith  
Beech Aircraft Foundation  
Benjamin G. McDaniel Presidential  
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Bobby J. & Angela North  
Boyd Brothers, Inc.  
Bray Honors  
Bridgestone/Firestone, Inc.  
Buddy Moore Trucking, Inc.  
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Calvin Smyre  
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Charles P. Anson  
Charles S. Frew  
Charlotte Wingfield  
Chick-Fil-A  
Christopher & Eva Dyba  
Christopher Benson  
Christy & Bruce Cox  
College of Business  
Curtis S. Feemster Memorial  
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Deloitte & Touche LLP  
Deloitte Foundation  
Dempsey Boyd  
Dewey F. Turner  
Dick & Terry Ingwersen  
Don Logan  
Douglas Sherman Boyce  
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Draffin & Tucker, LLP  
Dwight Bassett  
E. L. Spencer  
Earl & Melinda Parsons  
Edward & Catherine K. Lowder  
Edward L. Lewis & Rebecca S. Lewis  
Edward L. Lowder Memorial  
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Elmer B. Harris  
Elton & Janet Wolf  
Eric & Katie Cochran  
Everett & Lissie Stewart  
Frank & Annie Summersel  
Frazier & Deeter  
Fred & Norma Blatchford  
General MBA  
George Carter McCamy  
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Hopper-Neil  
Howard Nelson  
Hub Group, Inc.  
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Information Systems Management  
J. Blacksher White-Spunner  
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Jackson Thornton & Company  
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James Robert Burton  
James S. Towle, Sr.  
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Jamie & Anne Rainer  
Jennifer Claire Moore Memorial  
Jere & Sara Beasley  
Jere L. & Sara B. Beasley  
Jerry J. Thomley  
Jerry J. Thomley & Patsy W. Thomley/  
Alabama Power Foundation  
Jerry Lewis Savage Memorial  
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John H. Blackstone  
John Hill West Memorial  
John Winfield Scott  
Kench Lee Lott, Jr.  
KPMG Annual in MIS  
L. Nick Davis  
Laverne Taylor Flanagan  
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Lee & Kathy Griffith  
Lewis & Monteeln Savage  
Louie M. & Betty M. Phillips  
Machen, McChesney & Chastain, LLP  
Major William Ellis Winter  
Marian Shelton  
Mary Dunn Baker  
Mary Jane Laumer  
Mary K. Hiley  
Melba C. Peebles  
Melissa Love  
Metcalfe Davis  
Milton "Biff" & Ellen Woodruff  
Mindy & Jay Bray  
Ned & Margaret Pierce  
Norvelle L. "Gus" Smith  
O'Sullivan Creel, LLP  
Patsy W. Thomley  
Pearce, Beville, Leesburg & Moore  
Philip Morris, U.S.A.  
Phillip Marshall McElroy Memorial  
PricewaterhouseCoopers LLP  
Protective Life Corporation  
R. Bernard Blankenship  
R. Conner Warren  
R. Terry & Peggy M. Taunton  
Raymond Douglas Houser  
RBC Bank  
Regions Bank  
Regions Financial Corporate  
Retired Eastern Airlines Pilots  
Association  
Reznick, Fedder & Silverman  
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SunTrust Banks, Inc.

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Van & Suzanne Henley  
W. H. "Billy" Coble Annual  
W. H. "Billy" Coble, Jr. Endowed  
Walker R. Bickerstaff  
Warren, Averett, Kimbrough & Marino  
Wayne Grant  
Welch Family  
Wilda W. & Roy Lee Farish  
William A. Cobbs, Jr.  
William G. & Anne Sewell  
William Haefner  
William P. Ainsworth  
William P. Meriwether  
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Tomasso  
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B. B. & Frances Nelson  
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Betty McLendon Dement  
Betty Thrower Freeman  
Charles M. Reeves, Jr. & Frances  
Skinner Reeves  
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College of Education  
College of Education Student Council  
Comer Foundation  
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David James Byrd  
Department of Rehab & Special  
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Dr. J. Floyd Hall  
Dr. Maxwell King  
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Elaine Moore Jackson  
Frank & Warren Bolen Barbaree  
Franklin Family  
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Hach Scientific Foundation  
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John R. Dyas  
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Kathryn Flurry & Harrell Ray Morgan  
Kathryn McClellan Strock  
Layne Reynolds  
Lillian Cross Davis  
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Margaret Graves Frazier  
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Martha Sanders Mickey  
Martin Luther & Exa Beck  
Mary Elizabeth Morgan Memorial  
Mildred Cheshire Fraley Endowed  
Mildred Cheshire Fraley Fund for  
Excellence  
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Paul W. Scheid  
R. Wayne McElrath  
R. W. Montgomery  
R. Wayne & Faye McElrath  
R. Wayne McElrath  
Richard A. Scott Memorial  
Richard C. Kunkel  
Robert L. Saunders  
Ronald J. Weaver  
Sam Long Hutchison

Sandra Bridges Newkirk  
Strauss Family  
Theodore Franklin & Winnifred Phillips  
Yancey  
Yvonne Williams

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Adtran, Inc.  
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Alabama Textile  
Alabama Textile Education Foundation  
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Albert M. Redd, Jr. & Susan Warburton  
Redd  
Amerada Hess Corporation  
American Cast Iron Pipe Company  
American Tank & Vessel, Inc.  
Amoco Chemical  
Amoco Electrical  
Amoco Mechanical  
Angelo Tomasso, Jr. & Joy Love  
Tomasso  
AT & T Minority Engineering Program  
Auburn Alumni Engineering Council  
Augusta Jean Buck  
B E & K, Inc.  
BCM Engineers, Inc.  
Becky & Ed Lewis  
BET Accenture  
Betty Duke Lee & Malcolm E. Sexton  
Betty Fischer Riley  
Birdie Tucker Smith  
Boeing Aircraft  
Boeing Minority  
Brasfield & Gorrie, Inc.  
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Cellnet Technology, Inc.  
CH2M Hill  
Charles Edward Sauls  
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Chemical Engineering  
Chevron  
Chevron for SWE  
Chevron in Electrical  
Chevron in Mechanical  
Christopher J. G. Couch  
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Ciba-Geigy  
Citation Corp.  
Civil Engineering  
Civil Engineering Alumni  
Civil Engineering Class of 1976  
Civil Engineering/Faculty  
Clarence C. Adams, Jr.  
Cleary Family  
Cleveland L. Adams  
Coca-Cola/AU Minority  
Collazo Enterprises  
College of Engineering Annual  
College of Engineering Dean's  
College of Engineering Endowed  
Comer Foundation  
Comer Foundation - Industrial Systems  
Contractors License Fee  
CSSE Industrial Advisory Board  
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D'Anne Clark Machemehl/Hugh Neville/  
Rex Copeland  
Danny G. Snow  
David Scarborough Family

## Financial Information

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Dr. Rex Kelly Rainer, Sr.  
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Earl D. Johnson Memorial  
Eddie Little Memorial  
Eddie Little Memorial Freshman  
Edward H. Silber Memorial  
Effie C. Dunstan  
Electrical & Computer Engineering  
Faculty  
Electrical Engineering  
Elmer B. Harris/Alabama Power  
Foundation  
Engineering Special Award  
Ethelyn Hardesty Morgan  
F. J. Evans  
Foundry Educational Foundation/ R.  
Conner Warren  
Frank & Lauren Hamner  
Frank H. Morriss  
Frank Vandergrift  
Fred & Juanita Mace  
Fred & Mary Lou Birdsong  
Fred W. Martin  
General Aerospace Engineering  
George & Edna Russian  
George Aristides & Phyllis Hughes  
Menendez  
George L. McGlamery  
George W. Whitmire  
Gerdau Ameristeeel  
Ginn Family Trust Wireless Engineering  
Glee Thompson  
Goodwin Fund  
Goodyear Tire & Rubber  
Grigg-Burns  
H. K. Porter  
Harold & Wynelle Ward  
Harris Corporation  
Harry & Eunice Parmer  
Herbert Knox Payne, Jr.  
Highland Industries  
HMB Alabama, LLC  
Hoyt A. McClendon  
Hugensmith  
Hugh & Loeda Francis  
Hydromatics, Inc.  
Industrial & Systems Engineering  
J. C. & Sally K. Hawthorne  
Jack & Margaret Hutchinson '48 & Dick  
Hutchinson  
James & Patricia Corbitt  
James B. & June Peevy Odum  
James H. Stewart  
James L. Cooper Jr.  
James Lindell Sanders  
James W. Woodruff, Sr.  
Jan & Tommy Avant  
Jeffery Stone  
Jeremy A. Etheridge  
Jerry J. Thomley & Patsy W. Thomley/  
Alabama Power Foundation  
Jesse D. May & James M. Chandler  
Jesse McGill  
Joe W. Forehand  
John & Cynthia Mace Anderson  
John C. Adams/Alabama Power  
Foundation  
John E. & Patti Gipson/Penta Research,  
Inc.  
John F. & Agnes N. Meagher Jr.

John H. & Gail P. Watson  
John K. Hodnette Memorial  
John P. Brandel  
John S. Henley, III  
John W. & Rosemary K. Brown  
Johnston Industries  
Joseph F. & Gail Barth  
Julia & Albert Smith  
Kenneth B. & Sarah S. Roy  
Kent Luttrell  
Kimberly-Clark Corporation  
L. Owen & Brookes H. Brown  
L. Ray & Jackie Taunton  
Lane, Bishop, York & Delahay, Inc.  
Larry & Mary Benefield  
Larry E. Speaks & Associates, Inc.  
LBYD, Inc.  
Lee & Diane Drake  
Lee W. Richards  
Leonard L. Mitchum, Jr. & Ila Mitchum  
Lewis Roser  
Lex S. Owens  
Lockheed Martin  
Lynn F. Williams Memorial  
Marie & Lawrence Browder  
Marshal S. Caley  
Mason Studdard  
Materials Engineering  
McCartney Construction Co, Inc.  
McGlamery  
McMillan Family  
MEAS ISE Gift  
Mechanical Engineering  
Melissa Brown Herkt  
Michael & Evelyn Pindzola  
Michael Thomas & Eleanor Y. Fullan  
Minnesota Mining & Manufacturing  
Company  
Minority Engineering  
Mr. & Mrs. Edwin M. Dixon  
N. Wayne Houston  
Nancy B. & Benjamin F. Carr, Jr.  
National Merit Scholars  
National Science Foundation for  
Engineering  
Norman L. Liver  
NSF - Next Generation Manufacturing  
O'Neal Austin  
Otis William "Bill" Bynum  
Otto Peter "Pete" Cerney  
Patrick Michael Couch High Flight  
Foundation  
Paul & Marilyn Box  
Philip W. Robinson  
Phillip F. Moon  
Pratt & Whitney Rocketdyne  
Preston E. Williamson  
Pulp & Paper  
R. Conner Warren  
R. M. Waters & L. B. Waters Family  
Legacy  
Ray D. Bass  
Raymond & Eleanor Loyd  
Raymond T. & Marina Reese Roser  
Redd Family Foundation, Inc.  
Richard & Rita Porterfield  
Richard I. Kearley, Jr. & Clarice W.  
Kearley  
Richard L. & Jeanne E. Franklin  
Richard T. Scott  
Rod & Geneva Grandy Presidential  
Rodney Bradfod  
Roger L. Holmes, Jr.  
Rufus & Peggy Simpson  
Samuel B. Alison  
Schlumberger Foundation, Inc.  
Seeds of Love/Willie T. Grant  
Shaw Industries  
Smart/Courtney  
Sonat Minority  
Southeastern Consortium for Minorities  
Southern Nuclear Operating Company  
Stacey Family  
Tau Beta Pi  
Terry Allen Kirkley  
Textile Engineering

Thomas D. & Frances W. Burson  
Thomas D. Senkbeil  
Thomas Hester  
Thomas M. Lowe Memorial  
Tim Cook  
Tracy, Lou Ann & Jay O'Rourke  
Trent Williams  
Vodafone - U.S. Foundation  
Vodafone Fellows Initiative International  
Exchange Program  
W. George Hairston, III  
Wallace L. Dawkins  
Walter F. Johnsey  
Ware Gaston Family  
White Family  
William A. Boone  
William Dwight Bond Family  
William E. Hooper Memorial  
William F. & Brenda W. Hayes  
William H. Baskerville  
William R. & Sue H. Hanlein  
William S. Richardson  
William T. "Red" Huddleston  
William Winfield Clark  
Willie Little Clark & George Samuel Clark

### SCHOOL OF FORESTRY & WILDLIFE SCIENCES

Alabama Association of Conservation  
Districts Auxiliary  
Burgin Companies'  
Charles Dixon Memorial  
Christen, DeBrunner & Posey  
Dwain G. Luce Family  
Dwight & Ruth Ann Nunn Bond/Robert  
Tufts  
Edward A. Hauss  
Elizabeth Powers & Joyhn Coleman  
Banks  
Emmett F. Thompson  
Ernest Hale  
Forestry & Wildlife Sciences  
Frank W. Boykin  
Garden Club of AL Forestry Conservation  
Henry & Elizabeth Posey  
Hugh Kaul Foundation  
James M. Wells, Sr. Memorial  
James R. Taylor  
James W. Richardson  
L. M. & M. H. Ware in Forestry  
Lowery Plupwood, Inc./James R. Lowery  
Lynn Boykin Youth Wildlife  
Mamie L. Hardy  
Margaret Atchison Hathaway  
Melba R. Littrell  
Melba R. Littrell Memorial  
Nichols Family  
Noll A. Van Cleave  
Norman Buce Bearden Memorial  
Robert Tufts  
Rooke Family  
Rose Eugene Atchison  
Russell Lands  
Steve Jackson Memorial  
Summer Practicum Stipend  
Toomer's Oak Leadership Award  
W. Earl Hughes Memorial  
W. Frank & Mary Claire Walburn/James  
W. Martin  
Watters Family  
William Allen Carey  
William F. Sahlie Memorial

### COLLEGE OF HUMAN SCIENCES

Al & Dudley Cook  
Alma S. Bentley Memorial  
Anamerle Arant Memorial  
Arlene Rushing Lowe  
Belinda Reynolds Michaud  
Betty Winn Little  
Carol L. Warfield  
Carolyn Horn Beck  
College of Human Sciences at AU in Italy  
College of Human Sciences Faculty  
Dana King Gatchell  
David B. Haggard  
Delena Carol Pickens Memorial

Don Logan  
Dorothy Dean Arnold  
Dory Ann Johnston Blackburn  
Dothan Area Convention & Visitor's  
Bureau Miller-Hollis  
Dr. Susan Hubbard & Representative  
Mike Hubbard  
Elza Stewart Drummond  
Ethel Woodruff Draper  
Floris Copeland Sheppard  
Glenda S. Harris  
Human Sciences  
Interior Design  
International Beverage Company  
J. Smith Lanier, II & Elizabeth Walker  
Lanier

Jane C. Lorendo  
Johnston Industries  
Joseph Bruno  
Joyce & Roger Lethander  
Katherine Lynne Stanley  
Lee & Bob Cannon  
Lois Hammond Meadows  
Margaret Valentine Smith  
Marion Walker Spidle  
Norman & Varnell Moore  
Pao Sen Chi  
Parthenon Prints/Bay Point  
Pauline Sorrell Soberg  
Ruth Legg Galbraith  
Sallye Roe Nunn  
Sandy & Sally Heely  
Sister Schubert  
Tiger Rags  
William Carter Company  
Women's Philanthropy Board Annual  
Women's Philanthropy Board Endowed  
Women's Philanthropy Board Quasi  
Endowment

### COLLEGE OF LIBERAL ARTS

Alma Holladay  
Arlana Marie Johnson  
Asim Irtaza Siddique  
AU Band Fund for Excellence  
AU Bar Association Leadership  
AU Journalism Advisory Council  
AU Marching Band President's  
Auburn Plainsman  
Auburn University Alumni Band  
Auburn University Bar Association  
Auburn University Theatre Patron  
Band Scholarships & Equipment  
Beatty Seale Barlow & Freida Scoggins  
Baker  
Bert & Jeanne Bradley  
Boone Newspapers  
Bruce Greenhill  
C. Lloyd Nix  
Carol Clark Laster  
Carol Mathews Fish Memorial  
Carole Ann Stearns Fowler  
Carolyn Brinson Reed Honors  
Castanoli  
Charles Nolan Fortenberry  
College of Liberal Arts  
Communication  
Corryn Zimmerman  
Curtis O. Liles, III  
Cynthia Tucker  
Dean's Advisory Council  
Decatur Daily  
Department of Art  
Don Logan  
Drs. T. & Soma Nagendran  
Dwight Somerville  
Edward H. Hobbs, III  
Elaine Sykes McDowell  
Elizabeth Dean Watkins  
Emily Woodruff  
English Writing, Presentation & Teaching  
Estes H. Hargis Band  
Ethel Ilges Woodruff  
F. Frederick Moss  
Gannett Foundation/Montgomery  
Advertiser  
Gary Winston Brindley



## Financial Information

General Endowment Fund  
 Glenda Moseley Potts  
 Harry Campbell Family Music  
 Health Professions  
 Helen S. Flanagan  
 Herring Family  
 Humanities Fund  
 Ida S. Wolfson Memorial  
 Jack Simms  
 James & Sally Hodo  
 James A. Kirkley  
 James P. Hayes, Jr.  
 James Woodruff, Jr.  
 Jane Dickson Lanier  
 Jean Wickstrom Liles  
 Jenny Bronczek  
 Jill Rasenau Hicks & Bobby Ray Hicks  
 John Daniel Reeves  
 John Edward Wiatt  
 John F. Harmon  
 John G. Heilman  
 John William Tamblyn  
 John Winfield Scott  
 Josephine Fountain Baxter  
 Journalism  
 Kay Acton Fuston  
 Kay Reynolds Beaty  
 Kenneth L. & Kathryn G. Henderson  
 Laura Young Palmer  
 Lee & Gwendolyn Christian  
 Leo Cecil Wright, Jr.  
 Lillian Unger Pancheri Memorial  
 Louise & Henry P. Johnston  
 Malone Music  
 Mamie L. Hardy  
 Margaret Rew Sponsler  
 Marie Glass Ward Memorial  
 Mark Burns - Health Administration  
 Alumni Organization  
 Mary Dunn Baker  
 Mary Matherly Durant  
 Mary Whitley  
 Michael Carlisle Farrow Memorial  
 Millard E. Dawson  
 Milo Howard Research  
 Mindy & Jay Bray  
 Mobile Press Register Pilot Project  
 Morris W. Savage  
 Nancy & Grant Davis  
 Paul C. Burnett  
 Porter & Alice Harvey  
 Public Relations Alumni  
 Raeford B. Liles  
 Reggie & Laura Gilbert  
 Rhon & Deanne Jones Charitable  
 Foundation  
 Ritz Foundation  
 Robert D. Reid Memorial  
 Robert J. Butler Memorial  
 Robert J. Malone  
 Robert M. & Diane G. Hagler  
 Roger W. Allen & Margaret C. Allen  
 Ruth & Carolyn Faulk  
 Ruth Fountain Heard  
 Sally Jones Hill  
 Sam Long Hutchison  
 Sarah & Rebekah Pindzola  
 Sarah A. Bronczek  
 Sidney & Anita Keywood  
 Steven D. Fleming  
 Summer Enhancement  
 Ted & Alice Johnson Mallory  
 The AU Journalism Advisory Council  
 The Dean's Advisory Council  
 Theatre  
 Thomas Gossom, Jr.  
 Ursula Higgins  
 Wade-Sykes  
 William T. Brooks

### SCHOOL OF NURSING

Anna Crump Cuevas  
 AU/AUM MSN  
 Bertha L. Watkins  
 Blue Cross Blue Shield of Alabama  
 Blue Jean Ball  
 Charles McAlister

Dr. D. Wright  
 Fay B. Ireland  
 Helen Fuld Health Trust  
 Kathleen Denise Caffey  
 Lettie Pate Whitehead Foundation, Inc.  
 M & M Industries  
 Marie Moore Pace  
 Mary F. Woody  
 Mary Sue Beard  
 Nursing  
 Pat Sanders Luger  
 Robert E. & Eugenia D. Adams  
 Sam Long Hutchison  
 School of Nursing Gift  
 William D. & Peggy S. Lazenby

### HARRISON

#### SCHOOL OF PHARMACY

Albert F. Nickel  
 Alston Keith Rennie, Sr. & Leila L. Rennie  
 Arthur & Jean Serota  
 Beverly Lockridge  
 Burroughs Welcome  
 Charles & Pat Perry  
 Claude A. Shumate, III  
 David C. Hightower Memorial  
 Differential Tuition  
 Dr. Byron B. Williams & Mary Williams  
 Beck  
 Dr. Don E. Tillery  
 Dr. George M. Hocking  
 Florence Barr Perdue  
 Fred A. Waits  
 George W. Hargreaves Memorial  
 Gloria Hering Hughes  
 Harry H. Wheat  
 Harry Linden  
 Herbert Stokes Haire  
 J. L. Bedsole Foundation  
 Jack & Lillian Clift  
 James W. & Sarah F. Reid Middleton  
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 John D. Maund  
 John Harold Harmon  
 Lucy C. Weil  
 Lynn Stanford Blake  
 M. Winfield Cotton  
 Mahlon Turner  
 Mark Dowery Morgan Memorial  
 NACDS Foundation  
 Paul A. Lantrip, Sr.  
 Plough Pharmacy Student  
 Robert Alchus Carlisle Memorial  
 School of Pharmacy  
 SOS Foundation  
 T. Lester White '72  
 Thomas W. Clift  
 W. Dwight Henderson '70  
 William Edmund & Mary Park Stewart

#### COLLEGE OF SCIENCES & MATHEMATICS

Andrea M. Sumner  
 Auburn AMP  
 Auburn Dreams  
 B. F. Thomas  
 Barry L. Wilson  
 C. Lloyd & Sandy R. Nix  
 Charles B. Ordway Memorial  
 Charles R. Horton, D.V.M.  
 Cletus E. & Nancy M. Morris  
 Col. Donald T. Jones  
 College of Sciences & Mathematics  
 COSAM Coca-Cola/AU Minority  
 COSAM Golf Classic  
 COSAM Scholarships & Fellowships  
 Dan L. & Rossanne M. Philen  
 David & Edith Hamilton  
 David B. Haggard  
 David Earl Snoddy  
 Dr. Archie E. Thomas Memorial  
 Dr. Ashley Charles Davis  
 Dr. Charles B. Colburn  
 Dr. Curtis H. Ward Memorial  
 Dr. Edmund C. Dyas, IV  
 Dr. H. William Allsup  
 Dr. James W. Mathews  
 Dr. Jeffrey M. & Kathy L. Harris

Dr. Jon R. "Jack" Moody  
 Dr. Neil E. Christopher  
 Dr. Raymond M. Sims Presidential  
 Dr. Roger W. & Mrs. Margaret C. Allen  
 Dr. Scott & Beth Sprayberry  
 Dr. Wendall Hill Taylor, Sr.  
 Drs. Michael B. & Patricia W. Williams  
 EAMC  
 Edwin Oliver Price Memorial  
 Elissa Fory Wible  
 Excellence in the Department of  
 Mathematics  
 Frank J. Stevens Memorial  
 Fred Allison & Cullen Ward  
 Fred Sims Stucky, III & Amy Stucky  
 Gayla Jones Von Ehr  
 General Sciences & Mathematics  
 Geology Alumni  
 God at the Speed Light  
 Gregory S. & Malinda M. Windham  
 Gross Family  
 H. Raymond Brannon Family in  
 Mathematics  
 H. Raymond Brannon Family in Physics  
 Hamilton M. Robertson  
 Hargett-Dunston  
 Hartwell Physics  
 Health Professions Development  
 Howard Earl Carr  
 J. C. & Sally K. Hawthorne Chemistry  
 J. C. & Sally K. Hawthorne Physics  
 Jack & Jane Brown  
 James Robert Burton  
 Jayna May Gillespie  
 Joanna Rush Rhoades Memorial  
 John G. & Tamara L. Trawick  
 John J. & Lillie R. Beggs  
 John W. & Rosemary K. Brown  
 John Winfield Scott  
 Joseph B. Sarver, Jr.  
 Leonel "Leo" Richard Felteau Memorial  
 LSAMP  
 Magen Kristen Nix Memorial  
 Margaret McNeal Arant Memorial  
 Marion & Kate Franklin  
 Michael S. Pindzola  
 Michelle A. Humphrey  
 National Science Foundation  
 Nektar Therapeutics/Dr. Curtis H. Ward  
 Memorial  
 Nellie Jane Hinson Memorial  
 NSF Mathematics  
 Olech  
 Patti Pridham  
 Paul Williamson Memorial  
 R. David & Roberta K. Byrum  
 Randolph County High School  
 Richard F. Ashford  
 Robert S. Fousek  
 Ryan F. Chandler Memorial  
 Ryding  
 Sallie Mae Phillips Memorial  
 Samuel H. Nichols, Jr. Memorial  
 Scott Vance  
 Society of Health Professionals  
 Society of Women  
 Stone Family  
 UAT-NSF-EPSCOR  
 Undergraduate Summer Research (CMB  
 Program)  
 Vulcan Materials  
 W. V. Parker  
 William P. & Konie O. Bryant  
 William R. & Fay Ireland

#### COLLEGE OF VETERINARY MEDICINE

Alabama Thoroughbred Association  
 Allen Heath Memorial  
 Astra & Poncet Davis  
 Avary Equine  
 B. T. Simms Memorial  
 Bethea McCall Memorial  
 Captain George Mobley  
 David Bond Haggard & Ann Haggard  
 Deborah Harrington Memorial  
 Decatur Alabama Kennel Club

Dorothy Weeks Captain Memorial  
 Dr. Bill Johnson Memorial  
 Dr. Charles "Charley" C. King, III  
 Dr. Charles Knecht  
 Dr. Everett S. Winters  
 Dr. G. J. Cottier  
 Dr. George Eason Memorial  
 Dr. George L. H. Weaver Memorial  
 Dr. George L.H. Weaver  
 Dr. George M. Johnson  
 Dr. Hilmer Jones  
 Dr. Karim Huneidi Memorial  
 Dr. Pat Teer  
 Dr. Ted Watson Bullard  
 Dr. Tom Blake Howle Memorial  
 Dr. Wilford S. Bailey  
 Eloise & Charles P. Johnston  
 Francesca B. Gaither Memorial  
 Francis J. Mulhern  
 Gary & Debra Beard  
 Gene & Jeanette Conway  
 Gene Pedneau  
 Guy Phelps, Sr.  
 Itty Witty  
 Ivan C. Frederickson  
 J. Warren Williams, Sr. D.V.M.  
 James L. & Nelle P. Moye  
 James O. Banks  
 Joe Bradley Memorial  
 Joseph Pitts Memorial  
 Ken Kelly  
 Kentucky Veterinary Medical Association  
 Kevin Bell & Shelby  
 Lance Bell & Judy Fee  
 Lauren Tonini Memorial  
 Leahman & Kathey Davidson  
 Lela Manor  
 Leon K. Robinson  
 Lewis & Donna Angarano  
 Lionel Stokes "Buddy" Appleby  
 M. K. Heath Memorial  
 Matthew D. Wiggins  
 Olaf Randall Burell  
 Pat Teer  
 Peyton Anderson  
 Quasi-Endowment Fund  
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 Red Banks Emergency Loan Fund  
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 Salsbury  
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 Stephen G. Allgood Memorial  
 Steven F. Swaim  
 Tom & Mary Anna Maddox Memorial  
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 Veterinary Medicine  
 Walter H. Burgess Memorial  
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 Willie Mae Person Butler  
 ZuPreem

# Student Services

## Housing and Residence Life

Auburn University offers on-campus housing accommodations for undergraduate students in three residential communities consisting of a total of 30 residence halls. The University does not have on-campus housing accommodations for graduate students. All residence halls are air-conditioned and are equipped with wireless Internet service. The halls are convenient to academic buildings, dining venues, recreational areas, laundry facilities, mailrooms, and the library.

The Hill and Quad communities are comprised of residence halls which are primarily configured in a suite arrangement, where two students share a room that is connected by a bathroom to another room shared by two students. There are a limited number of single rooms available. The Village Community residence halls are configured in “super suites,” where four students each have their own bedroom and share two bathrooms and a common area containing a kitchenette. There are a limited number of three bedroom and two bedroom, one bath units as well. For more details, including rental rates, please visit the Housing website at [www.auburn.edu/housing](http://www.auburn.edu/housing).

Housing for students with disabilities is available in all residential areas. Four residence halls in the Quad and one in the Village house Honors students. Students who are or will be members of the Honors College must specifically request an Honors hall on their housing application if they wish to be considered for reassignment to one of these halls. Students can also participate in a Living and Learning Community (LLC) related to their major or to a particular theme. Information about LLCs can be found on the Housing website.

Admission to Auburn University does not automatically include a room reservation, and first-year students are not guaranteed housing. Students may apply for University Housing after they are accepted to the University and they have submitted the confirmation deposit. Priority for housing requests is generally based upon the date the application is received. A \$50 non-refundable application fee and a \$250 refundable pre-payment are required with the housing application.

## Residential Staff

The residence halls are staffed with full-time professional and graduate and undergraduate-level staff. The staff undergoes an extensive training program and is responsible for offering cultural, recreational and educational activities. They also enforce University Housing regulations.

## Residence Life Involvement

Living on campus provides an “open door” to involvement in campus life. Through participation in Hall Council, RHA (Residence Hall Association) and other residence life activities, students encounter opportunities that can contribute to their personal and academic growth. All they need do is take advantage of all that residence life has to offer.

## Off-Campus Housing

Housing accommodations, such as apartments, duplexes, mobile homes, fraternity houses and privately owned dormitories are available in the greater Auburn-Opelika community. The university neither inspects nor approves any off-campus housing. A listing of off-campus housing facilities can be obtained at various on-campus locations including the Housing and Residence Life office. Off-campus housing information can be found on the AU Housing Web site: [www.auburn.edu/housing](http://www.auburn.edu/housing).

## Auburn University Dining Services

Tiger Dining is proud to partner with Auburn University to deliver the best dining services to students, faculty, staff and visitors of the Auburn University campus. Tiger Dining offers a wide selection of affordable, healthy, well-balanced meal options on campus.

The Auburn University Student Center finds faculty, staff and students enjoying a variety of dining options. Chef's Table offers a taste of home with its traditional style meals. Au Bon Pain offers everything from coffee and pastries to fresh salads, sandwiches and fruit. The Coyote Jack's experience provides southwest burgers, fries, onion rings & more. A full-service Starbucks meets the needs of Auburn University's coffee lovers. To satisfy an Italian appetite, Mamma Leone's has fresh pasta, pizza, and more. Chick-fil-A is right around the corner with its famous chicken

sandwiches and waffle fries. Need an extra toothbrush or some chips for a party? Outtakes' C-Store has those and more. Outtakes' C-Store also offers on-the-go options from wraps and salads to fresh coffee and pastries and especially Olo Sushi. The recent addition of Chef Yan Can Cook provides an authentic Asian experience with entrees and appetizers created by Chef Martin Yan.

Terrell Dining Hall, located on the “Hill” area of campus provides a choice of Habaneros Mexican meals, burgers and fries from the All Star Players Grill, a fresh salad from the salad bar, a home-style meal from Evolutions or even a hot toasted sandwich from Sub-Generation. At Terrell, you can even grab on-the-go snack items such as energy drinks, frozen entrees or muffins to take back up to your dorm room.

Haley's refreshment Center, on the first floor of the Haley Center, serves signature deli sandwiches and salads along with frozen fruit smoothies, breakfast items, Starbucks coffee and Daylight Donuts.

On the second floor main entrance of the library you can find a full service Caribou Coffee House with all of your favorite, coffee, teas, smoothies & more.

The “Lower Quad” offers an assortment of freshly-made bagels, made-to-order sandwiches, pizza subs, coffee, and pastry items with your choice of either Lupton Deli or Einstein Bros. Bagels. All of these dining facilities offer a unique dining experience to please the taste buds of faculty, staff, and both on- and off-campus students.

Just up the Hill from the Quad is an excellent grab & go venue called Drawing Board Café. It is conveniently located near the Dudley Hall library for the many architecture students or anyone passing through headed back to their dorms. At Drawing Board Café you will find a variety of breakfast items, fresh Starbucks coffee, Outtakes sandwiches, salads and wraps; snacks, bottled drinks, soup & more.

The opening of West View Dining at The Village in Fall 2009 has provided even more concepts and favorites to enhance the already wonderful Auburn University dining experience; Cub Stop c-store has Iees, nachos, bottled drinks & more; a full service Caribou Coffee house is there to wake you up in the mornings or afternoons; End Zone Diner is open until 2:00am; the food court has signature pizzas, melts, sandwiches and tossed salads; and Tiger Zone provides you with an all you care to eat experience for breakfast and dinner.

Foy Hall, War Eagle Food Court, will open in January 2010 with a mix of excellent concepts for an added dining experience. Craft your own salad by the ounce at Simply Salads. Enjoy down home country fare at The Southern Grill. Capitalizing on the fresh “Health-Mex” trend, Salsarita's combines a healthy lifestyle with your favorite Mexican foods. Mondo Subs offers your choice of quality meats & premium toppings, baked on gourmet breads.

Tiger Dining also has its own line of catering called Tiger Catering, to provide faculty, staff, and students with excellent options to enhance parties, meetings, weddings, special events, tailgating and more. For more information about the Tiger Dining experience, please visit <http://www.auburn.edu/dining>, or call 334-844-1234 to reserve your custom Tiger Catering experience.

## Required Participation Dining Plan

In Fall 2008, Auburn University implemented a required on-campus descending balance or debit dining program. This program is being phased in to all Auburn University main campus undergraduates over a four-year period. Once a student's incoming class participates in the program, the student is required to participate for every subsequent semester the student is enrolled at Auburn University. The required participation dining program enables its participating students to purchase meals, food, and dining services utilizing their student ID card, the Tiger Card, at all on-campus dining venues up to the dollar level of their required contributions. Presently, students residing in on-campus residence halls will be required to participate at a minimum level of \$995 per semester. All other participants will be required to participate at a minimum level of \$300. Each participating student's University account will be assessed the appropriate level at the same time tuition and fees are posted for the upcoming semester.

### TigerCard/Tiger Club Accounts

A Tiger Club Account provides a convenient means of making purchases on campus and at selected off-campus locations using the student's TigerCard. It can be used at bookstores, dining facilities, laundry and vending locations, copy centers, and other student services. The TigerCard is the students' official ID card. It is used at the Library, for door access on campus and may be required for other campus functions.

In order to make purchases using an AU TigerCard, an AU student first must establish a Tiger Club Account and deposit funds into that Account. Purchases will be debited from the available funds in the student's account. Cash withdrawals are not permitted and refunds may be made only on a closed account. Refunds will be transferred to the Office of Student Financial Services and applied to any debt owed Auburn University. The Office of Student Financial Services will refund any remaining balance to the student.

Applications for a Tiger Club Account must be made electronically at [www.auburn.edu/tigercard](http://www.auburn.edu/tigercard). Itemized statements are available for viewing online.

Additional information regarding Tiger Club Accounts may be obtained by contacting the TigerCard/Tiger Club Accounts Office located in the Student Center, Auburn University, AL 36849. Telephone: (334) 344-1220 or 1-877-345-2058. Web site: [www.auburn.edu/tigercard](http://www.auburn.edu/tigercard).

### Educational Support Services

Educational Support Services consists of three program areas that follow students from orientation as incoming freshmen to placement in a job upon graduation, with many developmental activities in between. The objective is to provide programs and activities that promote the academic, personal and career success of students that lead to higher retention and graduation rates of AU students. For assistance, visit [www.auburn.edu/academicsupport](http://www.auburn.edu/academicsupport).

**Freshman Year Experience and Students in Transition** provides programs to help the new student make the transition into Auburn University life. These programs promote intellectual and social development leading to personal and academic success. Camp War Eagle is Auburn's summer orientation experience for incoming freshmen and their parents. Successfully Orienting Students (SOS) is held for all new and transfer students who do not attend Camp War Eagle during the summer. For assistance, visit [www.auburn.edu/fye](http://www.auburn.edu/fye), or call (334) 844-4501.

**Academic Support Services** help AU students successfully achieve their academic goals. The Study Partners Program offers free tutoring services to AU students enrolled in selected undergraduate subjects. Supplemental Instruction provides peer-facilitated academic assistance in specific courses. Individual and group instruction are provided to students experiencing academic difficulty and to those who desire to improve their study skills. First Year academic courses acquaint students with resources and strategies for successful academic and personal learning experiences. Study Smart, a non-credit course, is also available for students in academic jeopardy. For assistance, visit [www.auburn.edu/academicsupport](http://www.auburn.edu/academicsupport), or call (334) 844-5972.

**Career Development Services** provides services and resources to help students choose an appropriate major, develop a personal career plan, learn job search skills, and find employment. Career Counselors/Advisors work with students regarding career planning issues by utilizing interest/personality inventories and career resources to help students learn how to maximize their career options through the development of a tailored career plan. Job search assistance is available to help students learn the skills necessary to plan and implement a successful job search. CDS also provides employment information through on-line job postings for full-time, part-time, and internship positions; on-campus interviews with potential employers; on-line resume referrals; and special career events. For assistance, call (334) 844-4744 or visit the CDS Web site at .

**Undergraduate Studies Academic Counseling and Advising Center**, housed in Cater Hall, is designed to assist students experiencing difficulty sustaining minimum academic standards for a specific major, identifying a major or career path, or simply adjusting to college life. The staff of the Cater Center is available to provide students with assistance in developing a personalized academic success plan and also provides advising services to students in the Interdisciplinary University Studies major. Typical hours of operation are Monday through Friday, 7:45 a.m. -

4:45 p.m. Students interested in seeking assistance from the Academic Counseling and Advising Center should contact their academic advisor, call (334) 844-7277 or contact [success@auburn.edu](mailto:success@auburn.edu).

### Division of Student Affairs

The mission of the Division of Student Affairs is to cultivate a supportive campus environment that engages students, advances learning, encourages leadership, and empowers students to impact the world. The Division encompasses a number of programs and services that support students both inside and outside the classroom. The Division of Student Affairs is comprised of the following departments, programs, and services.

The Office of Student Development Programs (SDP) provides a learning laboratory that enhances the academic mission of Auburn University by providing leadership opportunities for students. Housed within SDP are 10 Student Activity Projects (SAPs) which are student led organizations serving the needs of the students and the AU community, and are funded through student activity fees. Those SAPs are: *The Auburn Circle*, Black Student Union, Eagle Eye, *Glomerata*, IMPACT, International Student Organization, Student Government Association, *Tiger Cub*, University Program Council, and WEGL 91.1. Membership in all SAPs is open to any student enrolled at Auburn University. [www.auburn.edu/sdp](http://www.auburn.edu/sdp)

**The Auburn Circle** is Auburn University's literary/art/general interest magazine. It serves as a forum for the artists, writers, photographers, and designers of Auburn University. Our goal is that this publication will accurately represent the diverse talents and abilities of the Auburn community. The *Auburn Circle* is free to all students. Issues are published once every fall and spring. Students from all majors, alumni, faculty, staff, and supporters of Auburn University are invited to submit to *The Circle*. [www.auburn.edu/circle](http://www.auburn.edu/circle)

**The Black Student Union** upholds the following principles: To represent the interests and concerns of Black students at Auburn University; to bring together all aspects of Black student life for the purpose of improving the campus environment; encourages involvement of Black students in all campus activities; discourages and abates institutional and individual acts and symbols of racism; promotes the Auburn Spirit and tradition of excellence; heightens awareness and friendships between races. [www.auburn.edu/bsu](http://www.auburn.edu/bsu)

**Eagle Eye News** is a student television news organization. Each week during the fall and spring semesters, we produce a half-hour television news program that covers campus and area news. Everything about the show is entirely produced by students, and we're the only television news program in Alabama to do so. Our program is broadcast Monday - Friday at 10:00 am, 12:30 pm, and 7:00 pm on Auburn Campus Cable Channel 6 and in High Definition all day on Channel 6-1. Our LIVE show airs on this website and AU Cable 6 Monday nights at 7pm. (All times Central). [www.auburn.edu/eagleeye](http://www.auburn.edu/eagleeye)

**The Glomerata** is Auburn University's annually circulated yearbook. Every April, 12,000 copies of the 500+ page 'Gloom' are distributed to students, faculty, staff, and alumni. The *Gloom* holds the distinction of having one of the largest circulated student-produced publications in the country. It is also one of the top 5 largest yearbooks in the SEC. The *Gloom* serves to document the academic year in which it is produced; it includes photographs and stories about student life, athletics, faculty and administration achievements, the community, and organizations' activities. For more than 100 years, the *Gloom* has held all of Auburn's memories as the premier source for its history. [www.auburn.edu/gloom](http://www.auburn.edu/gloom)

**IMPACT** is Auburn University's central resource for volunteer opportunities and community service in the Auburn community. IMPACT provides students with the opportunity to volunteer throughout the week and special one-time volunteer opportunities. Students can work around their schedules and select from various volunteer opportunities. IMPACT is not a club that requires dues or meetings. There is no weekly commitment required - just come and volunteer when you can and as often as you would like. IMPACT also sponsors the Alternative Spring Break program. [www.auburn.edu/impact](http://www.auburn.edu/impact)

**The International Student Organization** works to improve multinational understanding and promote relationships between people of different cultures. The ISO also helps ease the process of adaptation for international students. We actively promote diversity and beneficial interaction between the international students and American Students. [www.auburn.edu/iso](http://www.auburn.edu/iso)

**Student Government Association** – Upon enrollment at Auburn University, each student becomes a member of the SGA, the official organization of the student body. The SGA is the voice of the students, promoting cooperation and communication with the faculty, administration, the Auburn City Council, and the state legislature. The SGA is organized into three branches. These include the executive, legislative, and judicial branch. The SGA Constitution and Code of Laws, published in the online version of the *Tiger Cub*, detail the guidelines by which the SGA functions. [www.auburn.edu/sga](http://www.auburn.edu/sga)

**The Tiger Cub** is Auburn University's student planner and handbook, and contains information pertaining to student organizations, activities, academic rules, and other information aimed at helping students adjust to college life. [www.auburn.edu/tigercub](http://www.auburn.edu/tigercub)

**The University Program Council** is Auburn University's student-led programming board. UPC consists of 11 committees that work hard to meet the programming interests of Auburn's students. These committees are responsible for organizing events such as free movies, comedians, major concerts, workshops, lectures, and cultural performances. All events are planned and produced for students by students. [www.auburn.edu/upc](http://www.auburn.edu/upc)

**WEGL 91.1** is Auburn University's student-run radio station striving to provide a wide range of music and information for the Auburn community. WEGL streams its broadcasts over the internet through its Web site. [www.auburn.edu/wegl](http://www.auburn.edu/wegl)

### Music, Theatre and Lectures

Classical concerts, touring productions by prominent theatre, music, and dance companies and ensembles, lectures by political figures, news commentators, specialists and prominent scholars, touring and resident exhibitions at the university's art museum and galleries, and a major motion picture series are among the special events featured each year at the university. Many of these activities are free.

The University Chamber Choir, Gospel Choir, University Singers, Men's Chorus, Women's Chorus, the Marching, Concert, and Symphonic Concert Bands, the University Symphony Orchestra, Opera Workshop and other specialized ensembles offer opportunities for those who want to perform in musical groups. Faculty, Guest Artists, many ensembles, and students present concerts throughout the academic year for university personnel and the community.

Auburn University Theatre produces a full season of exciting plays and musicals both on the main stage of the University Theatre and in the Theatre Upstairs. Auditions and participation in theatre productions are open to the entire university community. Admission to all AU Theatre productions is free to every Auburn student with a valid AU ID. The department is also home to one of the oldest student organizations on the Auburn campus, The Auburn University Players. Auburn University Theatre provides a great opportunity to participate in, and appreciate the performing arts.

The Auburn Studio of the Alabama Public Television Network produces programs which are seen throughout the state on the Alabama Educational Television network. WEGL-FM is the campus radio station, operated by students.

### Student Government Association

Upon enrollment at Auburn University, each student becomes a member of the Student Government Association (SGA), the official organization of the student body. The SGA is the voice of the students, promoting cooperation and communication with the faculty, administration, the Auburn City Council, and the state legislature. The SGA also promotes the social and academic life of Auburn students.

The SGA is organized into three branches. These include the executive, legislative, and judicial branch. The executive branch takes on many special projects for students and the community through the Executive Cabinet. The legislative branch, the SGA Senate, is made up of representatives from each school and/or college. The judicial branch interprets and makes final judgment on all decisions involving the Code of Laws. The Student Government Constitution and Code of Laws, published in the online version of the *Tiger Cub*, detail the guidelines by which the SGA functions.

### Organizations

Auburn University has more than 200 student organizations designed to maximize and enhance the Auburn experience. Students will find many opportunities to build friendships, enjoy rewarding experiences, and make lasting memories. Most of these organizations are open to any interested Auburn University student.

To view the most current list of student organizations visit the SGA Web site at: [www.auburn.edu/sga/organizations/](http://www.auburn.edu/sga/organizations/) and click on View the Current List of Organizations. View the list and see if there is an organization for you to get involved with here at Auburn. This Web page can also assist you in starting your own organization or learning the rules and guidelines by which current organizations are governed.

In addition, a list of all student organizations registered with the Student Government Association is available in the *Tiger Cub*. Additional rules and regulations are also available online by visiting the *Tiger Cub* Web site at: [www.auburn.edu/tigercub/](http://www.auburn.edu/tigercub/)

### Social Fraternities

The National Pan-Hellenic Council (NPHC) coordinates the activities of its member groups: Alpha Phi Alpha Fraternity, Inc., Omega Psi Phi Fraternity, Inc., and Phi Beta Sigma Fraternity, Inc.

The Interfraternity (IFC) Council coordinates the relationships among the member fraternities: Alpha Gamma Rho, Alpha Kappa Lambda, Alpha Psi, Beta Theta Pi, Chi Phi, Delta Chi, Delta Tau Delta, Delta Sigma Phi, FarmHouse, Kappa Alpha, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Psi, Phi Kappa Tau, Pi Kappa Alpha, Pi Kappa Phi, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Sigma Pi, Tau Kappa Epsilon, Theta Chi and Theta Xi.

### Social Sororities

The Panhellenic Council coordinates activities of its member groups: Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Omicron Pi, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Delta, Kappa Kappa Gamma, Phi Mu, Pi Beta Phi, Sigma Kappa and Zeta Tau Alpha.

The National Pan-Hellenic Council coordinates the activities of its member groups: Alpha Kappa Alpha Sorority, Inc., Delta Sigma Theta Sorority, Inc., and Zeta Phi Beta Sorority, Inc.

### Office of International Student Life

The Office of International Student Life is a unit of the Division of Student Affairs that has been established to help international students with admission to Auburn University, general guidance, advising and programming. This office coordinates and sponsors educational and social programs as well as events for international students such as a joint student orientation held every semester in conjunction with the Office of International Programs, the annual Peace Dinner, and the Auburn Friend Program. The World's Fair, one of our most popular events held every spring semester, gives international students a chance to display their culture and also helps all Auburn students and the community to learn more about and appreciate the diverse richness of other cultures. Through these and other programs, the Office of International Student Life focuses on helping international students to adjust to their new environment as well as promoting diversity on Auburn's campus and in the community.

For additional information, contact: 255 Heisman Dr., Rm 3126, AU Student Center (334)844-2353; e-mail: [orgenny@auburn.edu](mailto:orgenny@auburn.edu); or visit: [www.auburn.edu/international](http://www.auburn.edu/international).

### Student Health Services

Auburn University Medical Clinic is committed to providing a full range of primary care services for Auburn students including diagnostic services for illnesses and injuries, immediate and follow-up assessment and treatment for illnesses and preventative care services, including immunizations and women's health services. Services are provided on an appointment basis. Walk-ins will be evaluated and given appointments or seen immediately based on the urgency of the problem or condition. The facility includes laboratory, X-ray, and pharmacy. The clinical staff consists of fully licensed physicians, nurse practitioners, physician assistants, registered nurses, technicians and other support staff. Services are provided on a fee-for-service basis with on-site billing services provided

to students to facilitate insurance reimbursement. Major credit cards and Tiger Club are accepted and payment plans are available. Services are available to all Auburn students, spouses and dependents, faculty, staff, guests and visitors.

**Student Insurance.** The Student Government Association (SGA) sponsors an Accident and Sickness Insurance Plan, available to registered undergraduate and graduate students, spouses and dependents. The plan provides good coverage at reasonable premium rates. Coverage is provided for services at the Auburn University Medical Clinic, including physician visits, laboratory and X-ray services. An Insurance plan or its equivalent is required for all international students and recommended for all students. For information or issues regarding claims, call 1-800-237-0903. AUMC offers a 24/7 toll nurse line for all students, regardless of insurance coverage: 1-866-389-6770.

**Hours of Operation** - Monday 8 a.m.- 6 p.m.; Tuesday, Wednesday, Friday 8 a.m.- 6 p.m.; Thursday 9 a.m.- 6 p.m.; Saturday 8 a.m.- 12 p.m. (Hours subject to change). For an appointment, call (334) 844 -4416.

### Student Counseling Services

Student Counseling Services provide short-term individual and on-going group counseling to address the emotional/developmental concerns of students. Educational and academic-related, skill-building workshops are offered to the campus community. Safe Harbor provides sexual assault/violence counseling services for victims. Students needing long-term psychotherapy or 24-hour crisis management are provided an appropriate referral. For assistance, call (334) 844-5123 or visit [www.auburn.edu/scs](http://www.auburn.edu/scs).

### Special Clinics

The Speech and Hearing Clinic of the Department of Communication Disorders, primarily a teaching facility, provides service for students with speech, hearing or language problems. These services may involve both diagnoses and treatment of problems.

### Other Student Services

The Auburn University Bookstore, located in Haley Center, is a full-service college store dedicated to serving the Auburn campus community. The mission of the store is to enhance the academic experience of the Auburn University student, promote the Auburn Spirit and provide a memorable shopping experience for each and every person who enters the store. In addition to textbooks and supplies, the AU Bookstore offers:

- A full-service General Book Department;
- Technology service and educational pricing on technology products;
- Special order services for general books as well as school and office supplies;
- UPS shipping service, copy service, fax service, postage stamps and bookstore gift cards;
- Online textbook reservation and shopping at [aubookstore.com](http://aubookstore.com); and
- Auburn gifts, apparel, novelties and Alumni merchandise, including diploma frames

All revenue from the AU Bookstore is returned to Auburn University, making it a great way for students, faculty, staff and alumni to show their support for Auburn University.

**James E. Martin Aquatics Center.** This facility provides two swimming pools for use by Health and Human Performance classes, intercollegiate athletics, intramural and club sports, students, faculty, staff, and community members. Programs and events are planned and staffed to provide a healthy and safe aquatic environment. For information regarding programs and hours of operation, call (334) 844-4182.

### Parking Permit Registration

It is the responsibility of students and employees of Auburn University operating a vehicle on campus to register for and display a parking permit as prescribed in the Auburn University Parking and Traffic Regulations.

Parking permits are valid for one year beginning Sept. 1 and ending Aug. 31 of the next year. The registration period for employees is between Aug. 1 and Aug. 31. Registration during this period is conducted online. Normal registration for students occurs between Aug. 1 and Aug. 31, as well as between terms and before classes begin.

Permit registration is conducted by the Parking Services Office. Employees should register online and pay via payroll deduction with pretax dollars. Parking Services will return by mail the appropriate hang tag permit. All students must register for a parking permit online and secure their permits at the Auburn University Parking and Traffic Service Office or other designated location (such as the coliseum). Please note that a decision is pending regarding the mailing of permits directly to student's homes. Office hours for permit registration are 7:45 a.m. - 4:45 p.m., Monday through Friday. Student permit registration payments and fine payments are made at the Office of Student Financial Services, Martin Hall.

**Service Vehicles.** Vehicles with Alabama state government tags and service decals must adhere to all university traffic and parking rules and regulations pertaining to motor vehicles and may park in designated Service Vehicle, A, B, C, D, and R zones, as well as in Loading Zones for a period not to exceed 30 minutes. Those without Service Decals are not permitted to park on core campus (See Parking Regulations Map) between 7 a.m. and 5 p.m. Monday through Friday.

# School and College Curricula

This section of the bulletin lists the schools and colleges alphabetically and provides information about curricula within them as well as general descriptions of interdepartmental and interdisciplinary curricula and ROTC programs. Information about most college and school undergraduate admission, retention and graduation standards as well as other information about the college or school is also provided here. Each undergraduate academic program offered by a school or college is presented in a curriculum model with required and elective courses listed in a possible semester-by-semester sequence. These models are provided as guides to help students and advisers plan the individual student's course of study. Students should realize, however, that it might not be possible to schedule every course in the year and semester as presented. Careful planning with the help of an academic advisor is usually necessary if students are to complete their programs in a timely manner and meet all course pre-requisites.

All undergraduate curricula can accommodate six hours of ROTC; military science courses may be taken in place of electives, and in some curricula, with permission, in place of certain required courses.

## Interdepartmental and Interdisciplinary Curricula

### Biosystems Engineering (BSEN)

The curriculum in biosystems engineering is coordinated by the Samuel Ginn College of Engineering. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information.

### Ecological Engineering (ECOE)

The curriculum in ecological engineering is coordinated by the Samuel Ginn College of Engineering and prepares students to solve environmental problems by using engineering knowledge with natural ecological and biological principles. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information.

### Environmental Science (ENVI)

The curriculum in environmental science is an interdepartmental program based on the strengths of Auburn University in the engineering, biological and physical sciences. See the Department of Civil Engineering in the Samuel Ginn College of Engineering for further information.

### Forest Engineering (FOEN)

The School of Forestry and the Samuel Ginn College of Engineering coordinate the curriculum in forest engineering. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information.

## Interdisciplinary University Studies (IDSC)

The bachelor of science in interdisciplinary university studies allows students to attain a broad education and acquire diverse skill sets unique to a profession they desire. Students seeking an Interdisciplinary University Studies degree have the opportunity to create a personalized academic program, by customizing a curriculum that demonstrates proficiency in broad skills as well as discipline-specific knowledge.

All students in this major must earn a grade of C or better in UNIV 2190 (Foundations of Interdisciplinary University Studies) and in three supporting courses: one in oral communication, one in computer competence, and one in written communication above ENGL 1120. Finally, all students must complete a capstone experience (UNIV 4980). In the Foundations course, students learn about interdisciplinary studies in general and also begin to craft their individualized degree plan; and in the capstone experience, students integrate their acquired knowledge through a research project, service learning project, or an internship program.

For their major courses, students select two or three areas of concentration from two or three different Schools or Colleges, and take 18 credit hours (two concentrations) or 12 credit hours (three concentrations) within each concentration for a total of 36 credit hours in the major. Of these 36 hours, at least 20 hours must be at the 3000-level or higher. Within a particular concentration, at least 12 out of the 18 hours (for

two concentrations) or 9 out of the 12 hours (for three concentrations) must be from courses offered by that College or School. The remaining courses may be chosen from closely related courses in another College or School. Courses in the major that are outside the College or School of the concentration areas must be at the 3000-level or higher.

Admission is determined by application. For admission, students must first complete UNIV 2190 with a grade of C or better, and must also complete a program application that includes a goal statement and an approved individualized plan of study. Approval for each concentration will come from the appropriate faculty advisor, program director, or department head. Approval for the entire degree plan must be obtained from a faculty mentor, identified by the student. An Interdisciplinary degree faculty mentor must be a full-time member of the Auburn University faculty with a rank of Assistant, Associate, or Full Professor. For admission into the major, students must have an overall Auburn University GPA of 2.0 or higher, or a GPA of 2.2 or higher on the most recent semester's coursework at Auburn University. Additional information about the major can be found at [http://www.auburn.edu/academic/provost/undergrad\\_studies/IDSC](http://www.auburn.edu/academic/provost/undergrad_studies/IDSC).

		Interdisciplinary University Studies (IDSC)			
FR	F	S	F	S	
ENGL	1100		English Composition I .....	3	
HIST	1210		Technology & Civilization Ia.....	3	
			Core Math .....	3	
			Core Science 1 .....	4	
COMP	1000		Personal Computer Applicationsb,c .....	2	
ENGL	1120		English Composition II .....	3	
HIST	1220		Technology & Civilization IIa.....	3	
			Core Philosophy .....	3	
			Core Science 2.....	4	
			Core Fine arts .....	3	
			<b>15</b>	<b>16</b>	
<b>SO</b>					
ENGL	2200		World Literature I.....	3	
			Core Social Science, area 1 .....	3	
UNIV	2190		Foundations Interdisc Univ Studiesb .....	3	
COMM	1000		Public Speakingb,c .....	3	
			Elective or Supporting Hours .....	3	
ENGL	2210		World Literature II .....	3	
			Core Social Science, area 2 .....	3	
			<b>Concentration hours (M)d .....</b>	<b>6</b>	
			Elective or Supporting Hours .....	3	
			<b>15</b>	<b>15</b>	
<b>JR</b>					
			<b>Concentration Hours (M)d .....</b>	<b>6</b>	
ENGL	3080		Business Writing or		
ENGL	3040		Technical Writing or		
ENGL	4000		Advanced Compositionb .....	3	
			Elective or Supporting Hours .....	6	
			<b>Concentration Hours (M)d .....</b>	<b>6</b>	
			Elective or Supporting Hours .....	8	
			<b>15</b>	<b>14</b>	
<b>SR</b>					
			<b>Concentration Hours (M)d .....</b>	<b>12</b>	
			Elective or Supporting Hours .....	3	
			<b>Concentration Hours(M)d .....</b>	<b>6</b>	
UNIV	4980		Interdisciplinary Capstone Exp b .....	3	
			Elective or Supporting Hours .....	6	
			<b>15</b>	<b>15</b>	

### TOTAL - 120 SEMESTER HOURS

"Courses in the Major" are in **bold** print and designated (M) (36 credit hours; used to calculate "GPA in the Major")

- HIST 1010 & 1020 (World History I & II) may be selected.
- Must have grade of C or better.
- Alternative courses may be approved to meet the objectives for computer competence and oral communication
- Total of 36 hours selected across two concentrations, each with 18 hours, or across three concentrations, each with 12 hours. Concentrations must be selected from at least two different Schools or Colleges. Approval of the appropriate faculty advisor, program director, or department chair for courses in each concentration is required. Approval of a faculty mentor for the entire degree plan is required.

## Materials Engineering (MATL)

The curriculum in materials engineering is an interdisciplinary curriculum conducted cooperatively by departments in the Samuel Ginn College of Engineering and the College of Sciences and Mathematics. See the Department of Mechanical Engineering in the Samuel Ginn College of Engineering for further information.

## Interdepartmental and Interdisciplinary Courses and Minors

### Statistics

While graduate degrees in statistics are offered through the Department of Mathematics and Statistics in the College of Sciences and Mathematics, courses in statistics, both general introductory courses and those treating the application of statistics to specific disciplines or problems, are offered through the cooperation of many departments and colleges throughout the university. Students interested in receiving training in statistics to support their degree program should consult their advisor and the listing of statistics courses in the "Courses of Instruction" section of this bulletin, under the heading "STAT."

#### UNDERGRADUATE STATISTICS MINOR

15 semester hours in minor

<b>Courses required</b>		<b>Cr. Hr.</b>
STAT 3600	Probability & Statistics I .....	3
STAT 3610	Probability & Statistics II.....	3
OR		
STAT 3010	Statistics for Engr & Scientists .....	3
STAT 4020	Intermediate Statistical Methods.....	3
<b>9 Hours from Elective Course:</b>		
STAT 4610	Applied Regression Analysis .....	3
STAT 4620	Applied Nonparametric Statistics.....	3
STAT 4630	Applied Time-Series Analysis .....	3
STAT 5110	SAS Programming .....	3
STAT 5630	Sample Survey, Design & Analysis .....	3

### Biochemistry

While degrees in chemistry/biochemistry are offered through the Department of Chemistry and Biochemistry in the College of Sciences and Mathematics, courses in bio-chemistry, required in or relevant to many degree programs, are offered through the cooperation of many departments and colleges throughout the university. Students interested in training in biochemistry to support their degree program should consult their advisor and the listing of biochemistry courses in the "Courses of Instruction" section of this bulletin, under the heading "BCHE."

### Molecular Biology

While degrees in microbial, cellular, and molecular biology, as well as some undergraduate courses, are offered through the Department of Biological Sciences in the College of Sciences and Mathematics, graduate courses in molecular biology, required in or relevant to many degree programs, are offered through the cooperation of many departments and colleges throughout the university. Students interested in graduate-level training in molecular biology should consult their advisor and the listing of molecular biology courses in the "Courses of Instruction" section of this bulletin, under the heading "CMBL."

#### MINOR IN SUSTAINABILITY STUDIES

15 semester Hours in minor (minimum 9 hours at 3000-level or above)

<b>Courses required</b>		<b>Cr. Hr.</b>
SUST 2000	Introduction to Sustainability.....	3
SUST 5000	Sustainability Capstone.....	3

Approved electives, see Office of Sustainability Web site for listing. [www.auburn.edu/sustainability](http://www.auburn.edu/sustainability).

### Minor in Leadership

Auburn University offers an Interdisciplinary Leadership Minor (ILM). In order to pursue a minor in leadership, students should file a Plan of Study, in consultation with the ILM advisor/coordinator as early as possible. The Plan of Study is ideally completed within the first semester of taking courses toward the minor. The completion and filing of the Plan of Study is a prerequisite to enrolling in the senior capstone class in the ILM. Courses

required in the student's major may not be counted toward the minor even if they are on the list of accepted courses. Courses counted toward Core Curriculum requirements may not be counted toward the minor. At least 3 hours must be taken from each of six competency areas, with 9 of the 12 hours at the 3000 level or above. The competency areas are: I. Leadership Knowledge and Theory, II. Interpersonal Skills, III. Communication--Oral, Written and Interpersonal, IV. Problem Solving and Decision Making, V. Vision of Civic and Social Responsibility, and VI. Service Learning.

18 semester Hours in minor (minimum 9 hours at 3000-level or above)

<b>Courses required</b>		<b>Cr. Hr.</b>
<b>Leadership Knowledge and Theory, 3 hours</b>		
UNIV 2000	Foundations of Leadership .....	3
<b>Service Learning, 3 hours</b>		
UNIV 4000	Leadership in Practice.....	3
<b>Interpersonal Skills, Select 3 hours</b>		
MNGT 3460	Organizational Behavior .....	3
POLI 3340	Introduction to Conflict Resolution.....	3
POLI 5340	Practice of Mediation .....	3
PSYC 3580	Social Psychology .....	3
COMM 1000	Public Speaking .....	3
COMM 2400	Communication in Organizations .....	3
AGRI 5840	Advance Agricultural Leadership Development .....	3
<b>Communication, Select 3 hours</b>		
COMM 1000	Public Speaking.....	3
COMM 2400	Communication in Organizations .....	3
COMM 2410	Small Group Communication .....	3
COMM 3450	Intercultural Communication .....	3
COMM 3100	Speaking Before Audiences .....	3
<b>Problem Solving and Decision Making, Select 3 hours</b>		
PHIL 3660	Applied Ethics.....	3
POLI 3340	Introduction to Conflict Resolution .....	3
POLI 5340	Practice of Mediation .....	3
MNGT 3100	Principles of Management .....	3
MNGT 3910	Foundations of Management .....	3
<b>Civic and Social Responsibility, Select 3 hours</b>		
SOCY 1000	Sociology: Global Perspective .....	3
SOCY 2200	Social Psychology .....	3
SOCY 3500	Minority Groups .....	3
POLI 3090	Introduction to International Relations .....	3
POLI 3100	Introduction to World Affairs .....	3
POLI 3290	The American Presidency .....	3
POLI 4050	American Local Government.....	3
POLI 5610	Women in Politics .....	3
POLI 5620	African American Politics .....	3
SOCY 2000	Social Issues .....	3
SOCY 3500	Minority Groups .....	3
RSOC 3620	Community Organization .....	3
HDFS 4300	Family and Social Policy .....	3
ANSC 4800	Issues in Agric. (2) and ANSC 4970 Special Problems(1).....	3

### Women's Studies

Women's studies, an interdisciplinary minor, advances teaching, research and scholarship about women and women's perspectives. The minor sheds new light on existing knowledge of women and gender, integrates the study and voices of women into traditional disciplines, examines the impact of the social construction of gender and promotes change to improve women's, men's and children's lives.

Eighteen semester hours in minor (minimum 9 hours at 3000-level or above).

<b>Courses required</b>		<b>Cr. Hr.</b>
WMST 2100	Introduction to Women's Studies .....	3
WMST 5980	Feminist Theory (capstone course) .....	3

Different instructors teach many courses listed in the minor. Students are required to check with the program director or a women's studies advisor prior to registering regarding course content.

# College of Agriculture

W.D. Batchelor, *Dean*  
P.M. PATTERSON, *Associate Dean*

THE COLLEGE OF AGRICULTURE prepares its students for careers in the agricultural sector and related professions as well as admission to graduate school, law, and health related professional schools, and favors success in whatever field they choose. With a strong emphasis in living science, challenging science-based curricula prepare graduates for a variety of opportunities throughout a global food, agricultural and natural resource system. Graduates are prepared to become productive global citizens and prepared to address challenges of providing an abundant, safe, affordable food, fiber and renewable bio-energy system while protecting environmental and water resources. Courses provide foundational knowledge in contemporary science and culturally relevant subject areas. Many of the basic science courses taken in the freshman and sophomore years serve as a foundation for additional basic and applied coursework in a specific major during the junior and senior year. The college's friendly atmosphere fosters strong academic, engaged learning environments and student development around life-skills and international issues.

Curricula are offered in agricultural business and economics, agricultural communications, agronomy and soils, animal sciences, fisheries and allied aquacultures, horticulture and poultry science. The College of Agriculture also furnishes the subject matter training in agriculture for the curricula of biosystems engineering and agriscience education

Employment opportunities for graduates with expertise gained in the majors are expected to remain strong. Possible careers include: agricultural economists, agricultural engineers, agronomists, animal nutritionists, aquaculturalists, biochemists, biological engineers, biometricians, botanists, business managers, cell biologists, climatologists, educators, extension specialists, entomologists, environmental scientists, farm services, fisheries scientists, florists, food systems and safety workers, golf course horticulturalists, poultry scientists, molecular biologists, plant pathologists, plant physiologists, quality assurance workers, rural sociologists, science writers, soil scientists, toxicologists, turf scientist / specialists, plant scientists and many more.

Transfer credits for agricultural subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit; however, duplication of credit will not be allowed. Equivalence of agricultural subjects will be determined by the Dean's Office; however, students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the academic dean of Agriculture in the first term of enrollment in the College of Agriculture at Auburn and the examinations must be completed before the middle of the second term. Transfer credit for courses which are upper-division courses at AU will not be accepted from two-year colleges.

## Pre-Veterinary Medicine and Pre-Professional

Curricula within the college enable students to be advised to complete requirements for admission to health related professional schools. It is possible to gain admission to colleges of veterinary medicine or other health related professional schools after a student's third year of undergraduate studies. If students are admitted to a college of veterinary medicine or other professional program after the completion of their third year, they may obtain a bachelor of science degree in their selected degree program after successful completion of their first year in a college of veterinary medicine or other professional degree program. The specific graduation requirements may be obtained from a program advisor or academic advisor for the college. The minimum requirements for admission to most colleges of veterinary medicine and other professional programs are incorporated in the first three years of the options listed under the following curricula: animal sciences, fisheries and allied aquacultures and poultry science. (See also the curriculum in Pre-Veterinary Medicine in the College of Science and Mathematics and School of Forestry and Wildlife Sciences).

## Dual-Degree Program with Engineering

This program gives students the opportunity to receive two baccalaureate degrees - one in agriculture and one in engineering. Although the program was developed primarily for students desiring a combination of a biological sciences program with an engineering

program, it does not preclude the consideration of other Agriculture-Engineering combinations.

In general, students will be enrolled in the College of Agriculture for approximately three years and in the Samuel Ginn College of Engineering for approximately two years. During the first three years, the students, should take those mathematics, physics and chemistry courses necessary to allow them to transfer to the Samuel Ginn College of Engineering. Additionally, before transferring to the Samuel Ginn College of Engineering, they should have completed approximately three-fourths of the total hours required by the College of Agriculture for the awarding of the degree.

To become dual-degree candidates under this program, students must have GPAs which indicate the likelihood of satisfactory completion of Samuel Ginn College of Engineering degree requirements and recommendation from the dean of the College of Agriculture. The recommendation should be sought one term before the expected transfer to the Samuel Ginn College of Engineering.

It is also possible for qualified students to transfer to the Samuel Ginn College of Engineering following the junior year with the intent of seeking a master's degree rather than a bachelor's degree in one of the engineering disciplines. Consult the Engineering Dean's Office concerning this option.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Minors

### Agribusiness Minor

18 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
ACCT	2910	Fundamentals of Accounting .....3
AGEC	4040	Agricultural Finance .....3
AGEC	4000	Principles of Agribusiness Mngt .....OR
AGEC	5010	Farm Management .....OR
AGEC	5100	Agribusiness Management .....3
Elective Courses - See advisor for approved course listing.		

### Agronomy and Soils Minor

17 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
AGRN	1000	Basic Crop Science .....4
AGRN	2040	Basic Soil Science .....4
Elective Courses - See advisor for approved course listing.		

### Animal Sciences Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
ANSC	1000	Introduction to Animal Sciences.....4
Elective Courses - See advisor for approved course listing.		

### Entomology Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
ENTM	3040	General Entomology .....4
Elective Courses - See advisor for approved course listing.		

### Fisheries and Allied Aquacultures Minor

Junior (03) classification is required

15 semester hours in minor (minimum 12 hours at 4000-level or above)

Select from the following courses		Cr. Hr.
FISH	3950	Seminar (Jr. Standing).....1
FISH	5210	Principles of Aquaculture .....3
FISH	5220	Water Science .....3
FISH	5240	Hatchery Management .....4
FISH	5250	Aquaculture Production .....4
FISH	5320	Limnology .....4
FISH	5440	Fish Anatomy and Physiology .....4
FISH	5630	Facilities for Aquaculture .....3
FISH	5380	Ichthyology .....4
FISH	5410	Introduction to Fish Health .....2
FISH	5510	Fisheries Biology and Management .....3
FISH	5520	Management of Small Impoundments .....3
FISH	5670	Fisheries Extension.....2
FISH	5970	Aquatic Microbiology.....3



College of Agriculture

**Agricultural Leadership Studies Minor**

18 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
AGRI 3800	Agricultural Leadership Development	2
AGRI 5840	Adv. Agricultural Leadership Development	3
ANSC 4800	Issues in Agriculture	2
POLI 2100	State and Local Government	3
Elective Courses - See advisor for approved course listing.		

**Natural Resources Economics and Environmental Policy Minor**

15 semester hours in minor (minimum 12 hours at 3000-level or above)

Group A (Select 9 hours):

Courses required		Cr. Hr.
AGEC 5090	Resource Economics I	3
ECON 5200	Urban and Reg Econ Dev	3
RSOC 5650	Soc Nat Res & Envir	3
GEOG 5830	Geog Information Systems	4

Group B (Select 6 hours):

Courses required		Cr. Hr.
AGEC 4300	Ag Policy & Trade	3
AGEC 4120	Envir & Nat Res Econ	3
FORY 3440	Environmental Law	3
FORY 5310	Intro to Envir Ethics	3

**Plant Pathology Minor**

15 semester hours in minor

Courses required		Cr. Hr.
PLPA 3000	General Plant Pathology	4
Elective Courses - See advisor for approved course listing.		

**Poultry Science Minor**

15 semester hours in minor (minimum 12 hours at 3000-level or above)

Courses required		Cr. Hr.
POUL 1000	Introductory Poultry Science	3
POUL 3030	Commerical Poultry Production	4
Elective Courses - See advisor for approved course listing.		

**Rural and Community Development Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
RSOC 3620	Community Organization	3
SOCY 3700	Methods of Social Research	3
Elective Courses - See advisor for approved course listing.		

**Agricultural Business and Economics (AGEC)**

The curriculum provides broad technical training and a strong liberal arts and business background to prepare students for careers in a wide array of agribusiness and related fields.

Students are encouraged to use professional electives to complete a minor from the College of Agriculture, the College of Business the College of Sciences and Mathematics or the School of Forestry and Wildlife Sciences or in Economics in the College of Liberal Arts. Otherwise, students may follow a general program by selecting from courses at the 3000-level or higher in the College of Agriculture, the College of Business, College of Mathematics and Sciences or the School of Forestry and Wildlife, as well as offerings at the 3000 level or better in Economics, Sociology, Anthropology, Geography, Political Science, or Statistics. Basic Soil Science (AGRN 2040) may also be counted as a professional elective, as may up to 8 hours of a foreign language, regardless of the level. Students are encouraged to see their advisors to plan their professional electives around an interest area that best meets their career aspirations.

**Curriculum in Agricultural Business & Economics**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
HIST	1210	1220	Technology & Civilization I & II	3	3
MATH	1680	1690	Calculus w/Business Applications I & II	4	3
SOCY	1000		Sociology: Global Perspective	3	**
			Core Fine Arts	3	**
COMP		1000	Personal Computer Applications	**	2
ECON		2020	Principles of Microeconomics	**	3
				<b>16</b>	<b>14</b>
<b>SO</b>					
BIOL	1020		Principles of Biology & Lab (1021)	4	**
BIOL		1030	Organismal Biology & Lab (1031)	**	4
<b>ECON</b>	<b>2030</b>		<b>Principles of Macroeconomics</b>	<b>3</b>	<b>**</b>
ENGL	2200	2210	World Literature I & II	3	3
PHIL			1020 Ethics or 1040 Business Ethics	3	**
ACCT	2110	2210	Financial & Managerial Accounting	3	3
STAT		2610	Statistics for Bus & Economics OR	**	3
STAT		2510	Statistics for Biology & Health Sci	**	**

STAT	2010	Statistics for Social and Behavior Sciences	**	**
COMM	1000	Public Speaking	**	3
			<b>16</b>	<b>16</b>
<b>JR</b>				
<b>ECON</b>	<b>3020</b>	<b>Intermediate Microeconomics</b>	<b>3</b>	<b>**</b>
ENGL	3080	Business Writing	3	**
<b>AGEC</b>	<b>4040</b>	<b>Agribusiness Finance</b>	<b>3</b>	<b>**</b>
		Agricultural Elective	4	4
		Elective	2	4
<b>AGEC</b>	<b>3010</b>	<b>Agricultural Marketing</b>	<b>**</b>	<b>3</b>
<b>AGEC</b>	<b>4950</b>	<b>Undergraduate Seminar</b>	<b>**</b>	<b>0</b>
		Professional Elective	**	4
			<b>15</b>	<b>15</b>
<b>SR</b>				
<b>AGEC</b>	<b>4070</b>	<b>Agricultural Law</b>	<b>3</b>	<b>**</b>
<b>AGEC</b>	<b>5100</b>	<b>Agribusiness Management</b>	<b>3</b>	<b>**</b>
<b>AGEC</b>	<b>5090</b>	<b>Resource Economics I</b>	<b>3</b>	<b>**</b>
		Professional Elective	5	5
<b>AGEC</b>	<b>5030</b>	<b>Agricultural Prices</b>	<b>**</b>	<b>3</b>
<b>AGEC</b>	<b>4300</b>	<b>Agricultural Trade &amp; Policy</b>	<b>**</b>	<b>3</b>
<b>AGEC</b>	<b>5010</b>	<b>Farm Management</b>	<b>**</b>	<b>3</b>
UNIV	4AA0	AG1 Undergraduate Graduation	**	0
			<b>14</b>	<b>14</b>

**TOTAL HOURS - 120**

Agricultural and Professional Electives: see advisor for approved list.

**Agricultural Communications (AGCO)**

The Agricultural Communications program is designed to produce graduates who possess exceptional communication skills meshed with a strong science-based background in agriculture and natural resources. This degree enables graduates to communicate vital information related to science, agriculture, natural resources, food and the environment to diverse audiences. Agricultural Communications graduates are prepared to work in a variety of jobs ranging from photography, writing, editing, radio and television broadcasting and Web development to public relations, marketing, sales, advertising and communication management. The program also prepares students for graduate and professional schools, including law school.

Goals are to develop proficient communicators who 1) promote a broader understanding of agriculture, natural resources, the environment and science among a diverse and global citizenry; 2) recognize and exercise with integrity, their potential as catalysts for using information technologies and knowledge to improve the quality of life for others; 3) possess a thorough understanding of the important social, scientific, economic and environmental concepts and issues that relate to agriculture and natural resources; and 4) apply critical thinking skills to understand and explain complex agricultural and environmental issues and their implication on local, national and international levels.

The curriculum provides systematic study and development of skills in all forms of effective communication, writing, speaking, journalism, emerging social media, public relations, leadership, photography, electronic media, instructional design, graphic and Web design, information technology, publishing, research and marketing. Prepared with a foundation of biological, chemical sciences and strongly science-based agricultural science and economic courses, AGCO graduates are highly sought after for careers that extend knowledge about agriculture, natural resources and life and human sciences to people worldwide. Students may choose to pursue a variety of specialty areas – from journalism and public relations to television and broadcast and other communication specialty areas. Opportunities for portfolio development within the degree program are extensive through internship and practicum classes and through the student organization Agricultural Communicators of Tomorrow.

Possible careers include: writers, photographers, graphic designers, Web developers and managers, videographers, electronic/digital media producers, marketing specialists, public relations practitioners, publishers, researchers, distance education specialists, overseas development workers, extension educators and managers and editors of magazines and other printed or online news venues. Graduates work throughout corporate America, institutions of higher learning, government agencies, medical technology operations, lobbyist and advocacy groups, non-profits and research organizations in the public and private sector. This combination of technical subject matter knowledge and communication skills is not found in other curricula.

College of Agriculture

Curriculum in Agricultural Communications

FR	F	S	F	S
BIOL	1020		Principles of Biology & Lab (1021).....	4 **
BIOL		1030	Organismal Biology & Lab (1031) .....	** 4
ENGL	1100	1120	English Composition I & II.....	3 3
MATH	1130		Pre-Calculus with Trigonometry .....	3 **
COMM	1000		Public Speaking .....	3 **
AGRI		1080	Intro Ag Comm & Leadership .....	** 3
			Core History.....	3 3
			Core Social Science I .....	** 3
				16 16
SO				
CHEM	1010		Survey of Chemistry .....	3 **
CHEM	1011		Survey of Chemistry Lab .....	1 **
			ENGL Core Literature .....	3 3
JRNL	1100		Newspaper Fundamental.....	3 *
			Core Fine Arts.....	3 **
COMM		3500	Fdn of Human Communication .....	** 3
			Ag Elective .....	** 3
			Ag Group I:	
			POUL 1000 Intro to Poul Science OR	
			ANSC 1000 Intro to Animal Science .....	3-4 **
			Support Courses in Track.....	** 4
				16-17 13
JR				
COMM	3600		Fdn Rhetoric&Soc Infl.....	3 **
RTVF		3300	Fdn of Mass Communications .....	** 3
AGEC		3010	Agric. Marketing OR	
AGEC		4000	Prin. Of Agribus Mgmt .....	** 3
			Supporting Courses in track .....	3 3
COMP	1000		Computer Applications* .....	2 **
			Ag Group II:	
			HORT 2020 Hort Crop Prod OR	
			HORT 2210 Landscape Garden. OR	
			AGRN 1000 Basic Crop Sci OR	
			AGRN 2040 Basic Soil Sci OR	
			ENTM 2040 Insects OR	
			PLPA 2000 Pests, Pathogens, Parasites and People .....	4 3-4
ECON	2020		Princ. Microeconomics**.....	3 **
			(* Counts as Core Social Sci Gr II)	
			Core Philosophy.....	** 3
				15 15-16
SUMMER				
AGRI		4920	Internship .....	3 **
SR				
PRCM	3040		Found of Public Relations .....	3 **
			Supporting Courses in selected track.....	9 9
			Ag Elective .....	2 **
AGEC		4070	Agricultural Law .....	** 3
			Free Elective .....	** 1-3
UNIV		4AA0	AG1 Undergraduate Graduation .....	** 0
				14 13-15

TOTAL HOURS - 122

\* Students will be expected to have proficiency in microcomputer applications and may take a class commensurate with level of proficiency or take Comp 1AA0 Competency Test.

Agronomy and Soils (AGRN)

Courses prepare Agronomy graduates for: (1) turfgrass industry, (2) chemical industry, producers of fertilizers, herbicides and other agricultural chemicals; (3) farm-advisory agencies such as soil testing laboratories and other private consultants; (4) public farm-advisory agencies such as the Agricultural Extension System or the Natural Resources Conservation Service; (5) research agencies of corporations, U.S. Department of Agriculture, colleges and universities and Agricultural Experiment Stations; (6) farming and (7) environmental agencies.

Curriculum in Agronomy & Soils - Production Track

FR	F	S	F	S
BIOL	1020		Principles of Biology & Lab (1021) .....	4 **
BIOL		1030	Organismal Biology & Lab (1031) .....	** 4
CHEM	1030	1040	Fundamentals Chemistry I & II .....	3 3
CHEM	1031	1041	Fundamentals Chemistry I & II Lab .....	1 1
ENGL		1100	English Composition I .....	** 3
MATH	1130	1610	Math .....	3 4
AGRN	1000		Basic Crop Science .....	4 **
			Elective.....	1 **
				16 15
SO				
ENGL	1120		English Composition II .....	3 **
ENGL		2200	World Literature I .....	** 3
HIST	1210	1220	Technology & Civilization I & II .....	3 3
			Core Social Science Group I .....	** 3
			Core Fine Art .....	** 3
ACCT	2810		Fundamentals of Accounting Princ.....	3 **
STAT	2510		Statistics for Biological Sciences.....	3 **

CHEM	2030		Organic Chemistry.....	** 3
AGRN	2040		Basic Soil Science .....	4 **
				16 15
JR				
ECON	2020		Microeconomics.....	3 **
ENGL	2210		World Literature II .....	3 **
AGRN		5020	Nutrient Management.....	** 3
BIOL	3100		Plant Biology .....	3 **
BIOL	3101		Plant Biology Lab .....	1 **
PLPA		3000	General Plant Pathology .....	** 4
AGRN		3120	Weed Science .....	4 **
AGRN		4000	Advanced Crop Production .....	** 3
AGRN		5150	Soil Morphology .....	** 4
			Elective.....	** 1
				14 15
SR				
AGEC	4000		Core Philosophy.....	** 3
AGRN		3150	Principles of Agribusiness Mgnt.....	3 **
			Turfgrass Management .....	** 4
AGRN		5000	Soils & Environment Quality .....	3 **
AGRN		5080	Soil Resources & Conser .....	4 **
AGRN		5100	Plant Genetics and Crop Imp .....	3 **
AGRN		4010	Princ of Forage Production .....	** 3
AGRN		4950	Senior Seminar .....	** 1
ENTM		4020	Economic Entomology .....	** 4
			Elective.....	** 1
UNIV		4AA0	AG1 Undergraduate Graduation .....	** 0
				14 15

TOTAL HOURS - 120

Curriculum in Agronomy & Soils - Business Track

FR	F	S	F	S
BIOL	1020		Principles of Biology & Lab (1021) .....	4 **
BIOL		1030	Organismal Biology & Lab (1031) .....	** 4
CHEM	1030	1040	Fundamentals Chemistry I & II .....	3 3
CHEM	1031	1041	Fundamentals Chemistry I & II Lab .....	1 1
ENGL		1100	English Composition I .....	** 3
MATH	1130	1610	Math .....	3 4
AGRN	1000		Basic Crop Science.....	4 **
			Elective.....	1 **
				16 15
SO				
ECON		2020	Microeconomics.....	** 3
ENGL		1120	English Composition II .....	3 **
ENGL		2200	World Literature I .....	** 3
HIST	1210	1220	Technology & Civilization I & II .....	3 3
			Core Social Science Group I .....	** 3
ACCT	2810		Fundamentals of Accounting Principles .....	3 **
STAT	2510		Statistics for Biological Sciences.....	** 3
CHEM	2030		Organic Chemistry.....	3 **
AGRN		2040	Basic Soil Science .....	** 4
				15 16
JR				
ENGL		2210	World Literature II .....	** 3
BIOL	3100		Plant Biology .....	3 **
BIOL	3101		Plant Biology Lab .....	1 **
AGRN		5100	Plant Genetics and Crop Imp.....	3 **
PLPA		3000	General Plant Pathology .....	** 4
AGRN		5150	Soil Morphology .....	** 4
AGRN		3120	Weed Science .....	4 **
MNGT		3100	Principles of Management.....	** 3
			Elective.....	** 3
				14 14
SR				
			Core Philosophy.....	** 3
			Core Fine Arts .....	3 **
AGEC		4070	4070 Ag Law or 4040 Ag. Finance .....	** 3
ENTM	4020		Economic Entomology .....	4 **
AGRN		4000	Advanced Crop Production .....	** 3
AGRN		5000	Soils & Environ Quality.....	3 **
AGRN		5020	Nutrient Management .....	** 3
AGRN		4950	4010 or 3150.....	** 3-4
AGEC		4000	Senior Seminar .....	** 1
			Principles of Agribusiness Mgnt.....	3 **
			Elective.....	** 1
UNIV		4AA0	AG1 Undergraduate Graduation .....	** 0
				14 17

TOTAL HOURS - 120

Curriculum in Agronomy & Soils - Science Track

FR	F	S	F	S
BIOL	1020		Principles of Biology & Lab (1021) .....	4 **
BIOL		1030	Organismal Biology & Lab (1031) .....	** 4
CHEM	1030	1040	Fundamentals Chemistry I & II .....	3 3
CHEM	1031	1041	Fundamentals Chemistry I & II Lab .....	1 1
ENGL		1100	English Composition I .....	** 3
MATH	1130	1610	Math .....	3 4

College of Agriculture

<b>AGRN</b>	<b>1000</b>	<b>Basic Crop Science</b> .....	<b>4</b>	<b>**</b>					
		Elective.....	1	**					
			<b>16</b>	<b>15</b>	UNIV	4AA0			
<b>SO</b>									
ENGL	1120	English Composition II.....	3	**					
ENGL	2200	World Literature I.....	3	**					
HIST	1210	Technology & Civilization I & II.....	3	**					
		Core Social Science Group I.....	3	**					
STAT	2510	Statistics for Biological Sciences.....	3	**					
CHEM	2070	Organic Chemistry.....	3	**					
CHEM	2071	Organic Chemistry Lab.....	1	**					
CHEM	3050	Analytical Chemistry.....	3	**					
CHEM	3051	Analytical Chemistry Lab.....	1	**					
<b>AGRN</b>	<b>2040</b>	<b>Basic Soil Science</b> .....	<b>4</b>	<b>**</b>					
			<b>14</b>	<b>16</b>					
<b>JR</b>									
ECON	2020	Microeconomics.....	3	**					
ENGL	2210	World Literature II.....	3	**					
BIOL	3100	Plant Biology.....	3	**					
BIOL	3101	Plant Biology Lab.....	1	**					
BIOL	3000	Genetics.....	4	**					
PHYS	1500	General Physics I.....	4	**					
PLPA	3000	General Plant Pathology.....	4	**					
		<b>AGRN 5150 or BIOL 5120</b> .....	<b>4</b>	<b>**</b>					
<b>AGRN</b>	<b>3120</b>	<b>Weed Science</b> .....	<b>4</b>	<b>**</b>					
			<b>14</b>	<b>16</b>					
<b>SR</b>									
		Core Philosophy.....	3	**					
		Core Fine Arts.....	3	**					
ENTM	4020	Economic Entomology.....	4	**					
BIOL	3200	General Microbiology.....	4	**					
<b>AGRN</b>	<b>5020</b>	<b>Nutrient Management</b> .....	<b>4</b>	<b>**</b>					
		<b>Agronomy &amp; Soils Elective</b> .....	<b>4</b>	<b>**</b>					
		<b>4010 or 4000</b> .....	<b>3</b>	<b>**</b>					
<b>AGRN</b>	<b>4950</b>	<b>Senior Seminar</b> .....	<b>1</b>	<b>**</b>					
UNIV	4AA0	AG1 Undergraduate Graduation.....	0	**					
			<b>15</b>	<b>14</b>					

**TOTAL HOURS - 120**

Agronomy & Soils electives to be taken from courses approved by adviser.

**Curriculum in Agronomy & Soils - Turfgrass Track**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology & Lab (1021).....	4	**
BIOL		1030	Organismal Biology & Lab (1031).....	4	**
CHEM	1030	1040	Fundamentals Chemistry I & II.....	3	3
CHEM	1031	1041	Fundamentals Chemistry I & II Lab.....	1	1
ENGL		1100	English Composition I.....	3	**
MATH	1130		Math.....	3	**
<b>AGRN</b>	<b>1000</b>		<b>Basic Crop Science</b> .....	<b>4</b>	<b>**</b>
<b>AGRN</b>	<b>2040</b>		<b>Basic Soil Science</b> .....	<b>4</b>	<b>**</b>
				<b>15</b>	<b>15</b>
<b>SUMMER</b>					
ENGL	1120		English Composition II.....	3	**
<b>FR</b>					
HIST	1210		Technology and Civilization I.....	3	**
			Elective.....	4	**
FLSP	1010		Spanish.....	4	**
				<b>14</b>	<b>14</b>
			See advisor for approved list for Soils Electives, ECON/MNGT Electives, Plant Science Elective		
<b>SO</b>					
BIOL	3100		Plant Biology <b>OR</b> .....	3	**
HORT	3000		Growth & Dev of Hort Plants.....	3	**
HIST	1220		Technology & Civilization I & II.....	3	**
ENGL	2200		World Literature I.....	3	**
			Core Social Science Group I.....	3	**
MATH	1610		Calculus I.....	4	**
CHEM	2030		Organic Chemistry.....	3	**
ECON	2020		Microeconomics.....	3	**
<b>AGRN</b>	<b>3120</b>		<b>Weed Science</b> .....	<b>4</b>	<b>**</b>
<b>AGRN</b>	<b>3150</b>		<b>Turfgrass Management</b> .....	<b>4</b>	<b>**</b>
				<b>15</b>	<b>15</b>
<b>JR</b>					
ENGL	2210		World Literature II.....	3	**
			Core Philosophy.....	3	**
PLPA	3000		General Plant Pathology.....	4	**
<b>BSEN</b>	<b>3560</b>		<b>Turf Sys Irrig Design</b> .....	<b>3</b>	<b>**</b>
			<b>Soil Elective</b> .....	<b>3</b>	<b>**</b>
			Internship*.....	0	**
				<b>16</b>	<b>0</b>
<b>SR</b>					
			Core Fine Arts.....	3	**
ACCT	2810		Fund of Accounting Principles.....	3	**
ENTM	4020		Economic Entomology.....	4	**
STAT	2510		Statistics for Biological Sciences.....	3	**
<b>AGRN</b>	<b>3920</b>		<b>Internship</b> .....	<b>3</b>	<b>**</b>
<b>AGRN</b>	<b>4950</b>		<b>Senior Seminar</b> .....	<b>1</b>	<b>**</b>
<b>AGRN</b>	<b>5160</b>		<b>Advanced Turfgrass</b> .....	<b>3</b>	<b>**</b>
<b>AGRN</b>	<b>5020</b>		<b>Nutrient Management</b> .....	<b>3</b>	<b>**</b>

					Plant Science Elective.....	3	3
					ECON/MNGT Elective.....	**	3
					AG1 Undergraduate Graduation.....	**	0
						<b>12</b>	<b>19</b>

**TOTAL HOURS - 122**

\* Internship: Spring semester junior year

**Animal Sciences (ANSC)**

The department offers four curriculum options. The Pre-Vet/Pre-Professional option (ANPV) provides students with a foundation in the biological and physical sciences for careers in emerging areas of animal biotechnology while satisfying requirements for application to Auburn's College of Veterinary Medicine, other professional schools or graduate school. The Production/Management option (ANPM) offers greater breadth in animal production management and agribusiness while retaining more electives hours for additional curriculum flexibility. The Equine Science option (ANEQ) allows students to focus on the sciences and practical skills required for a successful career in the horse industry, and by choosing, appropriate elective courses, will prepare students to apply to Auburn's College of Veterinary Medicine. The Muscle Foods option (ANMF) prepares students for quality assurance and for research and development careers in the food industry. Students may use electives to develop expertise in fields such as animal breeding, nutrition, reproduction, growth, behavior, equine science, and companion animals.

**Curriculum in Animal Sciences - Muscle Foods Option**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
MATH	1130		Math.....	3	**
BIOL	1020		Principles of Biology & Lab (1021).....	4	**
BIOL		1030	Organismal Biology & Lab (1031).....	**	4
CHEM	1030	1040	Fund of Chemistry I & II.....	3	3
CHEM	1031	1041	Fund of Chemistry I & II Lab.....	1	1
<b>ANSC</b>	<b>1000</b>		<b>Introduction to ANSC</b> .....	<b>**</b>	<b>4</b>
<b>ANSC</b>	<b>1100</b>		<b>Orientation to ANSC</b> .....	<b>1</b>	<b>**</b>
				<b>15</b>	<b>15</b>

<b>SO</b>					
ECON	2020		Principles of Microeconomics.....	3	**
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I.....	3	**
			Core History.....	3	3
CHEM		2030	Organic Chemistry.....	**	3
BIOL	2500	2510	Anat Physiol I & II.....	4	4
STAT		2510	Statistics for Biol & Life Sciences.....	**	3
				<b>16</b>	<b>16</b>

<b>JR</b>					
			Core Philosophy.....	3	**
			Core Fine Arts.....	3	**
COMM	1000		Public Speaking.....	3	**
<b>ANSC</b>	<b>3610</b>		<b>Animal Growth and Development</b> .....	<b>**</b>	<b>4</b>
BIOL	3000		Genetics.....	4	**
			MF Support**.....	**	3-4
			<b>ANSC Core I *</b> .....	<b>**</b>	<b>3-4</b>
<b>ANSC</b>	<b>3700</b>		<b>Muscle Foods</b> .....	<b>**</b>	<b>4</b>
<b>ANSC</b>	<b>3800</b>		<b>Careers in Animal Ag</b> .....	<b>**</b>	<b>1</b>
<b>BCHE</b>	<b>3200</b>		<b>Principles of Biochemistry</b> .....	<b>**</b>	<b>3</b>
				<b>16</b>	<b>14-16</b>

<b>SR</b>					
<b>ANSC</b>	<b>4700</b>		<b>Meat Processing</b> .....	<b>4</b>	<b>**</b>
<b>BIOL</b>	<b>3200</b>		<b>Microbiology</b> .....	<b>4</b>	<b>**</b>
			<b>ANSC Core II*</b> .....	<b>**</b>	<b>4</b>
			MF Support**.....	**	4
			Free Electives.....	**	9-11
UNIV	4AA0		AG1 Undergraduate Graduation.....	**	0
				<b>12</b>	<b>13-15</b>

**TOTAL HOURS - 120**

\* ANSC Core I/II; choose two of these three courses; ANSC-3400, ANSC-3500, or ANSC-3600.

\*\* Muscle Foods (MF) Support courses; see your advisor or the advising check sheet for ANMF.

**Curriculum in Animal Sciences - Production Option**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
MATH	1130		Math.....	3	**
BIOL	1020		Principles of Biology & Lab (1021).....	4	**
BIOL		1030	Organismal Biology & Lab (1031).....	**	4
<b>CHEM</b>	<b>1030</b>	<b>1040</b>	<b>Fund of Chemistry I &amp; II</b> .....	<b>3</b>	<b>3</b>
<b>CHEM</b>	<b>1031</b>	<b>1041</b>	<b>Fund of Chemistry I &amp; II Lab</b> .....	<b>1</b>	<b>1</b>
<b>ANSC</b>	<b>1000</b>		<b>Introduction to ANSC</b> .....	<b>**</b>	<b>4</b>
<b>ANSC</b>	<b>1100</b>		<b>Orientation to ANSC</b> .....	<b>1</b>	<b>**</b>
				<b>15</b>	<b>15</b>



of courses, called professional tracks, that emphasize environmental applications of biological science, physical science, soils science, or engineering science. A general environmental science track is also available.

**Curriculum in Environmental Science**

FR	F	S		F	S
BIOL		1020	Principles of Biology .....	**	4
CHEM	1030	1040	Fund. of Chem. I & II and Labs (1501, 1511).....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab.....	1	1
ENGL	1100	1120	English Composition I & II.....	3	3
MATH	1610		Calculus I.....	4	**
			Core History .....	3	3
AGEC	2100		Microcomputer Application.....	3	**
ENVI	1010		<b>Intro to Environmental Science.....</b>	0	**
ENVI		1020	<b>Fund of Environmental Science.....</b>	**	2
				17	16
SO					
BIOL	1030		Organismal Biology.....	4	**
PHYS	1500	1510	General Physics I & II .....	4	4
ENGL	2200	2210	World Literature I & II.....	3	3
GEOL	1100		Physical Geology.....	4	**
CHEM		2030	Survey of Organic Chemistry .....	**	3
STAT		2510	Introduction to Statistics.....	**	3
ENVI	2010		<b>Environ Science Seminar.....</b>	1	**
GEOL		2100	<b>Environmental Geology.....</b>	**	4
				16	17
JR					
CHEM		3050	Analytical Chemistry.....	**	3
CHEM		3051	Analytical Chemistry Lab.....	**	1
FORV	4470		GIS Applications.....	2	**
AGRN	3040		<b>Basic Soils.....</b>	4	**
BIOL		3060	<b>Ecology.....</b>	**	4
BIOL	3200		<b>General Microbiology.....</b>	4	**
CIVL		3220	<b>Water &amp; Waste Treatment.....</b>	**	4
			<b>Professional Track.....</b>	6	**
			<b>Professional Track.....</b>	**	4
				16	16
SR					
			Core Fine Arts .....	**	3
			Core Philosophy.....	3	**
			Core Social Science Group I & II.....	3	3
FORV	3440		<b>Environmental Law.....</b>	3	**
			<b>Professional Track.....</b>	7	7
			Elective.....	**	1
UNIV		4AA0	EN1 Undergraduate Graduation.....	**	0
				16	14

**TOTAL HOURS - 128**

Professional Track - see adviser for approved course listing.

**Fisheries and Allied Aquacultures (FISH)**

Fisheries science combines a general foundation in chemistry, mathematics and biological sciences with applied courses in the principles needed to manage fresh and saltwater aquatic resources. The degree is intended to equip students with a broad understanding of fundamental scientific principles needed to develop solutions for the increasing pressures on our aquatic resources and the need to provide safe, reliable food through aquaculture production. Through a sequence of courses, students specialize in emphasis areas of aquatic ecology, fisheries management or aquaculture. The FISH Pre-Vet/Pre-Professional area of emphasis provides students with a broad base of scientific knowledge necessary for success in the College of Veterinary Medicine, other professional schools, or graduate school. Careers for graduates include work in environmental management, fisheries resource management, extension, and commercial aquaculture production, processing, and marketing.

**Curriculum in Fisheries and Allied Aquacultures**  
(Aquaculture, Aquatic Resources Management and Fisheries Management Areas of Emphasis)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
HIST	1010	1020	Core History 1 and 2 .....	3	3
MATH	1610		Calculus I.....	4	**
PHYS		1000	Foundations of Physics & Lab (1001).....	**	4
BIOL	1020		<b>Principles of Biology &amp; Lab (1021).....</b>	4	**
BIOL		1030	<b>Org Biology &amp; Lab (1031).....</b>	**	4
FISH	1100		Fish Orientation .....	1	**
Comp	1000		Comp 1000.....	**	2
				15	16
SO					
CHEM	1030	1040	Fundamentals of Chemistry I & II.....	3	3
CHEM	1031	1041	Fund of Chemistry Lab I & II.....	1	1
ECON		2020	Principles of Microeconomics.....	**	3
ENGL	2200	2210	World Literature I & II.....	3	3

COMM	1000		Core Philosophy.....	3	**
BIOL		3060	Public Speaking .....	3	**
Elective			<b>Principles of Ecology.....</b>	**	4
			Elective.....	1	**
				14	14

**SUMMER**

FISH	2100		<b>Introduction to Fish Science(Term III).....</b>	3	
JR					
			Core Fine Arts .....	3	**
			Social Science Group I.....	3	**
CHEM	2030		Organic Chemistry.....	**	3
STAT	2510		Stat Ag & Life Science.....	3	**
			Emphasis .....	3	4
FISH	5220		<b>Water Science.....</b>	3	**
FISH		5320	<b>Limnology.....</b>	**	4
			Directed Science Elective .....	**	4
				15	15
SR					
			Emphasis .....	4	10
FISH	3950		<b>Careers in Fisheries .....</b>	1	**
FISH	5380		<b>General Ichthyology .....</b>	4	**
FISH	5510		<b>Fish Biology &amp; Management .....</b>	4	**
			Elective.....	2	3
UNIV		4AA0	AG1 Undergraduate Graduation .....	**	0
				15	13

**TOTAL HOURS - 120**

Emphasis - See Advisor for approved course listing.

**Curriculum in Fisheries and Allied Aquacultures**

Pre-Professional Option

**Fisheries and Allied Aquacultures - Pre-Professional Option**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
CHEM	1030	1040	Fundamentals of Chemistry I & II.....	3	3
CHEM	1031	1041	Fundamentals of Chemistry Lab I & II.....	1	1
MATH	1610		Calculus.....	4	**
			Philosophy Core.....	**	3
BIOL	1020		<b>Principles of Biology &amp; Lab (1021) .....</b>	4	**
BIOL		1030	<b>Org Biology &amp; Lab (1031) .....</b>	**	4
			Elective.....	**	2
Fish	1100		Fish Orientation .....	1	**
				16	16
SO					
ECON	2020		Principles of Microeconomics.....	3	**
ENGL	2200	2210	World Literature I & II.....	3	3
PHYS	1500		General Physics I .....	4	**
PHYS		1510	General Physics II .....	**	4
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
BIOL		3060	<b>Prin. of Ecol.....</b>	**	4
				14	15

**SUMMER**

FISH	2100		<b>Intro. To Fish. Sci. (Mini-Semester III) .....</b>	3	
JR					
			Core Fine Arts .....	3	**
HIST	1010	1020	Core History 1 & 2 .....	3	3
COMM	1000		Public Speaking .....	3	**
			Core Social Science .....	**	3
STAT		2510	Stat Ag & Life Science.....	**	3
BCHE	3200		<b>Principles of Biochemistry .....</b>	3	**
FISH	5220		<b>Water Science.....</b>	3	**
			Science Electives .....	**	4
			Elective.....	**	2
				15	15
SR					
			Emphasis .....	3	3
FISH		5320	<b>Limnology.....</b>	**	4
FISH	3950		<b>Seminar.....</b>	1	**
FISH	5380		<b>General Ichthyology .....</b>	4	**
FISH	5410		<b>Fish Health .....</b>	3	**
FISH	5510		<b>Fish Biology &amp; Management .....</b>	3	**
			Electives .....	**	1
			Science Elective .....	**	4
UNIV		4AA0	AG1 Undergraduate Graduation .....	14	12

**TOTAL HOURS - 120**

Students in the Pre-Professional emphasis must satisfactorily complete 6 semester hours of **Emphasis** courses (FISH 5210, FISH 5240, FISH 5250, or FISH 5520) plus 6 semester hours of Science Electives (ANSC 3400, BIOL 3000, BIOL 3010, BIOL 4000, BIOL 3200)

**Horticulture (HORT)**

Courses prepare Horticulture graduates for the following careers; nursery manager, landscape designer, landscape installer, landscape maintenance, interior landscaping, plant propagator, city or state horticulturist, extension horticulturist, horticulture writer, horticulture teacher, florist shop manager, greenhouse manager, vegetable producer,

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orchard manager, chemical company representative, seed company representative or retail garden center manager.

Four undergraduate tracks are available to students in horticulture: landscape horticulture, nursery and greenhouse science, pre-landscape architecture and fruit and vegetable production. Horticulture offers masters' and doctoral degrees, which lead to professional positions in teaching, research and extension.

<b>SR</b>				
<b>HORT</b>	<b>5210</b>	<b>Landscape Bid, Install &amp; Maint .....</b>	<b>**</b>	<b>4</b>
		<b>Group I .....</b>	<b>6-8</b>	<b>**</b>
		Group 2 .....	3-4	3-4
		Electives .....	2-6	8-9
<b>UNIV</b>	<b>4AA0</b>	<b>AG1 Undergraduate Graduation .....</b>	<b>**</b>	<b>0</b>
			<b>11-18</b>	<b>15-17</b>

**TOTAL HOURS - 120**

Groups 1 and 2: see adviser for approved course listing.

**Curriculum in Nursery and Greenhouse Science Emphasis**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
CHEM		1030	Fundamentals of Chemistry .....	**	3
CHEM		1031	Fundamentals of Chemistry Lab .....	**	1
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1130		Pre-Calculus W/Trig <b>OR</b> .....	3	**
MATH	1150		Pre-Calculus Algebra & Trig .....	4	**
			Core History I & II .....	3	3
<b>HORT</b>	<b>1010</b>		<b>Introduction to Horticulture .....</b>	<b>1</b>	<b>**</b>
				<b>14-15</b>	<b>14</b>
<b>SO</b>					
ECON	2020		Microeconomics .....	3	**
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Philosophy .....	3	3
			Public Speaking .....	**	3
COMM		1000	Public Speaking .....	**	3
AGRN	2040		Basic Soil Science .....	4	**
			Core Social Science Group I .....	3	**
<b>HORT</b>		<b>2240</b>	<b>Plant Propagation .....</b>	<b>**</b>	<b>3</b>
<b>HORT</b>		<b>3210</b>	<b>Small Trees, Shrubs &amp; Vines .....</b>	<b>**</b>	<b>4</b>
				<b>13</b>	<b>16</b>
<b>JR</b>					
			Core Fine Arts .....	**	3
PLPA	3000		General Plant Pathology .....	4	**
AGRN	3150		Turfgrass Management .....	4	**
ENTM		4020	Economic Entomology .....	**	4
<b>HORT</b>	<b>3000</b>		<b>Growth &amp; Dev. of Hort Plants .....</b>	<b>3</b>	<b>**</b>
<b>HORT</b>	<b>3220</b>		<b>Arboriculture .....</b>	<b>4</b>	<b>**</b>
<b>HORT</b>	<b>3950</b>		<b>Careers in Horticulture .....</b>	<b>**</b>	<b>1</b>
<b>HORT</b>		<b>4100</b>	<b>Herbaceous Ornamentals .....</b>	<b>**</b>	<b>4</b>
			Group I .....	**	3-4
				<b>16</b>	<b>14-15</b>
<b>SR</b>					
HORT	5220		Greenhouse Management Science .....	4	**
HORT	5230		Nursery Management .....	4	**
			Group I .....	3-4	**
			Group 2 .....	3-4	3-4
			Electives .....	**	12-15
UNIV	4AA0		AG1 Undergraduate Graduation .....	**	0
				<b>14-16</b>	<b>15-19</b>

**TOTAL HOURS - 120**

Groups 1 and 2: see adviser for approved course listing.

**TOTAL HOURS - 132**

**Curriculum in Landscape Horticulture Emphasis**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
CHEM		1030	Fundamentals of Chemistry .....	**	3
CHEM		1031	Fundamentals of Chemistry Lab .....	**	1
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1130		Pre-Calculus W/Trig <b>OR</b> .....	3	**
MATH	1150		Pre-Calculus Algebra & Trig .....	4	**
			Core History I & II .....	3	3
<b>HORT</b>	<b>1010</b>		<b>Introduction to Horticulture .....</b>	<b>1</b>	<b>**</b>
				<b>14-15</b>	<b>14</b>
<b>SO</b>					
ECON	2020		Microeconomics .....	3	**
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Philosophy .....	**	3
			Public Speaking .....	**	3
COMM		1000	Public Speaking .....	**	3
AGRN	2040		Basic Soil Science .....	4	**
			Core Social Science Group I .....	3	**
<b>HORT</b>		<b>2240</b>	<b>Plant Propagation .....</b>	<b>**</b>	<b>3</b>
<b>HORT</b>		<b>3210</b>	<b>Small Trees, Shrubs &amp; Vines .....</b>	<b>**</b>	<b>4</b>
				<b>13</b>	<b>16</b>
<b>JR</b>					
			Core Fine Arts .....	**	3
PLPA	3000		General Plant Pathology .....	4	**
AGRN	3150		Turfgrass Management .....	4	**
ENTM		4020	Economic Entomology .....	**	4
<b>HORT</b>	<b>3000</b>		<b>Growth &amp; Develop of Hort Plants .....</b>	<b>3</b>	<b>**</b>
<b>HORT</b>	<b>3220</b>		<b>Arboriculture .....</b>	<b>4</b>	<b>**</b>
<b>HORT</b>	<b>3950</b>		<b>Careers in Horticulture .....</b>	<b>**</b>	<b>1</b>
<b>HORT</b>		<b>4100</b>	<b>Herbaceous Ornamentals .....</b>	<b>**</b>	<b>4</b>
<b>HORT</b>		<b>4270</b>	<b>Intermediate Landscape Design .....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>14</b>

**Curriculum in Pre-Landscape Architecture Emphasis**

Students who have successfully completed the first three years of the Pre-Landscape Architecture Emphasis and who have a minimum 2.8 cumulative GPA are eligible to apply to the Landscape Architecture Summer Design Studio. Students who have successfully completed the Summer Design Studio and who are approved by the Landscape Architecture Faculty Admissions Committee are eligible to make application to the Graduate School for the Master of Landscape Architecture Program upon the completion of the fourth year. Please see the Office of Academic Affairs in the College of Agriculture for further information

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
CHEM		1030	Fundamentals of Chemistry .....	**	3
CHEM		1031	Fundamentals of Chemistry Lab .....	**	1
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1130		Pre-Calculus W/Trig <b>OR</b> .....	3	**
MATH	1150		Pre-Calculus Algebra & Trig .....	4	**
			Core History I & II .....	3	3
<b>HORT</b>	<b>1010</b>		<b>Introduction to Horticulture .....</b>	<b>1</b>	<b>**</b>
				<b>14-15</b>	<b>14</b>
<b>SO</b>					
ECON	2020		Microeconomics .....	3	**
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Philosophy .....	**	3
			Public Speaking .....	**	3
COMM		1000	Public Speaking .....	**	3
AGRN	2040		Basic Soil Science .....	4	**
			Core Social Science Group I .....	3	**
<b>HORT</b>		<b>2240</b>	<b>Plant Propagation .....</b>	<b>**</b>	<b>3</b>
<b>HORT</b>		<b>3210</b>	<b>Small Trees, Shrubs &amp; Vines .....</b>	<b>**</b>	<b>4</b>
				<b>13</b>	<b>16</b>
<b>JR</b>					
			Core Fine Arts .....	**	3
PLPA	3000		General Plant Pathology .....	4	**
AGRN	3150		Turfgrass Management .....	4	**
ENTM		4020	Economic Entomology .....	**	4
<b>HORT</b>	<b>3000</b>		<b>Growth &amp; Develop of Hort Plants .....</b>	<b>3</b>	<b>**</b>
<b>HORT</b>	<b>3220</b>		<b>Arboriculture .....</b>	<b>4</b>	<b>**</b>
<b>HORT</b>	<b>3950</b>		<b>Careers in Horticulture .....</b>	<b>**</b>	<b>1</b>
<b>HORT</b>		<b>4100</b>	<b>Herbaceous Ornamentals .....</b>	<b>**</b>	<b>4</b>
<b>HORT</b>		<b>4270</b>	<b>Intermediate Landscape Design .....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>14</b>

**SUMMER**

<b>LAND</b>	<b>5130</b>	<b>Studio I .....</b>	<b>5</b>
<b>LAND</b>	<b>5131</b>	<b>Field Studies .....</b>	<b>1</b>
<b>LAND</b>	<b>5140</b>	<b>History I .....</b>	<b>3</b>
<b>LAND</b>	<b>5150</b>	<b>Construction I .....</b>	<b>2</b>
<b>LAND</b>	<b>5160</b>	<b>Graphic Studies I .....</b>	<b>2</b>
<b>LAND</b>	<b>5170</b>	<b>Graphic Studies II .....</b>	<b>3</b>
			<b>16</b>

**SR**

LAND	5230	Studio II .....	5
LAND	5131	Field Studies .....	1
LAND	5240	History II .....	3
LAND	5250	Construction II .....	2
LAND	5260	Graphic Studies III .....	3
LAND	5270	Plant Spatiality .....	2
LAND	5330	Studio III .....	5
LAND	5331	Field Studies .....	1
LAND	5340	Urban Studies I .....	3
LAND	5360	Dynamic Systems I .....	3
<b>HORT</b>	<b>5210</b>	<b>Landscape Bidding, Installation &amp; Main .....</b>	<b>**</b>
			<b>4</b>

**Curriculum in Fruit and Vegetable Production Emphasis**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1130		Pre-Calculus W/Trig <b>OR</b> .....	3	**
MATH	1150		Pre-Calculus Algebra & Trig .....	4	**
			Core Fine Arts .....	**	3
			Core History I & II .....	**	3
COMM		1000	Public Speaking .....	**	3
<b>HORT</b>	<b>1010</b>		<b>Introduction to Horticulture .....</b>	<b>1</b>	<b>**</b>
				<b>14-15</b>	<b>16</b>

College of Agriculture

<b>SO</b>						
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3	
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1	
ENGL	2200	2210	World Literature I & II .....	3	3	
			Core Philosophy .....	3	**	
ACCT		2810	Fund of Accounting .....	**	3	
<b>HORT</b>	<b>2010</b>		<b>Fruit and Nut Production .....</b>	<b>4</b>	<b>**</b>	
<b>HORT</b>		<b>2030</b>	<b>Vegetable Production .....</b>	<b>**</b>	<b>3</b>	
<b>HORT</b>		<b>2240</b>	<b>Plant Propagation .....</b>	<b>**</b>	<b>3</b>	
				<b>14</b>	<b>16</b>	
<b>JR</b>						
PLPA	3000		General Plant Pathology .....	4	**	
ENTM		4020	Economic Entomology .....	**	4	
			Core Social Science Group I .....	3	**	
ECON		2020	Prin. Microeconomics .....	**	3	
			<b>Group I or 2 .....</b>	<b>3-4</b>	<b>3-4</b>	
<b>HORT</b>	<b>3000</b>		<b>Growth &amp; Dev of Hort Plants .....</b>	<b>3</b>	<b>**</b>	
<b>HORT</b>		<b>5120</b>	<b>Small Fruit &amp; Pecan Culture .....</b>	<b>**</b>	<b>3</b>	
				<b>13-14</b>	<b>15-16</b>	
<b>SUMMER</b>						
	<b>HORT</b>	<b>5110</b>	<b>Tree Fruit Culture .....</b>	<b>2</b>		
<b>SR</b>						
<b>HORT</b>	<b>5130</b>		<b>Sustain Veg Crop Production .....</b>	<b>3</b>	<b>**</b>	
<b>HORT</b>		<b>5140</b>	<b>Postharvest Biology &amp; Tech .....</b>	<b>**</b>	<b>3</b>	
			<b>Group I or 2 .....</b>	<b>**</b>	<b>6-8</b>	
AGRN	2040		Basic Soil Science .....	4	**	
			Electives .....	5	5-6	
UNIV	4AA0		AG1 Undergraduate Graduation .....	**	0	
				<b>15</b>	<b>13-17</b>	

**TOTAL HOURS - 120**

Horticulture Elective Groups 1 and 2: see adviser for approved course listing.

**Poultry Science (POUL)**

Four curriculum options are available to students in the Poultry Science 1) Poultry Production, 2) Pre-Veterinary Medicine 3) Poultry Processing and Products, and 4) Food Science. Each curriculum option leads to BS degree in poultry science. Professional and general electives within each option allow students to pursue expertise in their individual area of interest. Enrollment in summer internship is required in all four options.

**Curriculum in Poultry Production**

This curriculum option is designed to develop technical, analytical communications, business and management skills needed for advancement to leadership positions in the poultry production, and allied agricultural industries. Graduate will be able to apply their knowledge of science, economics, business and ethics to identify, analyze and responsibly address challenges associated with modern poultry production. Relevant courses in poultry processing and products are also included in this curriculum option.

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
COMP	1000		Personal Computer Applications .....	2	**
			Core Philosophy .....	**	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1130		Pre-Calculus w/Trigonometry .....	3	**
			Social Science Group I .....	**	3
COMM		1000	Public Speaking .....	**	3
<b>POUL</b>	<b>1000</b>		<b>Introductory Poultry Science .....</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>16</b>
<b>SO</b>					
			Core History .....	3	3
			Core Fine Arts .....	3	**
ECON		2020	Microeconomics .....	**	3
ENGL	2200	2210	World Literature I & II .....	3	3
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
<b>POUL</b>	<b>3030</b>		<b>Commercial Poultry Production .....</b>	<b>4</b>	<b>**</b>
CHEM		2030	Survey of Organic Chemistry .....	**	3
				<b>17</b>	<b>16</b>
<b>JR</b>					
<b>BCHE</b>	<b>3200</b>		<b>Principles of Biochemistry .....</b>	<b>**</b>	<b>3</b>
PHYS	1000		Foundations of Physics & Lab (1001) .....	4	**
<b>POUL</b>	<b>3150</b>		<b>Poultry Physiology .....</b>	<b>**</b>	<b>4</b>
<b>POUL</b>	<b>3060</b>		<b>Poultry Breed, Fert, &amp; Hatch .....</b>	<b>**</b>	<b>4</b>
<b>POUL</b>	<b>5110</b>		<b>Poultry Processing .....</b>	<b>3</b>	<b>**</b>
STAT	2510		Statistics for Biol & Health Sciences .....	3	**
			Professional Electives .....	4	4
				<b>14</b>	<b>15</b>

<b>SUMMER</b>						
<b>POUL</b>	<b>4920</b>		<b>Poultry Science Internship .....</b>	<b>3</b>		
<b>SR</b>	<b>AGEC</b>	<b>4000</b>	Agribusiness Management .....	3	**	
			COMM 2410 or ENGL 3040 or ENGL 3080 .....	**	3	
<b>BIOL</b>	<b>3200</b>		<b>Microbiology .....</b>	<b>4</b>	<b>**</b>	
<b>POUL</b>	<b>5040</b>		<b>Poultry Further Processing .....</b>	<b>4</b>	<b>**</b>	
<b>POUL</b>	<b>5050</b>		<b>Poultry Feeding .....</b>	<b>4</b>	<b>**</b>	
<b>POUL</b>	<b>5080</b>		<b>Poultry Health .....</b>	<b>**</b>	<b>3</b>	
<b>POUL</b>	<b>5160</b>		<b>Principles of Food Safety .....</b>	<b>**</b>	<b>3</b>	
			General Electives .....	**	2	
			Professional Electives .....	**	4	
UNIV	4AA0		AG1 Undergraduate Graduation .....	**	0	
				<b>15</b>	<b>15</b>	

**TOTAL HOURS - 126**

For professional electives see advisor for approved list.

**Curriculum in Poultry Science/Pre-Veterinary Medicine**

This curriculum option is designed to develop the technical, analytical, and communication skills, as well as the broad scientific foundation needed for success in post-graduate degree programs such as doctor of veterinary medicine, master of science, doctor of philosophy or other post-graduate professional degrees. Completion of this curriculum option will also prepare graduates for technical and research positions in poultry and allied industries. Courses listed for the first six semesters satisfy requirements for admission to the College of Veterinary Medicine. Completion of the remaining requirements or successful completion of one year in the College of Veterinary Medicine entitles the student to a BS degree in poultry science.

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
COMP		1000	Personal Computer Applications .....	**	2
			Core Fine Arts .....	**	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
MATH	1130		Pre-Calculus w/Trigonometry .....	3	**
ENGL		1100	English Composition I .....	**	3
<b>POUL</b>	<b>1000</b>		<b>Introductory Poultry Science .....</b>	<b>3</b>	<b>**</b>
				<b>14</b>	<b>16</b>
<b>SO</b>					
			Core History .....	3	3
ENGL	1120		English Composition II .....	3	**
			Core Philosophy .....	**	3
ECON		2020	Microeconomics .....	**	3
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
<b>POUL</b>	<b>3030</b>		<b>Commercial Poultry Production .....</b>	<b>4</b>	<b>**</b>
PHYS		1500	General Physics I & Lab (1501) .....	**	4
			Core Social Science Group I .....	**	3
				<b>17</b>	<b>17</b>
<b>JR</b>					
ENGL	2200	2210	World Literature I & II .....	3	3
<b>BIOL</b>	<b>3200</b>		<b>Microbiology .....</b>	<b>**</b>	<b>4</b>
<b>BCHE</b>	<b>3200</b>		<b>Principles of Biochemistry .....</b>	<b>3</b>	<b>**</b>
			PreVet Science Elective .....	2 to 4	**
<b>POUL</b>	<b>5110</b>		<b>Poultry Processing .....</b>	<b>3</b>	<b>**</b>
PHYS	1510		General Physics II & Lab (1511) .....	4	**
ANSC		3400	Animal Nutrition .....	**	4
<b>POUL</b>	<b>3150</b>		<b>Poultry Physiology .....</b>	<b>**</b>	<b>4</b>
				<b>15-17</b>	<b>15</b>
<b>SR</b>					
STAT		2510	Statistics for Biol & Health Sciences .....	**	3
COMM		1000	Public Speaking .....	**	3
<b>POUL</b>	<b>5050</b>		<b>Poultry Feeding .....</b>	<b>4</b>	<b>**</b>
<b>POUL</b>	<b>5160</b>		<b>Principles of Food Safety .....</b>	<b>**</b>	<b>3</b>
<b>POUL</b>	<b>5040</b>		<b>Poultry Further Processing .....</b>	<b>4</b>	<b>**</b>
<b>POUL</b>	<b>5080</b>		<b>Poultry Health .....</b>	<b>**</b>	<b>3</b>
<b>POUL</b>	<b>3060</b>		<b>Poultry Breed, Fert, &amp; Hatch .....</b>	<b>**</b>	<b>4</b>
<b>POUL</b>	<b>4920</b>		<b>Poultry Science Internship .....</b>	<b>3</b>	<b>**</b>
			General Elective .....	3	0
UNIV	4AA0		AG1 Undergraduate Graduation .....	**	0
				<b>14</b>	<b>16</b>

**TOTAL HOURS - 124 TO 126**

For professional electives see advisor for approved list.

**Curriculum in Poultry Processing and Products**

This curriculum option is designed to develop the technical, analytical, communication, business and management skills needed for advancement to leadership positions in the poultry processing, food, and allied agricultural industries. This curriculum option involves all aspects of the food industry from raw materials through processing and packaging to marketing final products. Relevant courses in poultry production are also included in this curriculum option. Fundamental principles along with practical application in poultry and food science allows students to fit their education to their personal career goals. Career opportunities for graduates would include: quality assurance-food safety, research & product development, technical service, food regulation, and sales.

FR	F	S		F	S
			Core Fine Arts .....	**	3
COMP	1000		Personal Computer Applications .....	**	2
COMM	1000		Public Speaking .....	**	3
			Core Social Science Group I .....	3	**
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
MATH	1130		Pre-Calculus w/Trigonometry .....	3	**
ENGL	1100	1120	English Composition I & II .....	3	3
<b>POUL</b>	<b>1000</b>		<b>Introductory Poultry Science .....</b>	<b>3</b>	<b>**</b>
				<b>16</b>	<b>15</b>
<b>SO</b>					
			Core History .....	3	3
			Core Philosophy .....	3	**
ECON	2020		Microeconomics .....	**	3
ENGL	2200	2210	World Literature I & II .....	3	3
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031) .....	**	4
CHEM		2030	Survey of Organic Chemistry .....	**	3
<b>POUL</b>	<b>3030</b>		<b>Commercial Poultry Production .....</b>	<b>4</b>	<b>**</b>
				<b>17</b>	<b>16</b>
<b>JR</b>					
STAT	2510		Statistics for Biol & Health Sciences .....	3	**
<b>BCHE</b>	<b>3200</b>		<b>Principles of Biochemistry .....</b>	<b>3</b>	<b>**</b>
<b>BIOL</b>	<b>3200</b>		<b>Microbiology .....</b>	<b>4</b>	<b>**</b>
<b>BIOL</b>		5660	<b>Food Microbiology .....</b>	<b>**</b>	<b>5</b>
<b>POUL</b>		3150	<b>Poultry Physiology .....</b>	<b>**</b>	<b>4</b>
<b>FDSC</b>		5150	<b>Food Laws and Regulations .....</b>	<b>**</b>	<b>3</b>
			Processing Course .....	3-4	**
			PPP Support Course .....	**	3-4
				<b>13-14</b>	<b>15-16</b>
<b>SUMMER</b>					
<b>POUL</b>		4920	<b>Poultry Science Internship .....</b>	<b>3</b>	<b>**</b>
<b>SR</b>					
<b>BSEN</b>	<b>5550</b>		<b>Principles of Food Engineering Technol. ....</b>	<b>4</b>	<b>**</b>
<b>FDSC</b>	<b>5450</b>		<b>Food Analysis and Quality Control .....</b>	<b>4</b>	<b>**</b>
<b>FDSC</b>		5430	<b>Food Chemistry .....</b>	<b>**</b>	<b>4</b>
<b>PHYS</b>	1000		Foundations of Physics & Lab (1001) .....	**	4
<b>POUL</b>		5160	<b>Principles of Food Safety .....</b>	<b>**</b>	<b>3</b>
			Processing Course .....	3-4	4
			PPP Support Course .....	**	3-4
UNIV	4AA0		AG1 Undergraduate Graduation .....	**	0
				<b>15-16</b>	<b>15-16</b>

**TOTAL HOURS - 126**

For support courses and processing courses, see advisor for approved list.

**Curriculum In Food Science**

This curriculum option is designed to develop technical, analytical, and communication skills as well as provide a broad scientific foundation to prepare students for employment within the food industry or admittance into graduate school. Upper level food science courses address the chemical, physical, and biological properties of foods and how these properties influence food processing, quality, and safety. Our undergraduate food science program is formally approved by the Institute of Food Technologists. Graduates in food science find employment in quality assurance, product development, food safety, and technical sales.

FR	F	S		F	S
COMP		1000	Personal Computer Applications .....	**	2
			Core Fine Arts .....	3	**
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1610		Calculus I .....	**	4
BIOL		1020	Principles of Biology & Lab (1021) .....	**	4
NTRI		2000	Nutrition and Health .....	**	3
<b>POUL</b>	<b>1000</b>		<b>Introductory Poultry Science .....</b>	<b>3</b>	<b>**</b>
				<b>17</b>	<b>16</b>
<b>SO</b>					
			Core History .....	3	3
			Core Social Science I .....	3	**
ECON		2020	Microeconomics .....	**	3
ENGL	2200	2210	World Literature I & II .....	3	3
COMM	1000		Public Speaking .....	3	**
NTRI	2050		Science of Food .....	4	**
PHYS	1000		Foundations of Physics & Lab (1001) .....	**	4
CHEM		2030	Survey of Organic Chemistry .....	**	3
				<b>16</b>	<b>16</b>
<b>JR</b>					
<b>BCHE</b>	<b>3200</b>		<b>Principles of Biochemistry .....</b>	<b>3</b>	<b>**</b>
<b>BIOL</b>	<b>3200</b>		<b>Microbiology .....</b>	<b>4</b>	<b>**</b>
<b>BIOL</b>		5560	<b>Food Microbiology .....</b>	<b>**</b>	<b>5</b>
<b>FDSC</b>	<b>5770</b>		<b>Food Plant Sanitation .....</b>	<b>4</b>	<b>**</b>
<b>FDSC</b>		5430	<b>Food Chemistry .....</b>	<b>**</b>	<b>4</b>
<b>FDSC</b>		5730	<b>Sensory Evaluation .....</b>	<b>**</b>	<b>3</b>
			<b>POUL 5140 or ANSC 4700 .....</b>	<b>4</b>	<b>**</b>
			Food Science Electives or ROTC .....	**	3
				<b>15</b>	<b>15</b>
<b>SUMMER</b>					
<b>FDSC</b>		4920	<b>Poultry Science Internship .....</b>	<b>3</b>	
<b>SR</b>					
			Core Philosophy .....	**	3
<b>BSEN</b>	<b>5550</b>		<b>Principles of Food Engineering Technol. ....</b>	<b>4</b>	<b>**</b>
<b>FDSC</b>	<b>4290</b>		<b>Professional Development in Food Science .....</b>	<b>**</b>	<b>1</b>
<b>FDSC</b>	<b>5450</b>		<b>Food Analysis and Quality Control .....</b>	<b>4</b>	<b>**</b>
<b>FDSC</b>		5640	<b>Food Product Development .....</b>	<b>**</b>	<b>4</b>
<b>POUL</b>		5160	<b>Principles of Food Safety .....</b>	<b>**</b>	<b>3</b>
<b>STAT</b>	2510		Statistics for Biol & Health Sciences .....	**	3
			Food Science Electives or ROTC .....	**	3
UNIV	4AA0		AG1 Undergraduate Graduation .....	**	0
				<b>14</b>	<b>14</b>

**TOTAL HOURS - 126**

For food science electives, see advisor for approved list.



# College of Architecture, Design, and Construction

REBECCA O'NEAL DAGG, *Interim Dean*  
KAREN L. ROGERS, *Associate Dean for Graduate Studies and External Affairs*

THE COLLEGE OF ARCHITECTURE, DESIGN AND CONSTRUCTION (CADC) is committed to preparing professionals in the design and construction industries through professional undergraduate programs in the academic areas of Architecture, Building Science, Environmental Design, Graphic Design, Industrial Design and Interior Architecture and through graduate professional programs in Building Science, Community Planning, Design-Build, Industrial Design, Landscape Architecture, and Real Estate Development. Collaboration, community engagement, innovation, global connection and critical practice are core values intertwined in all of the programs at the College of Architecture, Design and Construction. Whether working with nationally respected corporations in the Department of Industrial and Graphic Design, associating with major construction companies in the McWhorter School of Building Science, or building facilities to accommodate the needs of some of the state's underserved citizens at the School of Architecture, Planning, and Landscape Architecture's Rural Studio, CADC students learn in unique and flexible settings from innovative faculty and through progressive pedagogical models.

The College of Architecture, Design and Construction maintains the right to limit enrollment in all programs and may retain student work for exhibition or for records and accreditation purposes. CADC students in the professional programs are required to pay the CADC Professional Fee during each semester of the professional curriculum.

## School of Architecture, Planning, and Landscape Architecture

**Architecture Academic Standards and Policies** – Enrollment in the second year studios is limited and eligibility for acceptance to Architecture and Interior Architecture is based on performance in courses in the first year of the model curriculum. The Architecture Program offers two options for completing the Pre-Architecture first year of the model curriculum: the Foundation Unit Studio sequence and the Summer Design Studio sequence.

Foundation Unit Studio sequence is offered to freshmen students who have previously demonstrated exemplary academic performance. Pre-Architecture students are selected for Foundation Unit studio by a School of Architecture committee. Foundation Unit applications are mailed to eligible students who have applied to and been accepted to Auburn on or before February 1<sup>st</sup> preceding fall term entry. Invitations to participate in Foundation Unit will be extended prior to Camp War Eagle. Foundation Unit students must receive an "S" in fall semester ARCH classes to be admitted to Foundation Unit spring semester studio sequence. Students accepted into the Foundation Unit Studio sequence may not defer their acceptance to another academic year. Students that fail to successfully complete the fall semester studio sequence or students not accepted into the Second Year Studio sequence at the end of the spring semester will not be readmitted to the Foundation Unit Program. These students may elect to participate in the following Summer Design Studio session and will be required to participate in the entire summer program. Eligibility is dependent upon Summer Design criteria.

Auburn University students who successfully complete 27 hours, pass ARCH1000, General Physics I, and Calculus I or Math 1150, and achieve a minimum cumulative GPA of 2.80 are eligible to be accepted into Summer Design. In the event that all available Summer Design seats are not filled based on the stated criteria, the committee may opt to fill the remaining seats based on academic performance of the applicants. Summer Design Studio sequence is divided into two sessions. During the course of the first session each student's work is periodically ranked relative to her/his peers. At the end of the first session the students with the highest rank-in-class are accepted into Session Two, subject to available space. Students not accepted to the Second Year Studio may elect to retake the entire sequence of courses during the following Summer Design Session if they meet the admission criteria or they may elect to change majors.

Admission to the Second Year Studio sequence is predicated on the receipt of a grade of C or better in both ARCH 1020 and ARCH 1420. The Grade Adjustment Policy may not be used to progress to Second Year Studio.

In the event a grade of D or F is received in any required course in the major, a review is required for continuance in the program. Based on the outcome of this review, a student may be required to repeat the course or, in the case of design studios, the entire studio sequence for that respective year-level. Students receiving a second D when repeating a required course will be reviewed for continuance in the program. Similarly, a student receiving a majority of grades of C or poorer may be reviewed for continuance in the program.

Students must maintain professional standards of behavior, as outlined in the Tiger Cub, at all times while on university property and while participating in school sponsored trips, events, and activities. Failure to do so may be grounds for dismissal from the program.

To proceed to the beginning sequence of design studio at third, fourth, or fifth year levels, the student must have completed all required prerequisite courses for that respective year-level, as indicated in the model curriculum. Enrollment in 3000-level BSCI courses will be limited to those students with a GPA of 2.50 or above and second-year standing in design studio.

**Architecture Transfer Students** – Transfer students in Architecture must meet the minimum requirements as set by Auburn University to be admitted to the College of Architecture, Design and Construction. They will be advised to begin with the Summer Design Studio Sequence. Transfer students must also meet the minimum qualifications for admission to Summer Design. Transfer students should contact CADC Student Services no later than January to request a space in the Summer Design Studio.

Foundation Unit Studio placement for transfer candidates is determined each year by the school head, the Architecture program chair, the First-Year Program coordinator and a representative from the Office of Student Services. Up to 20 percent of Foundation Unit Studio positions may be reserved for transfers each year; however, the positions will only be filled if the transferring student's academic performance is competitive with the Foundation Unit Studio top tier ranking students from that academic year freshman admission round. It is possible to have a Foundation Unit Studio with no transfer students. Transfers accepted into the Foundation Unit Studio Sequence may not defer their acceptance to another academic year.

Transfer students from NAAB-accredited architecture programs, in addition to meeting the minimum requirements as set by Auburn University, will be required to present a portfolio of their work to the Academic Review Committee (ARC) for evaluation. The ARC will determine the level of placement in the professional architecture design studio sequence or in the pre-architecture program.

**Special Opportunities for Qualified Architecture and Interior Architecture Students** – During the third year of design studio students are required to participate in at least one of a variety of field studies opportunities aimed at enriching students' learning experience and preparing students for professional life. These opportunities include both an international studies program with a variety of options for study abroad as well as the possibility of participation in the Rural Studio - a program based in rural west Alabama where students engage local communities via hands-on service-learning projects to help meet needs of shelter and improved quality-of-life. In addition to the required third year opportunities, students may have additional opportunities during their fifth year of study to participate in the Rural Studio or the Auburn Center for Architecture and Urban Studies - a design center in downtown Birmingham where upper-level students and faculty engage in community-centered, service-learning activities. Participation in each of these programs is limited, and students may be allowed to participate based on academic standing, available resources, and a competitive selection process.

Professional internships with practicing architects are recommended prior to the last year of study.

**Architecture/Interior Architecture (ARIA) Academic Standards and Admission Policy** – Participation in the Interior Architecture (ARIA) program is highly selective. Students are eligible to apply for the Interior Architecture program in the spring of their second year of the Architecture Program. This policy allows for a summer ARIA thesis class size based on yearly available faculty resources.

**Spring semester applications (2nd year students)** — The Interior Architecture faculty will make a selection of second year students at the end of Spring semester. Class size is based on available faculty resources and may vary each year. These students will initially participate in the ARIA-designated Third Year Fall Semester Studio. Selection of students is based primarily on the ARIA faculty-comprised Admission Board's assessment of submitted design work. The assessment will be based on the students' statements of intent and on three projects that demonstrate a high quality of design ability. A high quality of design ability is considered to be an indication of an applicant's capability to take on the extra degree requirements of the ARIA degree. Additionally, it is required that accepted students have completed their appropriate studio coursework and maintain a minimum 3.0 GPA for conditional acceptance into the ARIA dual degree program. The students must maintain a minimum of a 3.0 GPA in their studio coursework during the third and fourth year to proceed into the ARIA Summer Thesis semester. If a 3.0 studio GPA is not maintained, a review by the ARIA Admissions Board will be required to determine a student's eligibility to continue in the program.

## McWhorter School of Building Science

Building Science is a multi-disciplinary program which combines a significant technical education with a broad background in business management related to construction. Auburn's construction program is unique due to its leading edge information technology applications emphasis. This combination provides graduates a comprehensive foundation for success.

Entering Freshmen who meet the general admission requirements of Auburn University will be admitted to the Pre-Building Science program. Transfer students (external) may enter the Pre-Building Science program during fall, spring or summer semester and will be accepted on a space-available basis as determined by the school head. Minimum grade point average of 2.60 is required in 32 semester hours including English, History, Math (Calculus I), and a Natural Science with a lab (Trig-based Physics with lab) required in the first year of the model curriculum. Internal transfer students must have a 2.60 GPA (can be a gapped GPA).

**Building Science Academic Standards and Policies** — To be considered for admission into the professional Building Science program (BSCI), the student must have completed all Pre-Building Science course work shown in the first two years of the BSCI model curriculum, and must have successfully completed a minimum of 63 semester hours. The school reserves the right to limit enrollment in the professional program (BSCI) based on calculated GPA and on available resources. It is possible to have less than the available number of positions filled if applicants do not have a 2.60 formula GPA.

For the fall and summer semesters, thirty students are chosen in rank order based upon the formula GPA calculation described in the Building Science Academic Standards and based upon a minimum 2.60 formula GPA. Exceptions to this minimum GPA are only available through the school head, and shall be only considered with extenuating circumstances. Please see a CAD/C advisor for a full copy of the BSCI Academic Standards. Repeat applicants will be evaluated based upon grades received in all twenty courses that comprise the Pre-Building Science curriculum. For the spring semester, sixty students are chosen in rank order based upon the formula GPA calculation described in the Building Science Academic Standards and based upon a minimum 2.60 formula GPA. Repeat applicants are evaluated based upon grades received in all twenty courses that compose the Pre-Building Science curriculum. No preference will be given to either first-time or repeat applicants.

After being admitted into the professional program, any student receiving a grade below C in any 3000- or 4000-level BSCI course, or any student whose cumulative GPA falls below 2.50, will be reviewed by the School Academic Standards Committee for approval to continue in the program. Any student who is reviewed may be required to repeat a course or to withdraw from the program.

## Department of Industrial and Graphic Design

### Graphic Design Academic Standards

Students pursuing the bachelor of fine arts degree (BFA) in graphic design (GDES) will enroll in the College of Architecture, Design and Construction as Pre-Graphic Design (PGDE) majors for the first year level curriculum.

**Acceptance and Progression into the Professional Graphic Design Program** — The program maintains the right to limit freshmen and transfer enrollment. Admission into the BFA in graphic design is selective, is limited, and is based on a multiple step process.

- 1) **Application for Pre-Graphic Design:** Once accepted to Auburn University, students who indicate pre-graphic design as their major must complete and submit the Pre-Graphic Design Freshmen Admission Application by the deadline stated on the application form. Accepted students will be designated as Pre-Graphic Design (PGDE) for the first year of the curriculum. Entering freshmen admitted to Auburn who are admitted as PGDE to the major must begin their program of study in the fall or spring term of the academic year after they are admitted, or they will be held to the same admission requirements as transfer students. Entering freshmen who are not admitted into Pre-Graphic Design may consider other programs in the college and should communicate with the CAD/C Office of Student Services to discuss options.
- 2) **PGDE to GDES second year level Courses:** After completing the first year level Pre-Graphic Design curriculum, an admission process based on GPA ranking admits qualified students into the Graphic Design second year level program for the GDES 2210 and GDES 2220 courses. Once accepted into the second year level Graphic Design major, the students will be classified as GDES and be considered probationary. The admissions process into the second level GDES program is as follows: Pre-Graphic Design students must complete at least 30 semester hours of credit including: GDES 1110 Drawing I; GDES 1120 Drawing II; GDES 1210 Design I GDES 1220 Design II; two courses from the sequence ARTS 1710, 1720, 1730 Art History I, II, III; and at least 6 hours of coursework counting toward the University Core Curriculum. The GPA for entrance to the second level of Graphic Design will be calculated on the above listed courses only. (The two highest Core grades will be utilized.) [Grades received at other institutions in courses that have been accepted by Auburn, as Core or fundamental art course requirements, will be included in the GPA.] Following completion of the above listed courses, PGDE students will submit an Application to B.F.A. in Graphic Design Degree Program to the CAD/C Office of Student Services. Students will be ranked by GPA and the top students will be selected. These students will be notified and then registered in the next level courses — GDES 2210 Production Processes and GDES 2220 Typographics I, by CAD/C Office of Student Services. Students who are not accepted can reapply in following semesters.
- 3) **B.F.A in Graphic Design Entrance Review** All probationary second-year level GDES students who have achieved a minimum 2.50 GPA in GDES 2210 and GDES 2220 are eligible to apply through a portfolio review process for GDES 2230. The Graphic Design Review Committee will conduct an entrance review twice per academic year, at the end of fall semester and at the end of spring semester. To advance to GDES 2230, it is required that students submit an unofficial transcript showing the required GPA, a portfolio of work from GDES 2210 and GDES 2220, and a one page typewritten statement of intent. The portfolio will consist of 6 projects from the two courses (no more than four projects from one course). The statement of intent should include reasons for choosing the Graphic Design major and address career goals. The Graphic Design Review Committee will evaluate the student's portfolio and written statement in terms of the individual student's skills, artistic perception, conceptualization, and professionalism. Upon successful admission by portfolio review, the student will be required to purchase a laptop computer that meets minimum specifications and will be allowed to register for 3000-level courses.

**Transfer Students for Graphic Design** — The Graphic Design (GDES) program maintains the right to limit transfer enrollment based on available resources. On and off-campus transfer students must file a GDES Transfer Student Admission Application and meet criteria listed in the application with the CAD/C Office of Student Services no later than the posted deadline.

A student must have a minimum cumulative unadjusted GPA of 2.8 (on a 4.0 scale) on all collegiate work attempted and will be accepted on a space-available basis as determined by the department head.

On and off campus transfer applicants must meet criteria listed in the "Academic Policies" section of the Auburn University Bulletin. The application packet includes an application form, statement of intent, and official transcripts from all schools attended. A portfolio is required for consideration of transfer credit for any studio classes taken. Applicants must be admitted to Auburn University at the time of application. Screening of applications for fall admission begins in March with applicants notified by April 15. Screening of applications for Spring admission begins in October with applicants notified by November 15. Students admitted

MUST begin the program the following term. Course work in the major must be taken in sequence; transfer students should anticipate that additional semesters of study may be required to complete the program.

**Industrial Design Academic Standards**

The required INDD First Year Studio summer sequence is offered to students in good standing who meet the following criteria: completion of 24 credit hours of university work or with approval of the Department Head. Students are not required to have completed the INDD freshman model curriculum before enrolling in the summer semester INDD First Year Studio. The First year Studio sequence is only offered in the summer semester.

**Acceptance and Progression in the Professional Industrial Design Program** - The department maintains the right to select the most highly qualified students for admission to and for continuation in the INDD professional program. Enrollment is restricted in upper-level professional INDD studios (second, third, and fourth year) and based on INDD GPA. Students not admitted into an upper level professional INDD studio may retake the summer studio sequence in subsequent years and are re-ranked against new applicants and available resources in that year level. The department reserves the right to retain original work accomplished as part of course instruction.

After a student is accepted into the summer semester First Year Studio, they must make at least a grade of C or higher in studio courses in order to be considered for progression in the program. Grades below C in studio courses 1310 through 4210 must be repeated. Design courses must be taken in sequence unless otherwise approved by the department head. A portfolio and presentation are required for graduation.

**Special Opportunities for Qualified Students** – The Department of Industrial and Graphic Design Study Abroad programs are design experiences, with students sharing studios and workshops at colleges and universities in England, Ireland, Northern Ireland, Scotland, and Taiwan, Hong Kong.

**Transfer Students for Industrial Design** – Please contact the department head of Industrial Design for information on transferring into Industrial Design.

**Architecture**

The bachelor of architecture degree is awarded upon the completion of the five-year curriculum. Qualified students may elect to pursue concurrently a second bachelor of interior architecture degree.

**Curriculum in Architecture (FOUNDATION UNIT)**

FR	F	S		F	S
			Core Fine Arts ***	**	3
ENGL	1100	1120	English Composition I & II	3	3
MATH	1610		Calculus I or 1150	4	**
PHYS		1500	General Physics I	**	4
<b>ARCH</b>	<b>1000</b>		<b>Careers in Design &amp; Const</b>	<b>1</b>	<b>**</b>
<b>ARCH</b>		<b>1420</b>	<b>Intro to Digital Media</b>	<b>**</b>	<b>2</b>
<b>ARCH</b>	<b>1060</b>		<b>Visual Communications</b>	<b>2</b>	<b>**</b>
<b>ARCH</b>	<b>1010</b>	<b>1020</b>	<b>Arch Design I &amp; II</b>	<b>5</b>	<b>5</b>
				<b>15</b>	<b>17</b>

<b>SO</b>					
			Core Social Science Group 1	**	3
BSCI		2400	Structures I	**	3
ARCH	2210		Energy Conscious Design	3	**
ARCH		2220	Environmental Controls	**	2
<b>ARCH</b>	<b>2010</b>	<b>2020</b>	<b>Studio I &amp; II</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>2110</b>	<b>3110</b>	<b>Architectural History I &amp; II</b>	<b>3</b>	<b>3</b>
<b>ARCH</b>	<b>3320</b>		<b>Materials &amp; Methods I</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>17</b>

To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Design Review Committee [reference CADC Auburn University Bulletin entry].

<b>JR</b>					
ENGL	2200		World Literature I	3	**
BSCI	3400		Structures II	3	**
SCMH		1010	Concepts of Science	**	4
<b>ARCH</b>	<b>3010</b>	<b>3020</b>	<b>Studio III &amp; IV</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>3410</b>	<b>3410</b>	<b>Dessein Elective</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>	<b>3700</b>		<b>Seminar in Hist. &amp; Theory</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>	<b>4320</b>		<b>Materials &amp; Methods II</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>16</b>

<b>SR</b>					
			Elective	**	3
ENGL		2210	World Literature II	3	3
BSCI	3450		Structures III	3	**
CPLN	5000		History & Theory of Urban Form	3	**

			Interdisciplinary Prof Elective*	**	3
<b>ARCH</b>	<b>3120</b>		<b>Architectural History III</b>	<b>3</b>	<b>**</b>
<b>ARCH</b>	<b>4010</b>	<b>4020</b>	<b>Studio V &amp; VI</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>4500</b>		<b>Professional Practice</b>	<b>**</b>	<b>3</b>
				<b>15</b>	<b>18</b>
<b>FIFTH YR</b>					
HIST			History Core I & II	3	3
			Core Philosophy	3	**
			Core Social Science Group II	**	3
<b>ARCH</b>	<b>5010</b>		<b>Studio VII</b>	<b>**</b>	<b>6</b>
<b>ARCH</b>		<b>5020</b>	<b>Thesis Studio</b>	<b>**</b>	<b>7</b>
<b>ARCH</b>	<b>5990</b>		<b>Introduction to Research</b>	<b>2</b>	<b>**</b>
<b>ARCH</b>		<b>5991</b>	<b>Thesis Research</b>	<b>**</b>	<b>1</b>
<b>ARCH</b>			<b>Seminar**</b>	<b>**</b>	<b>3</b>
UNIV		4AA0	AR1 Undergraduate Graduation	**	0
				<b>17</b>	<b>14</b>

**TOTAL HOURS - 159**

- \* See advisor for list of approved CADC courses.
- \*\* See advisor for approved ARCH Seminars.
- \*\*\* ARCH students may not take ARCH-2600

**Curriculum in Architecture (SUMMER DESIGN)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
HIST			History Core I & II	3	3
MATH	1610		Calculus I	4	**
PHYS		1500	General Physics I	**	4
			Core Fine Arts ***	3	**
			Elective	**	3
<b>ARCH</b>	<b>1000</b>		<b>Careers in Design &amp; Const</b>	<b>1</b>	<b>**</b>
				<b>14</b>	<b>13</b>

<b>SUMMER</b>					
<b>ARCH</b>	<b>1010</b>		<b>Arch Design I</b>	<b>5</b>	
<b>ARCH</b>	<b>1020</b>		<b>Arch Design II</b>	<b>5</b>	
<b>ARCH</b>	<b>1060</b>		<b>Visual Communications</b>	<b>2</b>	
<b>ARCH</b>	<b>1420</b>		<b>Intro to Digital Media</b>	<b>2</b>	
				<b>14</b>	

<b>SO</b>					
BSCI		2400	Structures I	**	3
BSCI	3100		Energy Conscious Design	3	**
BSCI		3110	Environmental Controls	**	2
<b>ARCH</b>	<b>2010</b>	<b>2020</b>	<b>Studio I &amp; II</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>2110</b>	<b>3110</b>	<b>Architectural History I &amp; II</b>	<b>3</b>	<b>3</b>
<b>ARCH</b>	<b>3320</b>		<b>Materials &amp; Methods I</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>14</b>

To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Design Review Committee [reference CADC Auburn University Bulletin entry].

<b>JR</b>					
BSCI	3400		Structures II	3	**
ENGL	2200		World Literature I	3	**
<b>ARCH</b>	<b>3010</b>	<b>3020</b>	<b>Studio III &amp; IV</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>3410</b>		<b>Dessein Elective</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>	<b>3700</b>		<b>Seminar in Hist. &amp; Theory</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>	<b>4320</b>		<b>Materials &amp; Methods II</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>12</b>

<b>SR</b>					
ENGL		2210	World Literature I I	**	3
BSCI	3450		Structures III	3	**
			Interdisciplinary Prof Elective *	**	3
CPLN	5000		History & Theory of Urban Form	3	**
<b>ARCH</b>	<b>3110</b>	<b>3120</b>	<b>Architectural History III</b>	<b>3</b>	<b>**</b>
<b>ARCH</b>	<b>4010</b>	<b>4020</b>	<b>Studio V &amp; VI</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>4500</b>		<b>Professional Practice</b>	<b>**</b>	<b>3</b>
				<b>15</b>	<b>15</b>

<b>FIFTH YR</b>					
			Core Philosophy	**	3
			Core Social Science Group I	3	**
			Concepts of Science	4	**
SCMH	1010		Studio VII	6	**
<b>ARCH</b>	<b>5010</b>		<b>Thesis Studio</b>	<b>**</b>	<b>7</b>
<b>ARCH</b>		<b>5020</b>	<b>Introduction to Research</b>	<b>2</b>	<b>**</b>
<b>ARCH</b>	<b>5990</b>		<b>Thesis Research</b>	<b>**</b>	<b>1</b>
<b>ARCH</b>	<b>5991</b>		<b>ARCH Seminar**</b>	<b>**</b>	<b>3</b>
			Core Social Science Group II	**	3
UNIV		4AA0	AR1 Undergraduate Graduation	**	0
				<b>18</b>	<b>14</b>

**TOTAL HOURS - 159**

- \* See advisor for list of approved CADC courses.
- \*\* See advisor for approved ARCH Seminars.
- \*\*\* ARCH students may not take ARCH 2600

Active participation in the National Council of Architectural Registration Boards Intern Development Program (IDP) is encouraged after completion of the third year in the curriculum. IDP is a pre-requisite to licensing in the State of Alabama.

In the United States, most state registration boards require a degree from an accredited professional degree program as a pre-requisite for

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licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes two types of degrees: the bachelor of architecture and the master of architecture. A program may be granted a six, three or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre- professional degree is not, by itself, recognized as an accredited degree.

The five-year bachelor of architecture degree is accredited by the National Architectural Accrediting Board. The four-year pre-professional bachelor of science in environmental design is not a professionally accredited degree.

Auburn University is a member of the Association of Collegiate Schools of Architecture.

Students are encouraged to work at an architect's office, on a construction site or in another approved professional endeavor prior to their fourth year.

Interior Architecture

The bachelor of interior architecture degree program offers a holistic approach to design that focuses on the relationship between interior and exterior space. Interior Architecture students develop enhanced critical thinking abilities in relation to the construction of space, progressive materiality, sustainability, and representation. Auburn has integrated Interior Architecture and Architecture in this unique program resulting in the granting of two degrees upon completion of the fifth year of study. It is not possible to get the undergraduate degree in interior architecture without the dual Architecture professional degree. Architecture students must apply separately to the Interior Architecture Program through a competitive application process. The graduate who receives a bachelor of interior architecture degree and a bachelor of architecture degree is a person trained in interior architecture and architecture who is qualified to sit for an Architectural License Exam after completing IDP and then sit for the NCIDIQ Exam for Interiors, based on a transcript review. See advisor for details.

Curriculum in Architecture/Interior Architecture (FOUNDATION UNIT)

FR	F	S		F	S
			Core Fine Arts ***	**	3
ENGL	1100	1120	English Composition I & II	3	3
MATH	1610		Calculus I	4	**
PHYS		1500	General Physics I	**	4
<b>ARCH</b>	<b>1000</b>		<b>Careers in Design &amp; Const</b>	<b>1</b>	<b>**</b>
<b>ARCH</b>		<b>1420</b>	<b>Intro to Digital Media</b>	<b>**</b>	<b>2</b>
<b>ARCH</b>	<b>1060</b>		<b>Visual Communications</b>	<b>2</b>	<b>**</b>
<b>ARCH</b>	<b>1010</b>	<b>1020</b>	<b>Arch Design I &amp; II</b>	<b>5</b>	<b>5</b>
				<b>15</b>	<b>17</b>
<b>SO</b>					
			Core Social Science Group 1	**	3
BSCI		2400	Structures I	**	3
BSCI	3100		Energy Conscious Design	3	**
BSCI		3110	Environmental Controls	**	2
<b>ARCH</b>	<b>2010</b>	<b>2020</b>	<b>Studio I &amp; II</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>2110</b>	<b>3110</b>	<b>Architectural History I &amp; II</b>	<b>3</b>	<b>3</b>
<b>ARCH</b>	<b>3320</b>		<b>Materials &amp; Methods I</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>17</b>
<b>JR</b>					
ENGL	2200		World Literature I	3	**
BSCI	3400		Structures II	3	**
SCMH		1010	Concepts of Science	**	4
<b>ARIA</b>	<b>3020</b>		<b>Studio IV - A</b>	<b>6</b>	<b>**</b>
<b>ARCH</b>		<b>3020</b>	<b>Studio IV</b>	<b>**</b>	<b>6</b>
<b>ARCH</b>		<b>3410</b>	<b>Dessein Elective</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>		<b>3700</b>	<b>Seminar in Hist. &amp; Theory</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>	<b>4320</b>		<b>Materials &amp; Methods II</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>16</b>
<b>SR</b>					
ENGL		2210	World Literature II	**	3
BSCI	3450		Structures III	3	**
CPLN	5000		History & Theory of Urban Form	3	**
<b>ARCH</b>	<b>3120</b>		<b>Architectural History III</b>	<b>3</b>	<b>**</b>
<b>ARIA</b>	<b>4020</b>		<b>Studio VI - A</b>	<b>6</b>	<b>**</b>
<b>ARCH</b>		<b>4020</b>	<b>Studio VI</b>	<b>**</b>	<b>6</b>

To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Design Review Committee [reference CADC Auburn University Bulletin entry].

<b>ARCH</b>	<b>4500</b>	<b>Professional Practice</b>	<b>**</b>	<b>3</b>
<b>ARIA</b>	<b>2160</b>	<b>2150</b>	<b>Elements of Interior Design I &amp; II</b>	<b>3</b>
				<b>18</b>
<b>SUMMER</b>				
<b>ARIA</b>	<b>4030</b>	<b>Thesis</b>	<b>6</b>	
<b>ARIA</b>	<b>4080</b>	<b>Thesis Research</b>	<b>2</b>	
<b>ARIA</b>	<b>4450</b>	<b>Professional Practice</b>	<b>2</b>	
<b>ARIA</b>	<b>4680</b>	<b>History of IA</b>	<b>3</b>	
				<b>13</b>
<b>FIFTH YR</b>				
		History Core I & II	3	3
		Core Philosophy	3	**
		Core Social Science Group II	**	3
<b>ARCH</b>	<b>5010</b>	<b>Studio VII</b>	<b>6</b>	<b>**</b>
<b>ARCH</b>	<b>5020</b>	<b>Thesis Studio</b>	<b>**</b>	<b>7</b>
<b>ARCH</b>	<b>5990</b>	<b>Introduction to Research</b>	<b>2</b>	<b>**</b>
<b>ARCH</b>	<b>5991</b>	<b>Thesis Research</b>	<b>**</b>	<b>1</b>
<b>ARCH</b>		<b>Seminar**</b>	<b>3</b>	<b>**</b>
<b>UNIV</b>	<b>4AA0</b>	<b>AR1 Undergraduate Graduation</b>	<b>**</b>	<b>0</b>
				<b>17</b>

TOTAL HOURS - 172

- \* ARCH students may not take ARCH 2600
- \*\* See advisor for approved ARCH Seminars.

Curriculum in Architecture/Interior Architecture (Summer Design)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
HIST			History Core I & II	3	3
MATH	1610		Calculus I	4	**
PHYS		1500	General Physics I	**	4
			Core Fine Arts ***	3	**
			Core Social Science Group I	**	3
<b>ARCH</b>	<b>1000</b>		<b>Careers in Design &amp; Const</b>	<b>1</b>	<b>**</b>
				<b>14</b>	<b>13</b>
<b>SUMMER</b>					
<b>ARCH</b>	<b>1010</b>	<b>Arch Design I</b>	<b>5</b>		
<b>ARCH</b>	<b>1020</b>	<b>Arch Design II</b>	<b>5</b>		
<b>ARCH</b>	<b>1060</b>	<b>Visual Communications</b>	<b>2</b>		
<b>ARCH</b>	<b>1420</b>	<b>Intro to Digital Media</b>	<b>2</b>		
				<b>14</b>	
<b>SO</b>					
BSCI		2400	Structures I	**	3
BSCI	3100		Energy Conscious Design	3	**
BSCI		3110	Environmental Controls	**	2
<b>ARCH</b>	<b>2010</b>	<b>2020</b>	<b>Studio I &amp; II</b>	<b>6</b>	<b>6</b>
<b>ARCH</b>	<b>2110</b>	<b>3110</b>	<b>Architectural History I &amp; II</b>	<b>3</b>	<b>3</b>
<b>ARCH</b>	<b>3320</b>		<b>Materials &amp; Methods I</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>14</b>

To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Design Review Committee [reference CADC Auburn University Bulletin entry].

<b>JR</b>					
BSCI	3400		Structures II	3	**
ENGL	2200		World Literature I	3	**
<b>ARIA</b>	<b>3020</b>		<b>Studio IV-A Interior Arch</b>	<b>6</b>	<b>**</b>
<b>ARCH</b>		<b>3020</b>	<b>Studio IV</b>	<b>**</b>	<b>6</b>
<b>ARCH</b>		<b>3410</b>	<b>Dessein Elective</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>		<b>3700</b>	<b>Seminar in Hist. &amp; Theory</b>	<b>**</b>	<b>3</b>
<b>ARCH</b>	<b>4320</b>		<b>Materials &amp; Methods II</b>	<b>3</b>	<b>**</b>
				<b>15</b>	<b>12</b>
<b>SR</b>					
ENGL		2210	World Literature I I	**	3
BSCI	3450		Structures III	3	**
CPLN	5000		History & Theory of Urban Form	3	**
<b>ARCH</b>	<b>4020</b>	<b>3120</b>	<b>Architectural History III</b>	<b>3</b>	<b>**</b>
<b>ARCH</b>		<b>4020</b>	<b>Studio VI-A Interior Arch</b>	<b>6</b>	<b>**</b>
<b>ARCH</b>		<b>4020</b>	<b>Studio VI</b>	<b>**</b>	<b>6</b>
<b>ARCH</b>		<b>4500</b>	<b>Professional Practice</b>	<b>**</b>	<b>3</b>
<b>ARIA</b>	<b>2160</b>	<b>2150</b>	<b>Elements of Interior Architecture I &amp; II</b>	<b>3</b>	<b>3</b>
				<b>18</b>	<b>15</b>
<b>SUMMER</b>					
<b>ARIA</b>	<b>4030</b>	<b>Thesis</b>	<b>6</b>		
<b>ARIA</b>	<b>4080</b>	<b>Thesis Research</b>	<b>2</b>		
<b>ARIA</b>	<b>4450</b>	<b>Professional Practice</b>	<b>2</b>		
<b>ARIA</b>	<b>4680</b>	<b>History of IA</b>	<b>3</b>		
				<b>13</b>	
<b>FIFTH YR</b>					
SCMH	1010		Concepts of Science	4	**
<b>ARCH</b>	<b>5010</b>		<b>Studio VII</b>	<b>6</b>	<b>**</b>
<b>ARCH</b>		<b>5020</b>	<b>Thesis Studio</b>	<b>**</b>	<b>7</b>
<b>ARCH</b>	<b>5990</b>		<b>Introduction to Research</b>	<b>2</b>	<b>**</b>
<b>ARCH</b>		<b>5991</b>	<b>Thesis Research</b>	<b>**</b>	<b>1</b>
<b>ARCH</b>			<b>ARCH Seminar**</b>	<b>3</b>	<b>**</b>
			Core Social Science Group II	**	3
<b>UNIV</b>	<b>4AA0</b>		<b>AR1 Undergraduate Graduation</b>	<b>**</b>	<b>0</b>
				<b>15</b>	<b>14</b>

**TOTAL HOURS - 172**

- \* See advisor for list of approved CAD/C courses.
- \*\* See advisor for approved ARCH Seminars.
- \*\*\* ARCH students may not take ARCH 2600

**Building Science**

Students in the Building Science program learn the basic principles of science, architecture, engineering, business and construction. The four-year curriculum leads to the bachelor of science in building construction, accredited by the American Council for Construction Education. Graduates qualify for positions in all areas of the construction industry.

Students must maintain professional standards of behavior, as outlined in the Tiger Cub, at all times while on university property and while participating in school-sponsored trips, events, and activities. Failure to do so may be grounds for dismissal from the program.

The Cooperative Education Program is offered after completion of two semesters of study at Auburn.

Non-majors will be accepted in BSCI classes on a space-available basis.

<b>Curriculum in Building Science</b>				
FR	F	S	F	S
ENGL	1100	1120	English Composition I & II .....	3 3
MATH	1610		Calculus I.....	4 **
HIST			Core History I & II .....	3 3
			Core Fine Arts .....	** 3
			Core Philosophy .....	3 **
PHYS		1500	General Physics I .....	** 4
<b>BSCI</b>	<b>1100</b>		<b>History &amp; Intro to Construction .....</b>	<b>3 **</b>
<b>BSCI</b>		<b>1200</b>	<b>Work Drawing &amp; Specs .....</b>	<b>** 3</b>
				<b>16 16</b>
<b>SO</b>				
			Core Social Science Group I .....	** 3
ECON	2020		Microeconomics.....	3 **
ENGL	2200	2210	World Literature I & II.....	3 3
PHYS		1510	General Physics II.....	** 4
COMM		1000	Public Speaking .....	** 3
ACCT	2810		Fundamentals of Accounting Principles .....	3 **
<b>BSCI</b>	<b>2300</b>	<b>2350</b>	<b>Materials Methods/Equip I &amp; II.....</b>	<b>3 3</b>
<b>BSCI</b>	<b>2400</b>		<b>Structures I .....</b>	<b>3 **</b>
				<b>15 16</b>
<b>JR</b>				
ENGL	3040 or 3080		Technical Writing or Business Writing .....	3 **
MNGT	3810		Management Foundations .....	3 **
MNGT		3460	Organizational Behavior .....	** 3
<b>BSCI</b>	<b>3400</b>	<b>3450</b>	<b>Structures II &amp; III.....</b>	<b>3 3</b>
<b>BSCI</b>	<b>3500</b>	<b>3550</b>	<b>Construction Info Technology I &amp; II .....</b>	<b>3 3</b>
<b>BSCI</b>	<b>3600</b>	<b>3650</b>	<b>Project Controls I &amp; II.....</b>	<b>4 4</b>
<b>BSCI</b>		<b>3700</b>	<b>Safety &amp; Hoisting.....</b>	<b>** 3</b>
				<b>16 16</b>
<b>SUMMER*</b>				
	<b>BSCI</b>	<b>3300</b>	<b>Field Surveying .....</b>	<b>2</b>
<b>SR</b>				
GEOL		1100	Physical Geology.....	** 4
FINC	2400		Personal Finance.....	3 **
<b>BSCI</b>		<b>4400</b>	<b>Construction Structures .....</b>	<b>** 2</b>
<b>BSCI</b>	<b>4600</b>		<b>Project Controls III .....</b>	<b>4 **</b>
<b>BSCI</b>	<b>4700</b>		<b>Building Equipment.....</b>	<b>3 **</b>
<b>BSCI</b>	<b>4750</b>		<b>Soils &amp; Earthmoving Equip .....</b>	<b>2 **</b>
<b>BSCI</b>	<b>4800</b>		<b>Contracting Business .....</b>	<b>3 **</b>
<b>BSCI</b>		<b>4850</b>	<b>Business &amp; Construction Law .....</b>	<b>** 3</b>
<b>BSCI</b>		<b>4990</b>	<b>Thesis .....</b>	<b>** 4</b>
UNIV		4AA0	AR1 Undergraduate Graduation.....	** 0
				<b>15 13</b>

**TOTAL HOURS - 125**

- \* Surveying camp is a 10 working day course held during the Spring/Summer break and the Summer/Fall break.

**Environmental Design -- Bachelor of Science in Environmental Design**

The bachelor of science in environmental design is a flexible multi-disciplinary degree. The degree content includes the five core environmental design courses, directed electives and free electives. Students are encouraged to utilize the free electives to earn one or two minors. Two summers of coursework are required for the environmental design workshop course series. The degree is a good option for students who are interested in pursuing graduate studies in design, planning and construction related programs.

Students who pursue the environmental design degree will learn core knowledge of design and construction disciplines and business practices related to human-designed environments, including awareness of national

and global perspectives. Exposure to national/global environmental design issues, focus on interdisciplinary concepts, hybrid practices, and sustainability are key aspects of the curriculum. A two part workshop course series allows students to focus on developing a general technical skill set for environmental design foundations. Digital media introduction, structure and fabrication techniques, design communication development are included. A capstone workshop requires students to initiate and complete a community engagement environmental design project using principles of collaboration, leadership and effectiveness training, hands-on experience, civic engagement and design communication skills.

**Curriculum in Environmental Design**

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II .....	3 3
HIST			History Core .....	3 3
MATH			Math Core .....	3 **
			Science Core.....	** 4
			Directed Elective 1 (1-2000 level).....	3 **
			Free Elective.....	3 3
				<b>15 13</b>
<b>SO</b>				
			Science Core II .....	4 **
			Soc Science Core I.....	** 3
			Free Elective .....	6 3
			Fine Arts Core .....	3 **
			Directed Elective 2 .....	** 3
ENGL	2200	2210	ENGL Literature I & II.....	3 3
<b>ENVD</b>	<b>2000</b>	<b>2000</b>	<b>ENVD Concepts &amp; Practices I .....</b>	<b>** 3</b>
				<b>16 15</b>
<b>SUMMER*</b>				
	<b>ENVD</b>	<b>2100</b>	<b>Workshop I .....</b>	<b>6</b>
			Directed Elective 3 .....	3
				<b>9</b>
<b>JR</b>				
			Soc Science Core II.....	3 **
<b>ENVD</b>	<b>3000</b>	<b>3100</b>	<b>ENVD Concepts &amp; Practices II .....</b>	<b>3 **</b>
			<b>ENVD Civic Engage. &amp; Research Methods .....</b>	<b>** 3</b>
			Directed elective 4.....	3 **
			Directed elective 5.....	** 3
INDD		3220	Free Elective.....	6
				<b>15 15</b>
<b>Summer*</b>				
	<b>ENVD</b>	<b>4100</b>	<b>Workshop II/Capstone .....</b>	<b>6</b>
			Free Elective.....	3
				<b>9</b>
<b>SR</b>				
ENGL	2200	2210	Philosophy Core.....	3
			Free Elective.....	10
UNIV		4AA0	AR1 Undergraduate Graduation.....	0
				<b>13</b>

**TOTAL HOURS - 120**

Admission required - See Advisor for details.

**Environmental Design -- Bachelor of Science in Environmental Design, Pre-Landscape Architecture Track**

The bachelor of science in environmental design pre-landscape architecture track is preparation for the Master of Landscape Architecture graduate program. Pre-landscape architecture students begin taking the first three semesters of the Master of Landscape Architecture program in the summer after their third year of undergraduate study. Successful performance in the coursework leads to advanced placement in the Master of Landscape Architecture program. A successful student may complete the Bachelor of Science in Environmental Design and the first professional Master of Landscape Architecture in 5 years (including 3 summers).

See Advisor for current curriculum model.

**Graphic Design**

The Graphic Design program in the Department of Industrial and Graphic Design prepares students to practice visual communication in a competitive global environment. Graphic Design students follow a curriculum that provides variety and depth in all aspects of the field, supported by Fine Arts electives. Varied career opportunities range from the development of strategies to implement large-scale communications campaigns, to the design of effective communication products such as magazines, logo and identity development, interactive media, web design, packaging, exhibitions, illustration, and environmental graphics. Graphic design students have excellent opportunities for internship and cooperative education experiences as a result of well established relationships with regional, national and international companies and firms.

**Curriculum in Graphic Design**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core Science .....	4	4
GDES	1110	1120	Drawing I & II .....	3	3
GDES	1210	1220	Design I & II .....	3	3
ARTS	1710	1720	Art History I & II .....	3	3
				16	16
SO			World Literature I & II .....	3	3
ENGL	2200	2210	Core History .....	3	3
ARTS	2110		Figure Drawing .....	3	**
GDES	2210		Processes .....	4	**
GDES	2220		Typographics I .....	4	**
GDES		2230	Introduction to Graphic Design .....	**	4
ARTS			2000-level Fine Art Studio .....	**	6
				17	16
JR			Core Social Science Group I & II .....	3	3
ARTS	1730		Art History III .....	3	**
GDES	3710		Graphic Design History .....	4	**
GDES		3210	Photo Design [or Image I (4640) or Image II (4650)] .....	**	4
GDES		4240	Graphic Design I .....	**	4
ARTS			2000/3000-level Fine Art Studio .....	**	6
GDES			3000/4000-level Graphic Design Studio .....	2-4	**
			Elective .....	3	**
				15-17	17
SR			Core Philosophy .....	**	3
			Core Math .....	3	**
			Core Fine Arts (in MUSI or THEA) .....	**	3
ARTS			3000 Level Art History .....	3	**
GDES	4250		Graphic Design II .....	4	**
GDES		4990	Senior Project .....	**	4
ARTS/GDES			2000/3000/4000 Grph. Des./Fine Art/Hist .....	3	3
ARTS/GDES			3000/4000 Grph. Des./Fine Art/Hist .....	4	**
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0
				17	13

**TOTAL HOURS - 127**

ARTS 2000/3000/4000-level Studio: See advisor for approved course listing.  
 GDES 3000/4000-level Studio: See advisor for approved course listing.

**Industrial Design**

Students of Industrial Design learn the basic principles of design, engineering, human factors, marketing and sociology. They acquire such technical skills as computer-aided design and drafting, prototype fabrication, photography, sketching and graphics techniques. Students are introduced to design methods, color theory, product planning, visual statistics, materials, manufacturing methods, consumer psychology and environmental studies.

The four and a half year (nine semester) curriculum, which is accredited by the National Association of Schools of Art and Design, leads to the professional degree of bachelor of industrial design. Graduates will qualify for positions in industrial design consultant offices and in various industries. Motivated students will be considered for admission to the Graduate Program in industrial design. The Cooperative Education Program is offered at the completion of the second year of studio. A one semester internship experience is recommended before enrollment in the fourth year studio sequence.

**Curriculum in Industrial Design**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
HIST			History Core .....	3	3
MATH			Math Core .....	3	**
			Science Core .....	**	4
			Fine Arts Core .....	**	3
INDD	1120		Ind Design in Mod Soc .....	3	**
			Elective .....	3	**
				15	13
SUMMER					
	INDD	1310	Synthesis of Drawing .....	10	
	INDD	1320	Prototype Fabrication .....	3	
				13	
SO			Science Core .....	4	**
			Soc Science Core II .....	**	3
INDD	2110		2-D Industrial Design Principles .....	6	**
INDD	2120		Computer & Design Comm .....	3	**
INDD	2130		Rendering .....	3	**
INDD		2210	3-D Industrial Design Principles .....	**	6
INDD		2220	Anthropometry .....	**	3
INDD		2230	History of Ind Design .....	**	3
				16	15

**JR**

			Philosophy Core .....	3	**
			Soc Science Core I .....	**	3
INDD	3110		Exhibit Packaging .....	6	**
INDD	3120		Industrial Design Methods .....	3	**
INDD	3130		Photo for Industrial Design .....	3	**
INDD		3210	Product Design .....	**	6
INDD		3220	Materials & Technology .....	**	3
INDD		3230	Adv Computer Aided Design .....	**	3
				15	15
SR					
ENGL	2200	2210	World Literature I & II .....	3	3
INDD	4110		Advanced Product Design .....	6	**
INDD	5120		Professional Portfolio .....	3	**
INDD		4210	Industrial Design Thesis .....	**	6
INDD		4220	Professional Practice .....	**	3
UNIV		4AA0	AR1 Undergraduate Graduation .....	**	0
				12	12

**TOTAL HOURS - 126**

Required Elective - See Advisor for approved course listing.

**Post-Baccalaureate Industrial Design - Bachelor of Science in Environmental Design**

The bachelor of science in environmental design – post baccalaureate industrial design (EVDI-Post Bacc) is a NASAD accredited 43 hour program and is required for admission to the industrial design master's program by students who do not hold a bachelor's degree in industrial design. Students holding a previous bachelor's degree must have a 2.5 GPA are eligible to apply for the post baccalaureate degree. At the end of the bachelor of science in environmental design – post baccalaureate industrial design course students who choose not to pursue or who do not pass the Post Baccalaureate Review for admission to the master of industrial design program, can be awarded the bachelor of science in environmental design but must pursue careers elsewhere.

Bachelor of science in environmental design – post baccalaureate students seeking admission to the master of industrial design must take the Graduate Record Exam, maintain a 3.0 in all Industrial Design courses, and apply to the Graduate School during the first weeks of spring semester. During the last week of spring semester bachelor of science in environmental design – post baccalaureate students who are master of industrial design candidates must prepare for the Post Baccalaureate Review (display of representative work from all Industrial Design classes taken). Students who fail the review are given additional course requirements to be completed before a second and last review can be scheduled. Once the Post Baccalaureate Review is successfully completed and the bachelor of science in environmental design – post baccalaureate degree awarded, students can proceed with their application to the Graduate School.

**Curriculum in Environmental Design – Post-Baccalaureate Industrial Design**

If a bachelor of science in environmental design degree is/was received, a graduate must apply for re-admission to be a candidate for any other degree offered by the college. Please contact the CADC Office of Student Services for more information on this degree option and curriculum.

**SUMMER**

INDD	1310	Synthesis of Drawing .....	10		
INDD	1320	Prototype Fabrication .....	3		
INDD	5970	Special Problems .....	2		
			15		
	F	S	F	S	
INDD	2110		Two Dimensional Principles .....	6	**
INDD	2120		Computer & Design Communications .....	3	**
INDD	2130		Rendering .....	3	**
INDD	3120		Industrial Design Methods .....	3	**
INDD		3210	Product Design .....	**	6
INDD		3220	Materials & Technology .....	**	3
INDD		2220	Anthropometry .....	**	3
INDD		5970	Special Problems .....	**	1
UNIV		4AA0	AR1 Graduation Check - BSEV .....	**	0
				15	13

**TOTAL HOURS - 43, INDD/BSEV-POST BACC EVDI**

Admission required - See Advisor for details.

# College of Business

BILL C. HARDGRAVE, *Dean*

AMITAVA MITRA, *Associate Dean for Academic Affairs and Research*

DANIEL M. GROPPER, *Associate Dean for MBA Programs*

THE COLLEGE OF BUSINESS prepares students to become effective and socially responsible managers of business, industrial organizations, and government agencies and responsible citizens and leaders of society. To achieve this goal, the college offers undergraduate programs leading to the bachelor of science in business administration. In addition, it offers graduate work for the degrees of master of business administration (MBA), master of science in business administration (MSBA) with concentrations in finance, and human resources management (currently discontinued), master of accountancy (MAc), and the doctor of philosophy (PhD) in management. Students may also enroll in the master of science in management Information Systems (MSIS) program. The College of Business and the School of Accountancy are accredited at the undergraduate and graduate levels by the Association to Advance Collegiate Schools of Business (AACSB International). Detailed information on graduate programs may be found in the Graduate School section in this bulletin.

## Curriculum

The undergraduate curriculum includes a two-year Pre-Business Program required of all students and a two-year Professional Program. These programs provide a balanced course of study for all students, with approximately one-half of the hours in business courses and one-half in courses offered outside the college. The courses required have been selected so that all students will have access to the "common body of knowledge" as designated by the Association to Advance Collegiate Schools of Business (AACSB International).

**The Pre-Business Program**, followed by all business students in their freshman and sophomore years, provides a sound foundation of work in the arts and sciences, including courses in mathematics, humanities, social sciences and natural sciences. This lower division program also includes some of the introductory business courses.

**The Professional Programs** are offered through the School of Accountancy and the departments of Aviation and Supply Chain Management; Finance; Management; and Marketing. The professional program plans allow each student to concentrate in an area of interest during the junior and senior years. The 12 options available include: accountancy (ACCT), finance (FINC), international business (IBUS), business administration (BSAD), human resources management (HRMN), management information systems (ISMN), entrepreneurship and family business (ENFB), management (MNGT), marketing (MKTG), supply chain management (SCMN), aviation management (AVMG) and professional flight management (AVMF). Through these programs, the college seeks to develop in its students the analytical, decision-making and communication skills required of managers who lead modern organizations.

## Admission to the College

Students entering the pre-business program directly from high school or another college or university, in addition to meeting Auburn University's admission requirements, should have competence in the mathematics taught in second year algebra.

Incoming freshmen and external transfer students are admitted directly to the College of Business. Internal transfer students must apply for admission. Applications are available at the beginning of each semester at [www.business.auburn.edu/advising](http://www.business.auburn.edu/advising).

## Admission to Business Courses

To be eligible to take business courses students are required to meet certain academic requirements based on their college entry date. Students are required to maintain a 2.2 Auburn cumulative GPA.

## Graduation Requirements

To be graduated, business students must meet the hours and subject matter requirements of their curricula, must have an overall GPA of at least 2.0 on all courses attempted at Auburn University, must have an overall GPA of at least 2.0 in all course required for the major, and must

meet all other university requirements. At least 50 percent of the business credit hours required for the business degree must be taken at Auburn University.

## Student Advising System

The Office of Student Affairs of the College of Business is responsible for orienting all new students, freshmen and transferees to the college. Although not required, students are strongly encouraged to meet with their academic advisor each semester prior to registration to have their academic plan approved and obtain information about curricula, classes and other requirements. Students are encouraged to visit the college's advising Web page at [www.business.auburn.edu/advising](http://www.business.auburn.edu/advising) for details on creating an academic plan.

The Office of Professional and Career Development is available to all students for career guidance. Students are encouraged to seek advice on professional questions from department heads and faculty through personal arrangements or appointments. The Office of Student Affairs is available to assist students from other colleges or schools on campus who are interested in a business degree.

## Cooperative Education Program

Business students are eligible to participate in AU's Cooperative Education Program. This program allows students to combine academic training with actual business experience.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning (post-high school) college work fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Minors

For departmental minors, business courses must be at the 3000-level or above, with the exception of Aviation Management minor, and from an approved list.

### Accountancy Minor

15 semester hours in minor (3000-level or above)

**Courses required** **Cr. Hr.**

ACCT	3110	Intermediate Accounting I (Must earn 'C' or better).....	3
ACCT	3120	Intermediate Accounting II .....	3
Elective Courses - See advisor for approved course listing.			

### Aviation Management Minor

15 semester hours in minor (12 hours at 3000-level or above)

**Courses required** **Cr. Hr.**

AVMG	1010	Introduction to Aviation .....	3
AVMG	5090	Aviation Law and Insurance .....	3
Elective Courses - See advisor for approved course listing.			

### Finance Minor

15 semester hours in minor (3000-level or above)

**Courses required: NONE**

Elective Courses - See advisor for approved course listing.

### Information Assurance Minor

15 semester hours in minor

**Courses required** **Cr. Hr.**

ISMN	5670	Security & Information Assurance .....	3
Elective Courses - See advisor for approved course listing. For Business majors only.			

### Information Systems Management Minor

15 semester hours in minor (3000-level or above)

**Courses required** **Cr. Hr.**

ISMN	3040	Business Telecommunications .....	3
ISMN	3070	Business Computer Applications (must earn 'C' or better).....	3
ISMN	3830	Database Management .....	3
ISMN	4090	Analysis & Design of Busi Infor Sys .....	3
Elective Courses - See advisor for approved course listing.			

**International Business Minor**

15 semester hours in minor (3000-level or above)

**Courses required**

	<b>Cr. Hr.</b>
FINC 5510 Multinational Financial Management.....	3
ECON 4300 International Economics .....	3
MKTG 4400 International Marketing .....	3

Elective Courses - See advisor for approved course listing.

**Marketing Minor**

MKTG 3310 and 15 hours of marketing electives.

**Courses required**

	<b>Cr. Hr.</b>
MKTG 3310 Principles of Marketing .....	3

Elective Courses - See advisor for approved course listing.

**Supply Chain Management Minor**

15 semester hours in minor (3000-level or above)

**Courses required**

	<b>Cr. Hr.</b>
SCMN 3150 OPS: Management of Business Procedures .....	2
SCMN 3710 Logistics: Management of Fulfillment Processes.....	3
SCMN 3720 Transportation: Management of Production Flows .....	3
SCMN 3730 Purchasing: Supply Management and Servicing.....	3
SCMN 4810 Professional Development in SCM.....	1

Elective Courses - See advisor for approved course listing.

**Business Minor**

A business minor is available within the College of Business for non-business majors. The courses required correspond with the common body of knowledge as specified by AACSB International. Completion of these courses provides the basic understanding of the foundations of business administration and facilitates progress toward graduate work in business. The courses required for the business minor are: ECON 2020 ACCT 2110, FINC 3610 or 3810, MNGT 3100 or 3810, and MKTG 3310 or 3810. If any of these courses are taken to fulfill the University Core Curriculum requirement or a requirement in the major/professional option, alternative courses may be substituted on departmental approval. See course descriptions for appropriate prerequisites. Non-business majors who are seeking a business minor should consult with the Office of Student Affairs.

**Business-Engineering-Technology**

Students who minor in Business-Engineering-Technology learn, practice, and integrate entrepreneurship, engineering, and business management skills demanded by the technology-driven global economy, solve real-world case study and design problems, and work in cross-functional teams. The minor is a joint offering by the Colleges of Business and Engineering. Admission to the minor is competitive. Engineering and business majors apply for admission to the Business-Engineering-Technology Program as second semester sophomores. To remain in the program the cumulative GPA must be equal to or greater than 3.0.

16 semester hours in the minor

**Courses required**

	<b>Cr. Hr.</b>
ENGR 3510 Introduction to Engineering and Business.....	3
ENGR 3520 Integrat Bus. and Engr. Theories in Practice .....	3
BUSI 3550 Cross-Functional Teamwork.....	1
BUSI 3560 Leadership .....	1
BUSI 4540 Entrep & Strat. Mngt. of Tech. & Innov .....	4
ENGR 4970 Capstone Project I: Design Proposal .....	1
ENGR 4980 Capstone Project II: Design Project .....	3

**School of Accountancy (ACCT)**

The mission of the School of Accountancy at Auburn University is to prepare its students at the undergraduate and master's level to successfully compete in a very dynamic and challenging business environment. Through faculty excellence in instruction, research, outreach, the school will meet the needs of its students and other constituents by emphasizing the professional competencies necessary for both entry-level placement and rapid advancement within the business community.

The undergraduate degree prepares students for success in various public and private accounting careers. Students who plan to sit for the CPA Exam should consider a fifth year of study through the Master of Accountancy (MAc) Program. Students sitting for the CPA Exam in the State of Alabama must have completed a total of 150 semester hours of post secondary education, including a baccalaureate degree at an accredited college or university, with a concentration in accounting. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000- level and above courses.

**Curriculum in Accountancy**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Science.....	4	4
BUSI	1010		Contemp. Issues Bus. Admin. I.....	1	**
MGMT	2600		Business Analytics I .....	**	3
			Elective.....	**	3
				<b>15</b>	<b>16</b>
			<b>SO</b>		
			Core Social Science Group I.....	3	**
ECON	2020	2030	Micro & Macro Economics .....	3	3
ENGL	2200	2210	World Literature I & II.....	3	3
PHIL			1020 Ethics or 1040 Business Ethics.....	**	3
ACCT	2110		Principles of Financial Accounting.....	3	**
ACCT		2210	Principles of Managerial Accounting.....	**	3
ACCT		2990	Business Law .....	**	3
			Elective.....	4	**
				<b>16</b>	<b>15</b>
			<b>JR</b>		
MGMT	3600		Business Analytics II .....	3	**
FINC	3610		Principles of Finance.....	3	**
MKTG		3310	Principles of Marketing .....	**	3
MNGT		3100	Principles of Management .....	**	3
ISMN	3140		Intro to MIS.....	2	**
ACCT	3110	3120	Intermediate Accounting I & II .....	3	3
ACCT	3210		Cost Accounting.....	3	**
ACCT		3510	Accounting Info Systems.....	**	3
ACCT		4410	Income Tax I.....	**	3
			Elective.....	2	**
				<b>16</b>	<b>15</b>
			<b>SR</b>		
			Core Fine Arts.....	3	**
MNGT		4800	Strategic Management.....	**	3
ACCT		4310	Auditing & Assurance Services.....	**	3
			Accounting Elective.....	6	**
			Accounting Elective or Business Elective .....	**	3
			Business Elective.....	3	**
			Elective 3 .....	3	
			Elective ** .....	3	
UNIV		4AA0	BU1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 123**

Students not passing the University IT examination must take COMP 1000. Students have 18 hours of electives; these may be either non-business or business courses outside of Accounting. Accounting and business electives must be taken from an approved list.

**Department of Finance (FINC)**

**Finance**

The objective of the finance curriculum is to develop the specialized finance knowledge, techniques, and skills necessary for successful placement in finance related positions. The program encompasses the major areas of finance including corporate finance, financial institutions and markets, and investments. In addition, the program offers elective work in the subareas of real estate and risk management and insurance. The program will allow students the opportunity to develop not only the specialized knowledge of finance, but also the professional presentation and use of such knowledge through oral and written communication. Students enrolled in the finance program also complete the College of Business core curriculum designed to provide the broader understanding of the entire business organization including accounting, economics, management and marketing. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

**Curriculum in Finance**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Science.....	4	4
BUSI	1010		Contemp. Issues Bus. Admin.....	1	**
MGMT	2600		Business Analytics I .....	**	3
			Elective.....	**	3
				<b>15</b>	<b>16</b>
			<b>SO</b>		
			Core Social Science Group I.....	3	**
ECON	2020	2030	Micro & Macro Economics .....	3	3
ENGL	2200	2210	World Literature I & II.....	3	3
PHIL			1020 Ethics or 1040 Business Ethics.....	**	3



ACCT	2110	Principles of Financial Accounting .....	3	**
<b>ACCT</b>	<b>2210</b>	<b>Principles of Managerial Accounting .....</b>	<b>**</b>	<b>3</b>
ACCT	2990	Business Law .....	**	3
		Elective .....	4	**
			<b>16</b>	<b>15</b>
<b>JR</b>				
MGMT	3600	Business Analytics II .....	3	**
MNGT	3100	Principles of Management .....	3	**
MKTG	3310	Principles of Marketing .....	3	**
<b>FINC</b>	<b>3610</b>	<b>Principles of Finance .....</b>	<b>3</b>	<b>**</b>
<b>ACCT</b>	<b>3110</b>	<b>Intermediate Accounting I .....</b>	<b>3</b>	<b>**</b>
<b>FINC</b>	<b>3630</b>	<b>Advanced Business Finance .....</b>	<b>**</b>	<b>3</b>
<b>FINC</b>	<b>3700</b>	<b>Financial Markets &amp; Institutions .....</b>	<b>**</b>	<b>3</b>
		<b>Finance Elective .....</b>	<b>**</b>	<b>3</b>
		Elective .....	6	**
			<b>15</b>	<b>15</b>
<b>SR</b>				
		Fine Arts Core .....	3	**
MNGT	4800	Strategic Management .....	**	3
<b>FINC</b>	<b>3640</b>	<b>Investments .....</b>	<b>3</b>	<b>**</b>
		<b>Finance Elective .....</b>	<b>3</b>	<b>6</b>
		Elective .....	7	6
UNIV	4AA0	BU1 Undergraduate Graduation .....	**	0
			<b>16</b>	<b>15</b>

**TOTAL HOURS - 123**

Students not passing the University IT examination must take COMP 1000. Finance electives must be selected from an approved list.

**International Business**

The objective of the program is to provide students with not only the business preparation necessary for success in the global environment, but also the foreign language skills to effectively communicate in that environment. The IBUS curriculum is designed to provide maximum flexibility and broad-based preparation for future career opportunities.

Graduates are prepared for entry-level positions in many areas of business activity depending upon their particular area of concentration within business. Within the language component, students must select from French, German, or Spanish.

**Curriculum in International Business**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
BUSI	1010		Contemp. Issues in Bus. Admin. ....	1	**
			Foreign Language .....	4	4
MGMT	2600		Business Analytics I .....	**	3
			Elective .....	**	2
				<b>15</b>	<b>15</b>
<b>SO</b>					
			Core Social Science Group I .....	3	**
ECON	2020	2030	Micro & Macro Economics .....	3	3
ENGL	2200	2210	World Literature I & II .....	3	3
ACCT	2110		Principles of Financial Accounting .....	3	**
ACCT		2210	Principles of Managerial Accounting .....	**	3
ACCT		2990	Business Law .....	**	3
			<b>Foreign Language .....</b>	<b>4</b>	<b>4</b>
				<b>16</b>	<b>16</b>
<b>JR</b>					
			Core Science .....	4	4
MNGT	3100		Principles of Management .....	**	3
MKTG	3310		Principles of Marketing .....	3	**
FINC	3610		Principles of Finance .....	3	**
MGMT	3600		Business Analytics II .....	3	**
			<b>Business Concentration .....</b>	<b>**</b>	<b>3</b>
			<b>Foreign Language Comp. &amp; Conv. ....</b>	<b>3</b>	<b>3</b>
			Elective .....	**	2
				<b>16</b>	<b>15</b>
<b>SR</b>					
PHIL			1020 Ethics or 1040 Business Ethics .....	**	3
<b>FINC</b>	<b>5510</b>		<b>Multinational Finc Mngt .....</b>	<b>3</b>	<b>**</b>
MNGT		4800	Strategic Management .....	**	3
			<b>Business Concentration .....</b>	<b>3</b>	<b>6</b>
			<b>Foreign Business Language .....</b>	<b>3</b>	<b>**</b>
<b>ECON</b>	<b>4300</b>		<b>International Economics .....</b>	<b>3</b>	<b>**</b>
			Fine Arts Core .....	**	3
			Elective .....	**	3
UNIV		4AA0	BU1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 123**

Students not passing the University IT examination must take COMP 1000. Language sequence to be taken exclusively in French, Spanish, or German. A four-course Business Concentration must be selected from an approved list.

**Department of Management (MNGT)**

The Management Program prepares students in basic business functions as well as the process of management and the use of technology to support these functions and processes. The professional programs within the Department of Management are designed to impart knowledge that will assist future managers to be good decision makers for their organizations. The professional programs available are Human Resources Management (HRMN), Business Administration (BSAD), Management (MNGT), Management Information Systems (ISMN), and Entrepreneurship and Family Business (ENFB). College of Business prerequisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

**Human Resources Management (HRMN)**

The Human Resources Management Program provides a comprehensive education in human resources management. The primary goals are to provide knowledge and experience, oriented toward practical, on-the-job applications and prepare students for entry-level positions in private and public sector organizations. In addition, the Program provides excellent preparation for graduate or professional studies in Human Resources Management.

**Curriculum in Human Resources Management**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Science .....	4	4
BUSI	1010		Contemp. Issues Bus. Admin. ....	1	**
MGMT	2600		Business Analytics I .....	**	3
			Elective .....	**	3
				<b>15</b>	<b>16</b>
<b>SO</b>					
PHIL			1020 Ethics or 1040 Business Ethics .....	**	3
ECON	2020	2030	Micro & Macro Economics .....	3	3
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Social Science Group I .....	3	**
ACCT	2110		Principles of Financial Accounting .....	3	**
ACCT		2210	Principles Managerial Accounting .....	**	3
ACCT		2990	Business Law .....	**	3
			Elective .....	4	**
				<b>16</b>	<b>15</b>
<b>JR</b>					
			Core Fine Arts .....	3	**
MGMT	3600		Business Analytics II .....	3	**
<b>MNGT</b>	<b>3100</b>		<b>Principles of Management .....</b>	<b>3</b>	<b>**</b>
MKTG	3310		Principles of Marketing .....	3	**
		3610	Principles of Finance .....	**	3
<b>HRMN</b>	<b>3420</b>		<b>Human Resource Management .....</b>	<b>3</b>	<b>**</b>
<b>MNGT</b>	<b>3460</b>		<b>Organizational Behavior .....</b>	<b>**</b>	<b>3</b>
<b>HRMN</b>	<b>5540</b>		<b>HR Selection &amp; Placement .....</b>	<b>**</b>	<b>3</b>
			<b>HRMN Elective .....</b>	<b>**</b>	<b>3</b>
			Elective .....	**	3
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>MNGT</b>	<b>4800</b>		<b>Strategic Management .....</b>	<b>**</b>	<b>3</b>
<b>HRMN</b>	<b>5470</b>		<b>Employee Compensation .....</b>	<b>3</b>	<b>**</b>
<b>HRMN</b>	<b>5510</b>		<b>HR Planning, Develop, &amp; Appr. ....</b>	<b>3</b>	<b>**</b>
			<b>HRMN Elective .....</b>	<b>3</b>	<b>3</b>
			Elective .....	6	10
UNIV		4AA0	BU1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>16</b>

**TOTAL HOURS - 123**

Students not passing the University IT examination must take COMP 1000. HRMN electives must be selected from an approved listing.

**Business Administration (BSAD)**

The Business Administration program is an interdepartmental degree designed to provide maximum course flexibility and a broadbased preparation for future career opportunities. Students are required to demonstrate basic oral and written communication skills, familiarity with technological tools, and an understanding of the interrelationship between the United States and foreign countries with a comprehensive education in business management. The Business Administration program prepares students for entry-level managerial and staff responsibilities in business, government, and non-profit organizations.

College of Business

Curriculum in Business Administration

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II	3 3
			Core History	3 3
MATH	1680		Calculus with Business Applications	4 **
			Core Science	4 4
BUSI	1010		Contemp. Issues Bus. Admin.	1 **
MGMT	2600		Business Analytics I	** 3
			Elective	** 3
				15 16
<b>SO</b>				
PHIL			1020 Ethics or 1040 Business Ethics	** 3
ECON	2020	2030	Micro & Macro Economics	3 3
ENGL	2200	2210	World Literature I & II	3 3
			Core Social Science Group I	3 **
ACCT	2110		Principles of Financial Accounting	3 **
ACCT		2210	Principles Managerial Accounting	** 3
ACCT		2990	Business Law	** 3
			Elective	** 4
				16 15
<b>JR</b>				
			Core Fine Arts	3 **
MGMT	3600		Business Analytics II	3 **
MKTG	3310		Principles of Marketing	3 **
FINC		3610	Principles of Finance	** 3
<b>MNGT</b>	<b>3100</b>		<b>Principles of Management</b>	<b>3 **</b>
<b>ISMN</b>	<b>3140</b>		<b>OPS: Management of Business Processes</b>	<b>2 **</b>
<b>SCMN</b>	<b>3150</b>		<b>Introduction to MIS</b>	<b>2 **</b>
			<b>Business Elective</b>	<b>** 6</b>
			<b>MNGT Elective</b>	<b>** 3</b>
			Elective	** 3
				16 15
<b>SR</b>				
<b>MNGT</b>	<b>4800</b>		<b>Strategic Management</b>	<b>** 3</b>
			<b>Accounting or Finance Elective</b>	<b>3 **</b>
			<b>Business Elective</b>	<b>3 **</b>
			<b>International Business Elective</b>	<b>3 **</b>
			<b>Marketing or Supply Chain Elective</b>	<b>** 3</b>
			Business Elective	3 6
			Elective	3 3
UNIV		4AA0	BU1 Undergraduate Graduation	** 0
				15 15

TOTAL HOURS - 123

Students not passing the University IT examination must take COMP 1000.  
Business electives are College of Business courses at the 3000- to 5000-level (see approved list).  
Departmental Electives must be selected from an approved list.

Entrepreneurship and Family Business (ENFB)

The Entrepreneurship and Family Business program offers an opportunity for students to gain insight into the criteria necessary for new ventures and for the managing of family-oriented business endeavors. Focus of the curriculum is on both start-up activities and the development of skills necessary to manage publicly-held and privately-owned entrepreneurial operations.

Curriculum in Entrepreneurship and Family Business

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II	3 3
			Core History	3 3
MATH	1680		Calculus with Business Applications	4 **
			Core Science	4 4
BUSI	1010		Contemp. Issues Bus. Admin.	1 **
MGMT	2600		Business Analytics I	** 3
			Elective	** 3
				15 16
<b>SO</b>				
PHIL			1020 Ethics or 1040 Business Ethics	** 3
ECON	2020	2030	Micro & Macro Economics	3 3
ENGL	2200	2210	World Literature I & II	3 3
			Core Social Science Group I	3 **
ACCT	2110		Principles of Financial Accounting	3 **
ACCT		2210	Principles Managerial Accounting	** 3
ACCT		2990	Business Law	** 3
			Elective	** 4
				16 15
<b>JR</b>				
FINC	3610		Principles of Finance	3 **
MKTG	3310		Principles of Marketing	3 **
ISMN	3140		Introduction to MIS	2 **
SCMN	3150		OPS: Management of Business Processes	2 **
MGMT	3600		Business Analytics II	3 **
<b>FINC</b>	<b>3620</b>		<b>Small Business Finance</b>	<b>** 3</b>
<b>MNGT</b>	<b>3100</b>		<b>Principles of Management</b>	<b>** 3</b>
<b>ENFB</b>	<b>4140</b>		<b>Entrepreneurship</b>	<b>** 3</b>

			<b>Entrepreneurship Elective</b>	<b>** 3</b>
<b>ENFB</b>	<b>4170</b>		<b>Managing Entr Start-ups</b>	<b>** 3</b>
			Core Fine Arts	** 3
				16 15
<b>SR</b>				
			HRMN Elective	3 **
			Business Elective	3 **
<b>MNGT</b>	<b>4800</b>		<b>Strategic Management</b>	<b>** 3</b>
<b>ENFB</b>	<b>4190</b>		<b>New Venture Creation</b>	<b>** 3</b>
<b>ENFB</b>	<b>4180</b>		<b>Growth Strategies for Emerging Comp.</b>	<b>** 3</b>
			<b>Entrepreneurship Elective</b>	<b>3 **</b>
<b>ENFB</b>	<b>4200</b>		<b>Business Plan for New Venture</b>	<b>** 3</b>
			Elective	3 6
UNIV		4AA0	BU1 Undergraduate Graduation	** 0
				15 15

TOTAL HOURS - 123

Students not passing the University IT examination must take COMP 1000.  
Business electives are College of Business courses at the 3000- to 5000-level (see approved list).  
ENFB electives and HRMN electives must be selected from an approved list.

Information Systems Management (ISMN)

Information Systems Management program provides a comprehensive education in management information systems. A 2.2 cumulative GPA is required for enrollment in any MIS course. This rule applies to both Business and non-Business students. The primary goals are to provide knowledge and experience, oriented toward practical, on-the-job applications and prepare students for entry-level positions in private and public sector organizations. In addition, the program provides excellent preparation for graduate or professional studies in Information Systems Management. Students are cautioned that 3000- and 4000-level MIS courses have enforced pre-requisites and an earned grade of C or better must be obtained for all pre-requisites to 4000-level courses.

Curriculum in Information Systems Management

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II	3 3
			Core History	3 3
MATH	1680		Calculus with Business Applications	4 **
			Core Science	4 4
BUSI	1010		Contemp. Issues Bus. Admin.	1 **
MGMT	2600		Business Analytics I	** 3
			Elective	** 3
				15 16
<b>SO</b>				
PHIL			1020 Ethics or 1040 Business Ethics	** 3
ECON	2020	2030	Micro & Macro Economics	3 3
ENGL	2200	2210	World Literature I & II	3 3
			Core Social Science Group I	3 **
ACCT	2110		Principles of Financial Accounting	3 **
ACCT		2210	Principles Managerial Accounting	** 3
ACCT		2990	Business Law	** 3
			Elective	** 4
				16 15
<b>JR</b>				
MGMT	3600		Business Analytics II	3 **
MNGT		3100	Principles of Management	** 3
MKTG	3310		Principles of Marketing	3 **
FINC		3610	Principles of Finance	** 3
<b>ISMN</b>	<b>3040</b>		<b>Telecommunication Management</b>	<b>** 3</b>
<b>ISMN</b>	<b>3070</b>		<b>Business Computer Application</b>	<b>** 3</b>
<b>ISMN</b>	<b>3140</b>		<b>Introduction to MIS</b>	<b>** 2</b>
<b>SCMN</b>	<b>3150</b>		<b>OPS: Mngt. Of Business Processes</b>	<b>** 2</b>
<b>ISMN</b>	<b>3830</b>		<b>Database Management Systems</b>	<b>** 3</b>
<b>ISMN</b>	<b>3080</b>		<b>Advanced Programming and Computer Apps.</b>	<b>** 3</b>
			Fine Arts Core	3 **
				16 15
<b>SR</b>				
MNGT		4800	Strategic Management	** 3
<b>ISMN</b>	<b>4090</b>		<b>Analysis &amp; Design Business Sys</b>	<b>** 3</b>
			<b>ISMN Elective</b>	<b>** 6</b>
			Business Elective	3 3
			Elective	3 3
UNIV		4AA0	BU1 Undergraduate Graduation	** 0
				15 15

TOTAL HOURS - 123

Students not passing the University IT examination must take COMP 1000.  
ISMN Electives: See advisor for approved listing must be selected from an approved list.  
Business electives are College of Business courses at the 3000- to 5000-level (see approved list).

Management (MNGT)

The Management program provide a student a comprehensive overview of the skills necessary to compete in a managerial position in business. The program emphasizes such areas as behavioral dynamics, leadership skills, project management, business processes and logistics, international relations, as well as the management of information technology. It is designed to focus on those issues generic to both the manufacturing and service industries. These management skills, when complemented with the solid foundation provided by the Business core courses, equip the student with the necessary knowledge to become successful managers. One unique aspect of the program is a community service project geared toward helping the students understand the importance of community service and philanthropy in today's global economy.

Curriculum in Management

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Science .....	4	4
BUSI	1010		Contemp. Issues Bus. Admin.....	1	**
MGMT	2600		Business Analytics I .....	**	3
			General Elective .....	**	3
				15	16
<b>SO</b>					
ECON	2020	2030	Micro & Macro Economics .....	3	3
			Core Social Science Group I .....	3	**
ENGL	2200	2210	World Literature I & II.....	3	3
PHIL			1020 Ethics or 1040 Business Ethics.....	3	**
ACCT	2110		Principles of Financial Accounting .....	3	**
ACCT		2210	Principles Managerial Accounting.....	**	3
ACCT		2990	Business Law .....	**	3
			Fine Arts Elective.....	**	3
				15	15
<b>JR</b>					
MNGT	3100		Principles of Management .....	3	**
ISMN	3140		Introduction to MIS .....	2	**
SCMN	3150		OPS: Management of Business Processes .....	2	**
FINC	3610		Principles of Finance.....	3	**
MKTG		3310	Principles of Marketing .....	**	3
<b>MNGT</b>	<b>3460</b>		<b>Organizational Behavior .....</b>	<b>**</b>	<b>3</b>
<b>SCMN</b>	<b>3710</b>		<b>Demand Fulfillment.....</b>	<b>**</b>	<b>3</b>
			<b>Designated Financial Elective.....</b>	<b>**</b>	<b>3</b>
MGMT	3600		Business Analytics II .....	3	**
			General Elective .....	3	3
				16	15
<b>SR</b>					
MNGT	4600		Community Service Project.....	1	**
MNGT		4800	Strategic Management.....	**	3
<b>MNGT</b>	<b>3420</b>		<b>Human Resource Management .....</b>	<b>3</b>	<b>**</b>
<b>ENFB</b>	<b>4140</b>		<b>Introduction to Entrepreneurship .....</b>	<b>*</b>	<b>3</b>
<b>ISMN</b>	<b>5370</b>		<b>Project Management.....</b>	<b>**</b>	<b>3</b>
			<b>Designated Supply Chain Elective.....</b>	<b>3</b>	<b>**</b>
			<b>Designated International Elective.....</b>	<b>3</b>	<b>**</b>
			<b>Designated Info Systems Elective .....</b>	<b>3</b>	<b>**</b>
			<b>Designated Human Relations Elective .....</b>	<b>**</b>	<b>3</b>
			General Elective .....	3	3
UNIV		4AA0	BU1 Undergraduate Graduation .....	**	0
				16	15

Students not passing the University IT examination must take COMP 1000.  
Designated Electives must be selected from an approved.

Department of Marketing (MKTG)

Marketing majors discover the interrelationship of marketing with other management tools and prepare themselves for executive/managerial careers involving functional areas such as advertising, channel and product decision-making, pricing, retailing and strategic marketing. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

Curriculum in Marketing

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Science .....	4	4
BUSI	1010		Contemp. Issues Bus. Admin.....	1	**
MGMT	2600		Business Analytics I .....	**	3
			Elective .....	**	3
				15	16

<b>SO</b>					
PHIL			1020 Ethics or 1040 Business Ethics.....	**	3
ECON	2020	2030	Micro & Macro Economics.....	3	3
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I.....	3	**
ACCT	2110		Principles of Financial Accounting .....	3	**
ACCT		2210	Principles Managerial Accounting.....	**	3
ACCT		2990	Business Law .....	**	3
			Elective.....	**	4
				16	15
<b>JR</b>					
MGMT	3600		Business Analytics II .....	3	**
MNGT	3100		Principles of Management .....	3	**
ISMN		3140	Intro to MIS.....	**	2
SCMN		3150	OPS: Management of Business Processes .....	**	2
FINC	3610		Principles of Finance.....	3	**
<b>COMM</b>	<b>1000</b>		<b>Professional Communication.....</b>	<b>3</b>	<b>**</b>
<b>MKTG</b>	<b>3310</b>		<b>Principles of Marketing.....</b>	<b>3</b>	<b>**</b>
<b>MKTG</b>	<b>3310</b>	<b>3410</b>	<b>Consumer Behavior .....</b>	<b>**</b>	<b>3</b>
			<b>Marketing Elective .....</b>	<b>**</b>	<b>6</b>
			Elective.....	**	3
				15	16
<b>SR</b>					
			Core Fine Arts .....	3	**
<b>MNGT</b>	<b>4800</b>		<b>Strategic Management .....</b>	<b>**</b>	<b>3</b>
<b>MKTG</b>	<b>4360</b>		<b>Marketing Research.....</b>	<b>3</b>	<b>**</b>
<b>MKTG</b>	<b>4980</b>		<b>Marketing Strategy.....</b>	<b>**</b>	<b>3</b>
			<b>Marketing Elective .....</b>	<b>6</b>	<b>**</b>
			Elective.....	3	9
UNIV		4AA0	BU1 Undergraduate Graduation .....	**	0
				15	15

TOTAL HOURS - 123

Students not passing the University IT examination must take COMP 1000.  
Marketing Electives must be selected from an approved course listing.

Department of Aviation and Supply Chain Management (AVSC)

The Department of Aviation and Supply Chain Management prepares students for careers involving the planning and execution of processes related to the movement of passengers, product, and information. The professional programs within the Department are designed to provide students with the technical skills and knowledge needed to be effective decision makers for their organizations. The professional programs available are Aviation Management (AVMG), Professional Flight Management (AVMF), and Supply Chain Management (SCMN). Information regarding careers, internships, scholarships, and student organizations is available through the program coordinators. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

Aviation Management (AVMG)

The Aviation Management program provides a technical management background and specialization in aviation leading to careers with airlines, aircraft manufactures, airports, and other segments of the aviation industry. Individuals interested in registering in the Aviation Management concentration are advised to contact the program director for Aviation Management in the College of Business for proper counseling and classification.

Curriculum in Aviation Management

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Fine Arts .....	**	3
BUSI	1010		Contemp. Issues in Bus. Admin. I.....	1	**
<b>AMLG</b>	<b>1010</b>		<b>Introduction to Aviation .....</b>	<b>2</b>	<b>**</b>
PHIL			1020 Ethics or 1040 Business Ethics.....	**	3
MGMT	2600		Business Analytics I .....	**	3
			Elective.....	**	3
				16	15
<b>SO</b>					
SCMH		1010	Concepts of Science.....	**	4
PHYS	1500		Physics I .....	4	**
ECON	2020	2030	Micro. & Macroeconomics .....	3	3
ENGL	2200	2210	World Literature I & II.....	3	3
ACCT	2110		Financial Accounting .....	3	**
ACCT		2210	Managerial Accounting .....	**	3
ACCT		2990	Business Law .....	**	3
			Core Social Science Group I.....	3	**
				16	16

College of Business

<b>JR</b>					
MNGT	3100	Principles of Management .....	3	**	
MKTG	3310	Principles of Marketing .....	**	3	
<b>SCMN</b>	<b>3150</b>	<b>OPS: Mngt of Business Processes .....</b>	<b>2</b>	<b>**</b>	
FINC	3610	Principles of Finance .....	**	3	
ENGL	3080	Business Writing .....	**	3	
<b>AVMG</b>	<b>3050</b>	<b>Severe and Hazardous Weather .....</b>	<b>3</b>	<b>**</b>	
<b>SCMN</b>	<b>3720</b>	<b>Transportation: Mngt of Production Flows .....</b>	<b>3</b>	<b>**</b>	
<b>AVMN</b>	<b>4060</b>	<b>Transportation Safety Mngt .....</b>	<b>**</b>	<b>3</b>	
<b>AVMG</b>	<b>3140</b>	<b>Performance Evaluation and Measurement .....</b>	<b>**</b>	<b>3</b>	
MGMT	3600	Business Analytics II .....	3	**	
			<b>14</b>	<b>15</b>	
<b>SR</b>					
<b>AVMG</b>	<b>3200</b>	<b>Applied Operations in Transportation .....</b>	<b>3</b>	<b>**</b>	
MNGT	4800	Strategic Management .....	**	3	
<b>AVMG</b>	<b>5090</b>	<b>Aviation Law and Policy .....</b>	<b>3</b>	<b>**</b>	
<b>AVMG</b>	<b>4190</b>	<b>Air Space Management .....</b>	<b>3</b>	<b>**</b>	
HRMN	3420	Human Resources Management .....	3	**	
<b>AVMG</b>	<b>4810</b>	<b>Professional Development .....</b>	<b>**</b>	<b>1</b>	
<b>AVMG</b>	<b>5180</b>	<b>Global Air Transportation Management .....</b>	<b>**</b>	<b>3</b>	
		<b>Directed Elective .....</b>	<b>**</b>	<b>3</b>	
		Elective .....	3	6	
UNIV	4AA0	BU1 Undergraduate Graduation .....	**	0	
			<b>15</b>	<b>16</b>	

**TOTAL HOURS - 123**

Students not passing the University IT examination must take COMP 1000.  
Directed Electives must be selected from an approved course listing.

**Professional Flight Management (AVMF)**

Professional Flight Management program provides the technical management background and specialization as does the Aviation Management concentration. Additionally, students pursuing the Professional Flight Management concentration are required to earn the pilot ratings that are required to meet the qualifications to be hired as a pilot with the airlines or corporate aviation. Also, the Professional Flight Management students must have, and maintain, a minimum overall grade point average of 2.25 to enroll in Professional Flight Management courses.

**Curriculum in Professional Flight Management**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I .....	**	3
MATH	1680		Calculus with Business Applications .....	4	**
SCMH		1010	Concepts of Science .....	**	4
BUSI	1010		Contemp. Issues in Bus. Admin. I .....	1	**
<b>AVMG</b>	<b>1010</b>		<b>Introduction to Aviation .....</b>	<b>2</b>	<b>**</b>
<b>AVMF</b>	<b>2230</b>		<b>Principles of Instrument Flight .....</b>	<b>3</b>	<b>**</b>
<b>AVMF</b>	<b>2241</b>	<b>2251</b>	<b>Instrument Flight Training I &amp; II .....</b>	<b>1</b>	<b>3</b>
MGMT	2600		Business Analytics I .....	**	1
			Elective .....	**	2
				<b>14</b>	<b>16</b>
<b>SO</b>					
			Core History II .....	3	**
PHYS	1500		Physics I .....	4	**
ECON	2020	2030	Micro. & Macroeconomics .....	3	3
ENGL	2200	2210	World Literature I & II .....	3	3
ACCT		2110	Financial Accounting .....	**	3
			Core Social Science Group I .....	**	3
PHIL			1020 Ethics or 1040 Business Ethics .....	**	3
<b>AVMF</b>	<b>2250</b>		<b>Comm Flight Operations .....</b>	<b>3</b>	<b>**</b>
<b>AVMF</b>	<b>2261</b>		<b>Commercial Flight Training II .....</b>	<b>**</b>	<b>1</b>
<b>AVMF</b>		<b>2271</b>	<b>Commercial Flight Training III .....</b>	<b>**</b>	<b>1</b>
				<b>17</b>	<b>16</b>
<b>JR</b>					
ACCT	2210		Managerial Accounting .....	3	**
ACCT		2990	Business Law .....	**	3
MNGT	3100		Principles of Management .....	3	**
MKTG	3310		Principles of Marketing .....	3	**
FINC		3610	Principles of Finance .....	**	3
<b>AVMG</b>	<b>3050</b>		<b>Severe and Hazardous Weather .....</b>	<b>3</b>	<b>**</b>
<b>SCMN</b>	<b>3150</b>		<b>OPS: Management of Business Processes .....</b>	<b>2</b>	<b>**</b>
<b>AVMG</b>	<b>3150</b>	<b>3140</b>	<b>Performance Evaluation and Measurement .....</b>	<b>**</b>	<b>3</b>
MGMT	3600		Business Analytics II .....	3	**
<b>SCMN</b>	<b>3720</b>		<b>Transportation: Production Flows .....</b>	<b>**</b>	<b>3</b>
<b>AVMF</b>	<b>4271</b>		<b>Multi-Engine Training I .....</b>	<b>**</b>	<b>1</b>
				<b>15</b>	<b>15</b>

<b>SR</b>					
			Core Fine Arts .....	3	**
<b>AVMG</b>	<b>3200</b>		<b>Applied Operations in Transportation .....</b>	<b>3</b>	<b>**</b>
MNGT	4800		Strategic Management .....	**	3
ENGL	3080		Business Writing .....	3	**
<b>AVMF</b>	<b>4060</b>		<b>Transportation Safety Management .....</b>	<b>3</b>	<b>**</b>
<b>AVMF</b>	<b>4400</b>		<b>Applied Aerodynamics and Propulsion .....</b>	<b>3</b>	<b>**</b>
<b>AVMG</b>	<b>4190</b>		<b>Air Space Management .....</b>	<b>**</b>	<b>3</b>
<b>AVMG</b>	<b>5090</b>		<b>Aviation Law and Policy .....</b>	<b>**</b>	<b>3</b>
<b>AVMG</b>	<b>4810</b>		<b>Professional Development .....</b>	<b>**</b>	<b>1</b>
<b>AVMG</b>	<b>5180</b>		<b>Global Air Transportation Management .....</b>	<b>**</b>	<b>3</b>
			Elective .....	**	2
UNIV	4AA0		BU1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>15</b>

Students not passing the University IT examination must take COMP 1000.

**Supply Chain Management (SCMN)**

The Supply Chain Management program combines logistics and operations management knowledge to provide a comprehensive education for students interested in careers with manufacturers, retailers, consultancies, and logistics services providers. The primary goal of the program is to provide a practical understanding of procurement, operations, logistics, and transportation so that graduates will excel in entry-level management positions, graduate school, and future opportunities.

**Curriculum in Supply Chain Management**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
MATH	1680		Calculus with Business Applications .....	4	**
			Core Science .....	4	4
BUSI	1010		Contemp. Issues Bus. Admin. ....	1	**
MGMT	2600		Business Analytics I .....	**	3
			Elective .....	**	3
				<b>15</b>	<b>16</b>
<b>SO</b>					
ECON	2020	2030	PHIL 1020 Ethics or PHIL 1040 Business Ethics .....	**	3
ENGL	2200	2210	Micro & Macro Economics .....	3	3
			World Literature I & II .....	3	3
			Core Social Science Group I .....	3	**
ACCT	2110		Principles of Financial Accounting .....	3	**
ACCT		2210	Principles Managerial Accounting .....	**	3
ACCT		2990	Business Law .....	**	3
			Elective .....	**	4
				<b>16</b>	<b>15</b>
<b>JR</b>					
MGMT	3600		Business Analytics II .....	3	**
MNGT		3100	Principles of Management .....	**	3
MKTG	3310		Principles of Marketing .....	3	**
FINC		3610	Principles of Finance .....	**	3
<b>SCMN</b>	<b>3150</b>		<b>OPS: Management of Business Processes .....</b>	<b>2</b>	<b>**</b>
<b>SCMN</b>	<b>3710</b>		<b>Logistics: Management of Fulfillment Processes .....</b>	<b>3</b>	<b>**</b>
<b>SCMN</b>	<b>3720</b>		<b>Transportation: Management of Product Flows .....</b>	<b>**</b>	<b>3</b>
<b>SCMN</b>	<b>3730</b>		<b>Purchasing: Supply Management and Sourcing .....</b>	<b>**</b>	<b>3</b>
			Elective .....	**	4
				<b>15</b>	<b>15</b>
<b>SR</b>					
MNGT	4800		Strategic Management .....	**	3
<b>SCMN</b>	<b>4800</b>		<b>Supply Chain Strategy: A Global Perspective .....</b>	<b>**</b>	<b>3</b>
<b>SCMN</b>	<b>4810</b>		<b>Prof Development in SCMN .....</b>	<b>**</b>	<b>1</b>
			<b>SCMN Concentration 1* .....</b>	<b>3</b>	<b>**</b>
			<b>SCMN Concentration 2* .....</b>	<b>3</b>	<b>**</b>
			<b>SCMN Concentration 3* .....</b>	<b>**</b>	<b>3</b>
			<b>Directed Elective* .....</b>	<b>3</b>	<b>3</b>
			Core Fine Arts .....	3	**
			Elective .....	3	3
UNIV	4AA0		BU1 Undergraduate Graduation .....	**	0
				<b>16</b>	<b>15</b>

**TOTAL HOURS - 123**

Students not passing the University IT examination must take COMP 1000.

\* Supply Chain Management concentration courses and directed electives must be selected from an approved list.

# College of Education

BETTY LOU WHITFORD, Dean  
SUSAN K. VILLAUME, Associate Dean

THE COLLEGE OF EDUCATION prepares competent, committed, and reflective professionals to help build a better future for individuals, our state, our nation, and our world. Teaching and non-teaching programs are offered in the college's four academic departments: Curriculum and Teaching; Educational Foundations, Leadership, and Technology; Kinesiology; and Special Education, Rehabilitation, and Counseling. Information about the college's undergraduate and graduate programs is available in this bulletin, on the College of Education Web site (<http://education.auburn.edu>), and from departments.

**Admission to the College.** Freshman eligibility is determined by the Office of Enrollment Services and is outlined elsewhere in this bulletin. Transferring into a teacher education program requires a minimum 2.5 GPA on all college coursework attempted and on all coursework attempted at Auburn. Transfers from other institutions must apply through the Office of Enrollment Services. On-campus students may request a transfer into the college by contacting Professional Education Services, 3464 Haley Center.

College of Education students are charged a fee for professional liability insurance.

## Undergraduate Teacher Education Programs

The college's teacher education programs are designed to ensure that program graduates have the knowledge, skills, and dispositions to help all students learn. These programs maintain selective admission, retention, and graduation requirements and are in compliance with the Alabama State Board of Education's rules for teacher education.

**Accreditation and Approvals.** Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). All programs preparing teachers and other professional school personnel are approved by the Alabama State Board of Education. In addition, the state of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of AU's graduates when they apply for certification in other states.

**Admission to Teacher Education.** The first transition point in teacher education programs is admission to teacher education. Criteria are noted below.

- Completion and submission of the Admission to Teacher Education Application
- Completion of 45 semester hours in the program
- Satisfactory completion or current enrollment in the orientation course
- Minimum 2.5 grade-point average on all college coursework attempted as well as all coursework attempted at Auburn, in professional studies, and in the teaching field
- Satisfactory performance in the pre-teaching experience
- A passing score on each of the Alabama Prospective Teacher Testing Program's basic skills assessments (Applied Mathematics, Reading for Information, and Writing assessments)
- Documentation of clear background check
- Satisfactory completion of a professional interview

Students who fail to meet these criteria upon initial application may submit new evidence in an effort to satisfy admission to teacher education requirements. Meeting the above criteria at a minimum level does not guarantee admission into teacher education. Two teacher education programs, early childhood education and elementary education, have restricted enrollments. For additional information about admission to these programs, see section below on Undergraduate Programs with Restricted Enrollments.

**Admission to Internship.** The second transition point in teacher education programs is admission to internship. Criteria are noted below.

- Completion and submission of the Internship Application one year in advance (include Intern Coversheet for Early Childhood and Elementary Education if appropriate)
- Admission to Teacher Education
- Satisfactory completion of all courses on the program checklist designated as prerequisites for internship
- Satisfactory completion of all required pre-internship field experiences

- Minimum 2.5 grade-point average on all college coursework attempted as well as all coursework attempted at Auburn, in professional studies, and in the teaching field
- No grade below a C in professional studies courses
- A passing score on the appropriate Alabama Prospective Teacher Testing Program's Praxis II subject assessment
- Demonstrated potential for teaching with departmental approval

Students who fail to meet these criteria may submit new evidence in an effort to satisfy admission to internship requirements.

**Graduation.** To be eligible for graduation, students must meet the following criteria.

- Registration for UNIV 4AA0 ED1 (graduation check)
- Completion of all courses on the program checklist (Note: Approvals of Course Substitution Request/s must be on file in Professional Education Services, 3464 Haley.)
- Minimum 2.5 grade-point average on all college coursework attempted as well as all coursework attempted at Auburn, in professional studies, and in the teaching field
- No grade below a C in professional studies courses
- Satisfactory performance in internship including satisfactory completion of required internship assessments

**Certification.** The associate dean for academic affairs has been designated as the teacher certification officer for Auburn University. To obtain certification in the state of Alabama, program graduates must submit a completed certification application with required processing fee to Professional Education Services, 3464 Haley Center.

Program graduates who delay obtaining Alabama certification may be subject to changes made in teacher certification requirements between the time of graduation and the time of the certification request. Students seeking certification in other states should contact those state certification offices to obtain their application forms and requirements.

**Assurance of Competence.** The College of Education guarantees the success of graduates who receive initial professional certification through the college and who are employed within their area(s) of specialization. The college will provide remediation at no cost to an individual who was recommended for certification by the College of Education and whose job performance within two years after program completion is deemed unsatisfactory by a local education agency based on performance evaluations established by the Alabama State Board of Education.

**Field Experiences.** Students in teacher education programs participate in sequential learning opportunities in public school and community settings throughout their programs.

The pre-teaching experience is a prerequisite for admission to Teacher Education. This five-day experience is intended to provide the opportunity for students to observe the school as a total organization and increase their awareness of the teaching profession. The primary focus is observation and reflection.

Additional field experiences are conducted concurrently with enrollment in professional education courses. These pre-internship experiences provide students with multiple opportunities to work with diverse learners in schools and communities.

Internship is the culminating field-based experience and spans a full semester. This experience immerses interns in the learning community and provides them with intensive and extensive opportunities to develop and demonstrate competence in the professional roles for which they are preparing.

**Dual Objectives Programs.** Students in other schools and colleges of the university who wish to complete requirements for graduation in an academic department and also to complete the degree requirements of a teacher education program may pursue a dual objectives program. Students should inquire in their dean's office to determine if their college/school participates in dual objectives programs.

Students electing to pursue a dual objectives program will have an advisor in the academic department in which they are enrolled and an advisor in the College of Education. Advising students concerning the curriculum of the academic department, including the major and other requirements, will be the responsibility of the advisor in that department. The responsibility for advising students on matters concerning the teacher

education program will be that of the advisor in the College of Education. The semester course schedule of the students will be approved by both advisors. Information describing dual objectives programs is available in the Professional Education Services Office of the College of Education, 3464 Haley Center, and in the dean's office where the students are enrolled.

Students enrolled in the College of Education who desire to complete certification requirements in more than one teaching field are required to complete all coursework for each program, including an internship in each area of specialization.

**Program Options.** The following table shows undergraduate teacher education program options available in the College of Education. Music Education (P-12) and secondary education programs in English language arts, foreign language, mathematics, science, and social science meet the university requirements for an academic major.

Department and Program	Grade Levels				
	P-3	K-6	4-8*	6-12	P-12
<b>Curriculum and Teaching</b>					
Agriscience Education				X	
Business and Marketing				X	
Chemistry				X	
Early Childhood	X				
Elementary		X			
English Lang. Arts/English			*	X	
French			*	X	
General Science/Biology			*	X	
General Social Science/History			*	X	
Geography				X	
German			*	X	
Mathematics			*	X	
Music, Instrumental					X
Music, Instrumental and Vocal					X
Music, Vocal					X
Physics				X	
Spanish			*	X	
<b>Kinesiology</b>					
Physical Education					X
<b>Special Education, Rehabilitation, and Counseling</b>					
Collaborative Teacher		X		X	
Early Childhood Special Education (birth through 8 years)					

\* Students completing these Secondary Education (6-12) programs may complete additional coursework to add a Middle School (4-8) teaching endorsement.

### Undergraduate Non-teaching Programs

The college offers several baccalaureate non-teaching programs. Exercise science and health promotion are offered in the Department of Kinesiology. Rehabilitation and Disability Studies is offered in the Department of Special Education, Rehabilitation, and Counseling.

The undergraduate program in exercise science is a high demand program and requires an application process for students enrolled in pre-exercise science or desiring to transfer from another major. Due to limited enrollment, all students who meet minimum criteria may not be admitted. Information regarding minimum admission criteria and the application process is available on the Web site for the Department of Kinesiology, [http://education.auburn.edu/academic\\_departments/kine/](http://education.auburn.edu/academic_departments/kine/).

### Undergraduate Programs with Restricted Enrollments

Due to high demand, three College of Education undergraduate programs have restricted enrollments: early childhood education, elementary education, and exercise science. Information about admissions into these programs is noted below.

**Early Childhood Education.** A total of 75 early childhood education applicants are admitted to teacher education each year with admission decisions occurring in fall and spring. Applications are considered only if students have met all criteria noted in the Admission to Teacher Education section above with the exception of the professional interview. Fall semester 25 applicants are accepted and begin a cohort sequence the following spring; spring semester, 25 applicants are admitted to begin a cohort sequence summer term and 25 applicants are admitted to begin fall semester. Beginning fall 2011, rankings for early childhood education will be determined by the overall GPA (all course work completed at Auburn and transfer) and a professional interview which includes review of a resume, a writing sample and a face-to-face interview.

**Elementary Education.** A total of 75 elementary education applicants are admitted each year with admission decisions occurring in fall and spring. Applications are considered only if students have met all criteria noted in the Admission to Teacher Education section above. Fall semester 50 applicants are accepted and begin a cohort sequence the following spring semester; spring semester 25 applicants are accepted and begin a cohort sequence the following fall semester. Beginning fall 2011, rankings

for elementary education applicants will be determined by the overall GPA (all course work completed at Auburn and transfer) and a professional interview which includes a review of a resume, a writing sample, and a face-to-face interview.

**Exercise Science.** A total of 60 exercise science applicants are admitted each year to a junior level cohort (30 students admitted spring to begin a four semester sequence the following fall and 30 students admitted fall to begin the four semester sequence the following spring). To be eligible to apply for the exercise science program, applicants must fulfill the following minimum requirements: (1) minimum GPA of 2.5 on all college coursework attempted and all coursework attempted at Auburn University; (2) completion of 30 hours of AU core coursework (must include ENGL 1100, ENGL 1120, and BIOL 1020/1021L); (3) completion of BIO 1020/1021L with a C or better; completion of 4 additional hours of science required in the exercise science program (i.e., BIOL 1030/1031L, BIOL 2500, BIOL 2510, PHYS 1500, CHEM 1030/1031L); (4) completion and submission of application, including a resume and a 300 word essay explaining the applicant's interest in the desired major and career goals. Final decisions regarding admission are based on completion of all requirements noted above, the English GPA, and the science GPA.

### Graduate Programs

All departments in the college offer graduate programs in education-related professions. Programs lead to master's, specialist, and doctoral degrees. Non-traditional graduate programs include the following:

- Alternative master's certification programs offer qualified students who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree.
- Students with a master's degree in education may apply for a non-degree program that leads to sixth-year certification.

### Learning Resources Center

The Learning Resources Center (LRC), located in 3408/3410 Haley Center, is a service unit for the College of Education. The LRC provides instructional technology services which include video recordings, computer software, audio recordings, kits, books, and periodicals for the education profession. Two computer classrooms, a Micro-Center, and the college computer network are managed by the LRC. LRC personnel assist faculty and students with the production, selection, and utilization of newer instructional and informational technologies. Distance education technologies and support services are provided. Art design and digital document production services are available to College of Education faculty and staff.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

### Minors

#### Office Systems Management Minor

15 semester hours in minor

Courses required		Cr. Hr.
CTCT	1200 Keyboarding & Formatting .....	3
CTCT	2200 Document Processing .....	3
CTCT	3000 Leadership Skills for Pers./Org. Dev .....	3
CTCT	3200 Records Management .....	2
CTCT	3240 Information Processing I .....	3
CTCT	3250 Information Processing II .....	3
CTCT	4200 Managing Office Systems .....	3
CTCT	4940 Directed Field Experience in Bus. Ed .....	3
CTCT	4970 Special Topics in Bus. & Office Ed .....	1-3

**Non-degree Program.** The Physical Activity and Wellness Program is a non-degree program that requires 8 hours (4 courses), including PHED 1100, Wellness, and 3 courses (each one from a different category of physical activity). Categories include cardio-respiratory fitness (PHED 1200), fitness and conditioning (PHED 1300), team sports (PHED 1400), individual sports (PHED 1500), performance activities (PHED 1600), and aquatic skills (PHED 1700). Students who complete the 8-hour program may apply for a Physical Activity and Wellness Certificate, issued by the Department of Kinesiology. Students may also elect to take individual courses, without completing the 8-hour program. Of course, students may elect to take more than 4 courses if they desire to use the program to ensure a regular physical activity program.

Departmental Curricula for Undergraduate Programs

Curriculum models appear below by department for all undergraduate programs. Teaching programs are presented first followed by non-teaching programs. Program checklists are available from Professional Education Services, 3464 Haley Center.

Curriculum and Teaching

(Teacher Education Programs)

Curriculum in Agriscience Education

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
MATH	1130		Pre-Calculus Trigonometry	3	**
			Core History I & II	3	3
			Core Philosophy	**	3
BIOL	1020		Principles of Biology and Lab (1021)	4	**
BIOL		1030	Organismal Biology and Lab (1031)	**	4
EDUC	1010		Orientation	1	**
			Elective or ROTC	**	3
				14	16
SO					
CHEM	1010		Survey of Chemistry	3	**
CHEM	1011		Survey of Chemistry Lab	1	**
ENGL	2200	2210	World Literature I & II	3	3
			Core Social Science Group I	3	**
			Core Fine Arts	**	3
ECON		2020	Microeconomics	**	3
ANSC		1000	Intro to Animal & Dairy Science	**	4
HORT	2020		Horticulture Crop Production	3	**
POUL	1000		Introductory Poultry Science OR		
EDMY	3500		Forestry Sm Wldnd Ownrs	3	**
EDMD		3300	Utilization Instructional Tech+	**	2
CTCT		4940	Field Experience	**	1
				16	16
JR					
AGRN	2040		Soils	4	**
AGEC		3010	Agribusiness Marketing OR		
AGEC		4000	Principles of Agribusiness Management	**	3
CTCT		2100	Power Equip Technology	**	3
CTCT		4900	Dir. Independent Study OR		
CTCT		4910	Practicum	**	2
			Ag Electives	3	3
FOUN	3000		Diversity of Learners & Settings+	3	**
RSED	3000		Diversity & Exceptionality of Learners+	3	**
FOUN		3110	Adol Dev Learn Mot & Assess I*	**	3
FOUN		3120	Adol Dev Learn Mot & Assess II*	**	3
HORT	2210		Landscape Gardening	4	**
				17	17
SR					
ENVI	1020		Fund of Environmental Science	2	**
CTCT	4000		Class/Lab Mgt, Org, Eval*+	2	**
CTCT	5050		Teaching in AOS*+	3	**
CTCT		5060	Program Planning in AOS*++	**	3
CTCT	4140		Structures & Metal Fab	3	**
CTCT		4920	Professional Internship**	**	10
FISH	5210		Prin of Aquaculture OR		
FISH	5520		Sm Impndmt Mgt	3	**
			Ag Electives	3	**
UNIV		4AA0	Ed1 Undergraduate Graduation	**	0
				16	13

TOTAL HOURS - 125

Directed Elective: See adviser for approved course listing.  
 \* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

Curriculum in Business and Marketing Education

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
			Core History I & II	3	3
			Core Social Science Group I	3	**
			Core Fine Arts	3	**
			Core Math	**	3
ECON		2020	Microeconomics	**	3
EDUC	1010		Orientation+	1	**
				13	12
SO					
ENGL	2200	2210	World Literature I & II	3	3
			Core Science	4	4
			Core Philosophy	3	**
ACCT		2990	Business Law	**	3
ACCT	2110		Prin Fin Acct	3	**
CTCT	2200		Document Processing	3	**
FINC		2400	Personal Fin or HDFS 2020 Fam Res Mngt	**	3
EDMD		3300	Utilization Instructional Tech	**	2
				16	15

JR					
FOUN	3000		Diversity of Learners & Settings+	3	**
RSED	3000		Diversity & Exceptionality of Learners+	3	**
FOUN		3110	Adol Dev Learn Mot & Assess I*	**	3
FOUN		3120	Adol Dev Learn Mot & Assess II*	**	3
MKTG	3310		Principles of Marketing	3	**
CTCT		3200	Records Management	**	2
CTCT	3240	3250	Information Processing I & II	3	3
MNGT	3100		Principles of Management	3	**
MNGT	3070		Business Computer Applications/Elective	3	**
ENGL		3080	Business Writing	**	3
				18	14

SR					
CTCT	3000		Leadership Skills for Personal & Org Develop	3	**
CTCT	4000		Class/Lab Mgt, Org, Eval*+	2	**
CTCT	4970		Special Topics in Bus. Educ. Or		
			CTCT 4900 Dir. Independent Study	3	**
CTCT	5050		Teaching in AOS*+	3	**
CTCT		5060	Program Planning in AOS*++	**	3
CTCT	4200		Managing Office Systems	3	**
CTCT		4920	Internship**	**	10
CTCT		4940	Dir Field Experience**	**	3
CTCT	5080		Coord & Sup Work Based Lrn or Dir. Elect.	3	**
UNIV		4AA0	Ed1 Undergraduate Graduation	**	0
				17	16

TOTAL HOURS - 121

Directed Elective: See adviser for approved course listing.  
 \* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

Curriculum in Early Childhood Education

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
			Core History I & II	3	3
			Core Science	4	4
			Core Math	3	**
			Core Social Science Group I & II	3	3
			Orientation +	1	**
MATH	1010	2850	Math for Elem Educ I	**	3
				17	16
SO					
ENGL	2200	2210	World Literature I & II	3	3
			Core Philosophy	3	**
			Core Fine Arts	**	3
HDFS		2010	Lifespan Human Development OR		
PSYC		2120	Developmental Psychology	**	3
EDMD	3300		Utilization Instructional Tech +	2	**
			Science Elective with Lab	4	**
MATH	2860	2870	Math for Elem Educ II & III or Math Elective	3	3
			Electives	1	3
				16	15
JR					
CTRD	3700		Fundamentals of Lang & Literacy I * +	3	**
CTEC	3020		Primary Math and Science *	3	**
ARTS		3010	Elementary Art OR		
EDMD		5100	Media for Children	**	3-4
CTMU		3040	Music and the Arts *	**	4
CTEC		4911	Preschool Practicum * +	**	3
KINE		2250	Motor Development	**	2
CTEC		3030	Intuitive Thought & Symbol Funct *	**	3
FOUN	3000		Diversity of Learners & Settings+	3	**
RSED	3000		Diversity & Exceptionality of Learners+	3	**
CTEC	3200		Work Theory Const Ed * +	3	**
				15	15-16

TOTAL HOURS - 122-123

Curriculum guides for the junior and senior year vary according to semester of admission to Teacher Education.  
 Some curriculum guides include a summer term. See adviser.  
 \* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

College of Education

Curriculum in Elementary Education

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I & II .....	3	3
			Core Biology Sequence .....	4	4
			Core Math .....	3	**
MATH	2850		Math Elem Educ I .....	**	3
			Core Social Science Group I & II .....	3	3
EDUC	1010		Orientation+ .....	**	1
				<b>16</b>	<b>17</b>
SO					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Philosophy .....	3	**
			Core Fine Arts .....	**	3
			PHYS 1000 or PHYS 1150 or GEOL 1100 or AGRN 3100 .....	4	**
MATH	2860		Math for Elem Educ II .....	3	**
			Approved HDFS or PSYC .....	**	3
EDMD	3300		Utilization Instructional Tech+ .....	**	2
MATH	2870		Math Elem Educ III or Math Elect Elective .....	**	3
				<b>15</b>	<b>15</b>
JR					
CTEE	3100		Intro to Elem Ed .....	3	**
CTRD	3700	3710	Fundamentals Lang & Lit Inst I & II * + .....	3	3
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FOUN	3100		Cd Dv Lrn Mot & Asmt * + .....	**	6
CTEE	4010		Curriculum Social Science * + .....	**	3
CTEE	4020		Curriculum Language Arts * + .....	**	3
CTMU	3040		Music & Related Arts* .....	4	*
				<b>16</b>	<b>15</b>
SR					
EDMD	5100		Children's Literature .....	3	**
CTEE	4920		Internship** .....	**	10
CTEE	4950		Prof Dev Seminar * ++ .....	**	2
CTEE	4030		Curriculum Science * + .....	3	**
CTEE	4040		Curriculum Mathematics * + .....	3	**
CTEE	4190		Effective Classroom Manag Elem School .....	3	**
KINE	4360		Hlth & PE in Elementary Schools .....	3	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>12</b>

TOTAL HOURS - 121

Curriculum guides for the junior and senior year vary according to semester of admission to Teacher Education.

Some curriculum guides include a summer term. See adviser.

\* Prerequisite: Admission to Teacher Education.

\*\* Prerequisite: Admission to Internship (application for internship is one year in advance).

+ Prerequisite for Admission to Internship.

++ Co-requisite with Internship.

Curriculum in English Language Arts Education/English

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I & II .....	3	3
			Core Science .....	4	4
			Core Math .....	3	**
			Core Philosophy .....	**	3
THEA	2010		Introduction to Theatre .....	**	3
COMM	1000		Public Speaking .....	**	3
EDUC	1010		Orientation+ .....	**	1
				<b>16</b>	<b>17</b>
SO					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Social Science Group II .....	**	3
			PSYC 2010 or SOCY 1000 .....	3	**
JRNL			Journalism Elective .....	2	**
			English Elective .....	9	9
EDMD	3300		Utilization Instructional Tech+ .....	**	2
				<b>17</b>	<b>17</b>
JR					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FOUN	3110		Ad Dev Lrn Mot & Asmt I * + .....	**	3
CTRD	5710		Lit & Inquiry in the Content Areas * + .....	3	**
CTSE	4150		Curriculum & Teaching I * + .....	**	4
CTSE	5010		Language Study for Teachers .....	3	**
CTRD	5030		The Reading of Adolescents .....	**	3
CTSE	5020		Rhetoric & Comp for Teachers .....	3	**
			English Ling/Rhet Elective .....	**	3
			English Writing Elective .....	3	**
			English Elective .....	**	3
				<b>18</b>	<b>16</b>
SR					
FOUN	3120		Ad Dev Lrn Mot & Asmt II * + .....	3	**
CTSE	4920		Internship** .....	**	10
CTSE	4160		Curriculum & Teaching II * + .....	4	**

CTSE	4200		Mgt Mid & HS Class * ++ .....	**	2
			English Elective .....	9	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				<b>16</b>	<b>12</b>

TOTAL HOURS — 129

English Elective, English Writing Elective, English Ling/Rhet Elective: See adviser for approved course listing.

\* Prerequisite: Admission to Teacher Education.

\*\* Prerequisite: Admission to Internship (application for internship is one year in advance).

+ Prerequisite for Admission to Internship.

++ Co-requisite with Internship.

Curriculum in Foreign Language Education/French

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I & II .....	3	3
			Core Science .....	4	4
			Core Math .....	3	**
			Core Philosophy .....	**	3
FLFR	2010	2020	Inter. French I & II .....	4	4
EDUC	1010		Orientation+ .....	**	1
				<b>17</b>	<b>18</b>
SO					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Fine Arts .....	3	**
			Social Science Group I & II .....	3	3
COMM	1000		Public Speaking .....	**	3
FLFR	3010		Phonetics & Diction .....	3	**
FLFR	3110	3110	French Civilization .....	**	3
FLFR	3030		French Conversation .....	3	**
FLFR	3040		French Composition .....	**	3
				<b>15</b>	<b>15</b>
JR					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FOUN	3110		Ad Dev Lrn Mot & Asmt I * + .....	**	3
FLFR	3100		Introduction to French Lit .....	3	**
CTSE	4070	4080	Curriculum & Teaching I & II * + .....	4	4
			FLFR Elective (3000 or above) .....	3	9
				<b>16</b>	<b>16</b>
SR					
FOUN	3120		Ad Dev Lrn Mot & Asmt II * + .....	3	**
CTSE	4920		Internship** .....	**	10
CTSE	4200		Mgt Mid & HS Class * ++ .....	**	2
EDMD	3300		Utilization Instructional Tech+ .....	**	2
			FLFR Elective (3000 or above) .....	6	**
			Free Elective .....	1	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				<b>12</b>	<b>12</b>

TOTAL HOURS — 121

FLFR Elective: See adviser for approved course listing.

\* Prerequisite: Admission to Teacher Education.

\*\* Prerequisite: Admission to Internship (application for internship is one year in advance).

+ Prerequisite for Admission to Internship.

++ Co-requisite with Internship.

Curriculum in Foreign Language Education/German

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I & II .....	3	3
			Core Math .....	3	**
			Core Philosophy .....	**	3
			Core Science .....	4	4
FLGR	2010	2020	Intermediate German I & II .....	4	4
EDUC	1010		Orientation+ .....	**	1
				<b>17</b>	<b>18</b>
SO					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Fine Arts .....	3	**
			Social Science Group I & II .....	3	3
COMM	1000		Public Speaking .....	**	3
FLGR	3010	3020	German Comp & Con I & II .....	3	3
FLGR	3110	3120	German Culture & Civ I & II .....	3	3
				<b>15</b>	<b>15</b>
JR					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FLGR	3100		Introduction to German Lit .....	3	**
FOUN	3110		Ad Dev Lrn Mot & Asmt I*+ .....	**	3
CTSE	4070	4080	Curriculum & Teaching I & 2 *+ .....	4	4
			FLGR Electives (3000 or above) .....	3	9
				<b>16</b>	<b>16</b>
SR					
FOUN	3120		Ad Dev Lrn Mot & Asmt II *+ .....	3	**
CTSE	4200		Mgt Mid & HS Class*++ .....	**	2
CTSE	4920		Internship** .....	**	10
			FLGR Elective (3000 or above) .....	6	**
EDMD	3300		Utilization Instructional Tech+ .....	**	2



College of Education

		Free Elective.....	1	**	
UNIV	4AA0	Ed1 Undergraduate Graduation.....	**	0	
			12	12	
<b>TOTAL HOURS - 121</b>					
FLGR Elective: See adviser for approved course listing.					
* Prerequisite: Admission to Teacher Education.					
** Prerequisite: Admission to Internship (application for internship is one year in advance).					
+ Prerequisite for Admission to Internship.					
++ Co-requisite with Internship.					

				<b>SR</b>	
				<b>FOUN 3120</b>	Ados Dev Lrn Mot & Assmt II *+.....
				<b>CTSE 4100</b>	C & T II: Science*+.....
			4200	<b>CTSE</b>	Mgt Mid & HS Class *+.....
			4920	<b>CTSE</b>	Internship **.....
				<b>BIOL 4010</b>	Invertebrate OR
				<b>BIOL 4020</b>	Vertebrate Biodiversity.....
				<b>BIOL 5240</b>	Animal Physiology.....
UNIV	4AA0	Ed1 Undergraduate Graduation.....	**	0	
			15	12	

<b>Curriculum in Foreign Language Education/Spanish</b>					
<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History I & II.....	3	3
			Core Math.....	3	**
			Core Philosophy.....	**	3
			Core Science.....	4	4
<b>FLSP</b>	<b>2010</b>	<b>2020</b>	Intermediate Spanish I & II.....	4	4
<b>EDUC</b>		<b>1010</b>	Orientation+.....	**	1
				17	18
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Fine Arts.....	3	**
			Social Science Group I & II.....	3	3
			Public Speaking.....	**	3
<b>COMM</b>		<b>1000</b>			
<b>FLSP</b>	<b>3010</b>		Spanish Phonetics.....	3	**
<b>FLSP</b>		<b>3020</b>	Spanish Syntax.....	**	3
<b>FLSP</b>	<b>3030</b>		Spanish Conversation.....	3	**
<b>FLSP</b>		<b>3040</b>	Spanish Composition.....	**	3
				15	15
<b>JR</b>					
<b>FOUN</b>	<b>3000</b>		Diversity of Learners & Settings+.....	3	**
<b>RSED</b>	<b>3000</b>		Diversity & Exceptionality of Learners+.....	3	**
<b>FLSP</b>	<b>3100</b>		Introduction to Spanish Lit.....	3	**
<b>FOUN</b>		<b>3110</b>	Ad Dev Lrn Mot & Assmt I*+.....	**	3
<b>CTSE</b>	<b>4070</b>	<b>4080</b>	Curriculum & Teaching I & II *+.....	4	4
<b>FLSP</b>		<b>3210/20</b>	Spanish/American Civ I or II.....	**	3
<b>FLSP</b>		<b>3110/20</b>	Spanish Civ I or II.....	**	3
			FLGR Elective (3000 or above).....	3	3
				16	16
<b>SR</b>					
<b>FOUN</b>	<b>3120</b>		Ad Dev Lrn Mot & Assmt II *+.....	3	**
<b>CTSE</b>		<b>4200</b>	Mgt Mid & HS Class*+.....	**	2
<b>CTSE</b>		<b>4920</b>	Internship **.....	**	10
			FLSP Elective (3000 or above).....	6	**
<b>EDMD</b>	<b>3300</b>		Utilization Instructional Tech+.....	2	**
			Free Elective.....	1	**
UNIV	4AA0	Ed1 Undergraduate Graduation.....	**	0	
				12	12

<b>TOTAL HOURS - 121</b>					
FLSP Elective: See adviser for approved course listing.					
* Prerequisite: Admission to Teacher Education.					
** Prerequisite: Admission to Internship (application for internship is one year in advance).					
+ Prerequisite for Admission to Internship.					
++ Co-requisite with Internship.					

<b>Curriculum in General Science Education/Biology</b>					
<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
GEOL		1100	Physical Geology.....	**	4
MATH	1610		Calculus I.....	4	**
HIST	1210	1220	Technology & Civilization I & II.....	3	3
			Core Fine Arts.....	3	**
			Core Philosophy.....	**	3
<b>BIOL</b>	<b>1020</b>		Principles of Biology.....	4	**
<b>BIOL</b>		<b>1030</b>	Organismal Biology.....	**	4
<b>EDUC</b>		<b>1010</b>	Orientation+.....	**	1
				17	18
<b>SO</b>					
CHEM	1030	1040	Chemistry I & II.....	3	3
CHEM	1031	1041	Chemistry I & II Lab.....	1	1
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I & II.....	3	3
<b>BIOL</b>	<b>2500</b>		Human Anatomy & Physiology.....	4	**
<b>BIOL</b>	<b>3030</b>		Evolution and Systematics.....	3	**
<b>PHYS</b>		<b>1150</b>	Astronomy.....	**	4
<b>BIOL</b>		<b>3060</b>	Principles of Ecology.....	**	4
				17	18
<b>JR</b>					
<b>PHYS</b>	<b>1500</b>	<b>1510</b>	General Physics I & II.....	4	4
<b>FOUN</b>	<b>3000</b>		Diversity of Learners & Settings+.....	3	**
<b>RSED</b>	<b>3000</b>		Diversity & Exceptionality of Learners+.....	3	**
<b>BIOL</b>	<b>3000</b>		Genetics.....	4	**
<b>BIOL</b>		<b>3100</b>	Plant Biology.....	**	4
<b>FOUN</b>		<b>3110</b>	Adolescent Dev Lrn Mot & Assmt I*+.....	**	3
<b>CTSE</b>		<b>4090</b>	C & T I: Science *+.....	**	4
<b>CTSE</b>	<b>4000</b>		Tech in Sci Ed+.....	2	**
<b>CHEM</b>		<b>2070</b>	Organic Chemistry.....	**	3
<b>CHEM</b>		<b>2071</b>	Organic Chemistry Lab.....	**	1
				16	19

<b>TOTAL HOURS - 132</b>					
* Prerequisite: Admission to Teacher Education.					
** Prerequisite: Admission to Internship (application for internship is one year in advance).					
+ Prerequisite for Admission to Internship.					
++ Co-requisite with Internship.					

<b>Curriculum in Chemistry Education/Chemistry</b>					
<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
MATH	1610	1620	Calculus I & II.....	4	4
HIST	1210	1220	Technology & Civilization I & II.....	3	3
			Core Fine Arts.....	3	**
			Core Philosophy.....	**	3
<b>CHEM</b>	<b>1110</b>	<b>1120</b>	Gen Chem I & II.....	3	3
<b>CHEM</b>	<b>1111</b>	<b>1121</b>	Gen Chem I & II Lab.....	1	1
<b>EDUC</b>		<b>1010</b>	Orientation+.....	**	1
				17	18
<b>SO</b>					
PHYS	1500	1510	Physics I & II.....	4	4
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I & II.....	3	3
<b>COMM</b>		<b>1000</b>	Public Speaking.....	**	3
<b>CHEM</b>	<b>2070</b>	<b>2080</b>	Organic Chemistry I & II.....	3	3
<b>CHEM</b>	<b>2071</b>	<b>2081</b>	Organic Chemistry I & II Lab.....	1	1
				14	17
<b>JR</b>					
<b>FOUN</b>	<b>3000</b>		Diversity of Learners & Settings+.....	3	**
<b>RSED</b>	<b>3000</b>		Diversity & Exceptionality of Learners+.....	3	**
<b>CHEM</b>		<b>3000</b>	Chemical Literature.....	**	1
<b>CHEM</b>	<b>3050</b>		Analytical Chemistry.....	3	**
<b>CHEM</b>	<b>3051</b>		Analytical Chemistry Lab.....	1	**
<b>FOUN</b>		<b>3110</b>	Adolescent Dev Lrn Mot & Assmt I *+.....	**	3
<b>CTSE</b>		<b>4090</b>	C & T I: Science *+.....	**	4
<b>CTSE</b>	<b>4000</b>		Tech in Sci Ed+.....	2	**
			Chemistry Elective.....	4	4
<b>CHEM</b>		<b>3160</b>	Survey of Physical Chemistry.....	**	3
				16	15

<b>TOTAL HOURS - 124</b>					
Chemistry Elective: See adviser for approved course listing.					
* Prerequisite: Admission to Teacher Education.					
** Prerequisite: Admission to Internship (application for internship is one year in advance).					
+ Prerequisite for Admission to Internship.					
++ Co-requisite with Internship.					

<b>Curriculum in Physics Education/Physics</b>					
<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
HIST	1210	1220	Technology & Civilization I & II.....	3	3
MATH	1610	1620	Calculus I & II.....	4	4
			Core Fine Arts.....	3	**
			Core Philosophy.....	**	3
<b>PHYS</b>	<b>1607</b>	<b>1617</b>	Honors Physics I & II.....	4	4
<b>EDUC</b>		<b>1010</b>	Orientation+.....	**	1
				17	18
<b>SO</b>					
CHEM	1030	1040	Fundamentals of Chemistry I & II.....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab.....	1	1
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science.....	3	**
			Calculus III.....	4	**
MATH	2630		Differential Equations.....	**	3
MATH		<b>2650</b>		**	3
<b>PHYS</b>	<b>2200</b>	<b>2100</b>	Interm Mechanics.....	**	3
<b>PHYS</b>		<b>2300</b>	Intro Quantum Physics.....	3	**
			Lab Skills.....	**	2
				17	15

College of Education

JR		Core Social Science.....	**	3		
COMM	1000	Public Speaking .....	**	3		
FOUN	3000	Diversity of Learners & Settings+ .....	**	3	JR	
RSED	3000	Diversity & Exceptionality of Learners+ .....	**	3	FOUN	3000
PHYS	3100	Intermediate E & M.....	**	3	RSED	3000
FOUN	3110	Adolescent Dev Lrn Mot & Assmt I*+ .....	**	3	FOUN	3110
CTSE	4090	C & T I: Science *+.....	**	4	FOUN	3120
PHYS	4100	Fnd of Quantum Mechanics .....	**	3	CTSE	4210
		Physics Elective (3000-6000 level) .....	**	6		
				15		
SR				17		
FOUN	3120	Ados Dev Lrn Mot & Assmt II *+ .....	**	3	SR	
CTSE	4100	C & T II: Science*+.....	**	4	CTSE	4910
CTSE	4200	Mgt Mid & HS Class *++.....	**	2	CTSE	4050
CTSE	4920	Internship ** .....	**	10	CTSE	4060
CTSE	4000	Tech in Sci Ed+ .....	**	2	CTSE	4200
PHYS	4200	Fundamental Experiments in Physics .....	**	2	CTSE	4920
		Physics Elective (3000-6000 level).....	**	6	UNIV	4AA0
UNIV	4AA0	Ed1 Undergraduate Graduation .....	**	0		
				17		
				12		

**TOTAL HOURS - 127**

Physics Elective: See adviser for approved course listing.  
 \* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

		Geography Option .....	6	6
		Social Science Electives .....	4	3
			15	15
		Diversity of Learners & Settings+ .....	3	**
		Diversity & Exceptionality of Learners+ .....	3	**
		Adolescent Dev Lrn Mot & Assmt I*+ .....	**	3
		Adolescent Dev Lrn Mot & Assmt II*+ .....	**	3
		Social Sci Concepts & Methods + .....	**	3
		Geography Option .....	12	9
			18	18
		Practicum * .....	1	**
		C & T I: Social Science *+ .....	4	**
		C & T II: Social Science *+ .....	4	**
		Mgt Mis & HS Class *++ .....	**	2
		Internship ** .....	**	10
		Geography Option .....	6	**
		Ed1 Undergraduate Graduation .....	**	0
			15	12

**TOTAL HOURS - 126**

Geography Option Elective: See adviser for approved course listing.  
 \* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

**Curriculum in General Social Science Education/History**

FR	F	S		F	S
HIST	1010	1020	World History I & II.....	3	3
ENGL	1100	1120	English Composition I & II .....	3	3
ECON		2020	Microeconomics .....	**	3
PSYC	2010		Intro Psychology .....	3	**
			Core Science.....	4	4
			Core Fine Arts .....	3	**
			Core Mathematics.....	**	3
EDUC		1010	Orientation+.....	**	1
				16	17
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Philosophy .....	**	3
GEOG	2010		Cultural Geography .....	**	3
POLI	1020		Political Economy .....	3	**
EDMD	3300		Utilization Instructional Tech+ .....	2	**
			Social Science Elective.....	6	6
			Sociology Elective .....	3	**
				17	15
JR					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FOUN	3110		Adolescent Dev Lrn Mot & Assmt I*+ .....	**	3
FOUN	3120		Adolescent Dev Lrn Mot & Assmt II*+ .....	**	3
CTSE	4210		Social Sci. Concepts & Methods*+ .....	**	9
			Social Science Option.....	12	3
				18	18
SR					
CTSE	4910		Practicum * .....	1	**
CTSE	4050		C&T I: Social Science* + .....	4	**
CTSE	4060		C&T II: Social Science* + .....	4	**
CTSE	4200		Mgt. Mid. & HS Class.* ++ .....	**	2
CTSE	4920		Internship** .....	**	10
			Social Science Option.....	6	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				15	12

**TOTAL HOURS - 128**

Social Science Option, Sociology Elective: See adviser for approved course listing.  
 \* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

**Curriculum in Geography Education/Geography**

FR	F	S		F	S
HIST	1010	1020	World History I & II.....	3	3
ENGL	1100	1120	English Composition I & II .....	3	3
			Core Fine Arts .....	3	**
			Core Mathematics.....	**	3
			Core Science.....	4	4
			Core Social Science Group I & II .....	3	3
EDUC		1010	Orientation+.....	**	1
				16	17
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Philosophy .....	**	3
EDMD	3300		Utilization Instructional Tech+ .....	2	**

**Curriculum in Mathematics Education/Mathematics**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
HIST	1010	1020	World History I & II .....	3	3
HIST	1210	1220	Technology & Civilization I & II.....	3	3
			Core Fine Arts .....	3	**
			Core Social Science Group I & II .....	3	3
			ROTC or Elective.....	**	1
			Orientation+.....	**	1
EDUC		1010		**	4
MATH	1610	1620	An. Geometry & Calculus I & II .....	4	4
				16	15
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
MATH	2630		An. Geometry & Calculus III .....	4	**
MATH	2650		Differential Equations .....	**	3
MATH	3100		Intro to Adv Math.....	**	3
MATH	2660		Linear Algebra .....	**	3
			Core Science .....	4	4
COMM	1000		Public Speaking .....	3	**
			Core Phil .....	3	**
				17	16
JR					
CTMD	4010		Teaching Math: Middle School* + .....	**	4
CTSE	5040		C & T II: Mathematics* + .....	4	**
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FOUN	3110		Ad Develop Lrn Mot & Assmt I* + .....	**	3
MATH	3010		Math History .....	**	3
MATH	5310		Abstract Algebra .....	3	**
MATH	5380		Intermediate Geometry I.....	3	**
STAT	3600		Math Stat. I.....	**	3
			MATH 5000 Level .....	**	3
				16	16
SR					
FOUN	3120		Ad Develop Lrn Mot & Assmt II* + .....	3	**
CTSE	4030		C&T I: Mathematics* + .....	4	**
MATH	5200		Analysis I.....	3	**
CTSE	4200		Mgt. Mid. & HS Class.* ++ .....	**	2
CTSE	4920		Internship ** .....	**	10
			Discrete Math Elective .....	3	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				13	12

**TOTAL HOURS - 121**

\* Prerequisite: Admission to Teacher Education.  
 \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).  
 + Prerequisite for Admission to Internship.  
 ++ Co-requisite with Internship.

**Curriculum in Music Education/Instrumental**

FR	F	S		F	S
HIST	1010	1020	World History I & II .....	3	3
ENGL	1100	1120	English Composition I & II .....	3	3
			Core Science .....	4	4
MUSI	1000	1000	Performance Attendance .....	0	0
MUSI	1310	1410	Music Theory I & II .....	2	2
MUSI	1320	1420	Music Skills I & II .....	1	1
MUAP	1110	1210	Performance (applied) .....	1	1
MUSI	1020	1020	Elective (Piano Class) .....	1	1
MUSI			Instrumental Ensemble+++ .....	1	1
EDUC	1010		Orientation + .....	1	**
				17	16



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MUSI		Small Ensemble+++ .....	1	**
UNIV	4AA0	Ed1 Undergraduate Graduation .....	**	0
			17	12

**TOTAL HOURS - 133**

- \* Prerequisite: Admission to Teacher Education.
- \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).
- + Prerequisite for Admission to Internship.
- ++ Co-requisite with Internship.
- +++ 3 Instrumental, 3 Vocal, 1 Small Ensemble required. Large instrumental: MUSI 1100, 1120, 1140, and/or 1150. Small instrumental: MUSI 1130 or 1120. Large vocal: MUSI 1180, 1190, and/or 1210. Small vocal: MUSI 1160, 1170, or 1230.
- # Prerequisite keyboard proficiency.
- ## MUSI 4110 Choral Techniques offered alternate fall semesters. This may be taken Junior or Senior Fall.
- Summer coursework may be taken to avoid an overload of 19 hours during other semesters.

**Kinesiology**

(Teacher Education Program)

**Curriculum in Physical Education/Teacher Education**

FR	F	S		F	S
BIOL	1020		Principles of Biology .....	4	**
BIOL		1030	Organismal Biology .....	**	4
ENGL	1100	1120	English Composition I & II .....	3	3
			Core Math .....	**	3
			Core History I & II .....	3	3
			Core Social Science .....	3	3
PHED		1100	Wellness .....	**	2
EDUC		1010	Orientation+ .....	**	1
				13	16
<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....	3	**
			Core Fine Arts .....	3	**
			Core Philosophy .....	**	3
			Core Social Science .....	3	**
BIOL	2500	2510	Human A & P I & II .....	4	4
KINE	2250		Motor Development Sch .....	2	**
KINE	2251		Motor Development Sch Lab .....	1	**
KINE		2800	Introduction to KINE .....	**	3
			Elective .....	**	3
				16	16
<b>JR</b>					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
KINE	3010		Ins. Tch. Hum. Per .....	2	**
KINE	3020		Sci. Foun. KINE .....	4	**
FOUN		3100	Child Develop. Lrng/ Assmt* + .....	**	6
KINE	3200		Skills/Conc. Rhythms .....	3	**
KINE		3210	Skills/Conc. Sports .....	**	3
KINE	3250		Skill Acq. Sch. Child .....	**	3
KINE	3300		Ins. Str. Phys. Ed* .....	**	3
				15	15
<b>SR</b>					
KINE	3260		Phys Ed Ind Dis .....	3	**
KINE	3280		Assess Phys Ed* .....	3	**
KINE	4200		Phys Ed Elem Sch* + .....	4	**
KINE	4300		Phys Ed Sec Sch* + .....	4	**
KINE	4350		Tching Lftm Phy Act* .....	3	**
KINE		4920	Internship .....	**	10
KINE		4970	Spc Topics: Phys Ed* ++ .....	**	3
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				17	13

**TOTAL HOURS - 121**

- \* Prerequisite: Admission to Teacher Education.
- \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).
- + Prerequisite for Admission to Internship.
- ++ Co-requisite with Internship.

**Special Education, Rehabilitation, and Counseling**

(Teacher Education Programs)

**Curriculum in Early Childhood Special Education**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I & II .....	3	3
			Core Social Science Group I & II .....	3	3
			Core Math .....	**	3
			Core Fine Arts .....	3	**
COMM	1000		Public Speaking .....	3	**
EDMD		3300	Utilization Instructional Tech+ .....	**	2
EDUC		1010	Orientation+ .....	**	1
				16	14
<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....	3	3
BIOL	1000	1010	Core Biology .....	4	4
			Core Philosophy .....	3	**
MATH	2850	2860	Math for Elem Educ I & II .....	3	3

Math Elective OR MATH 2870 .....	3	**
Science Elective with Lab .....	**	4
Free Elective .....	**	3
	16	17

JR					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
RSED	3010		Introduction to Special Education .....	3	**
FOUN		3100	Child Dev/Learn/Motive/Assmt* + .....	**	6
RSED	4910		Practicum .....	**	1
RSED		5070	Mild Disabilities .....	**	3
RSED	5100		Infants/Toddlers W/Disabilities .....	3	**
RSED		5110	Curr Early Childhood Sp Ed* + .....	**	3
RSED	5150		Teching Meth in Special Ed* + .....	**	3
CTRD		5700	Developmental Reading (K-12) .....	**	3
				15	16

SR					
RSED	4010		Behavior Mgt. In Special Ed. ....	3	**
RSED	4910		Practium .....	2	**
RSED		4920	Professional Internship ** .....	**	9
RSED	5140		Severe Disabilities Curriculum .....	3	**
RSED	5060		Severe Disabilities .....	3	**
RSED	5120		Curr in Elementary Sp Ed * + .....	3	**
RSED		5160	Collaboration in Special Ed. * ++ .....	**	3
RSED	5180		Instructional Classroom Management .....	3	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				17	12

**TOTAL HOURS — 123**

- \* Prerequisite: Admission to Teacher Education.
- \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).
- + Prerequisite for Admission to Internship.
- ++ Co-requisite with Internship.

**Curriculum in Collaborative Teacher Education**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History I & II .....	3	3
			Core Social Science Group I & II .....	3	3
			Core Math .....	**	3
			Core Fine Arts .....	3	**
			Oral Comm .....	3	**
COMM	1000		Utilization Instructional Tech+ .....	**	2
EDMD		3300	Orientation+ .....	**	1
EDUC		1010	Elective .....	**	3
				16	17

SO					
ENGL	2200	2210	World Literature I & II .....	3	3
BIOL	1000	1010	Core Biology .....	4	4
			Core Philosophy .....	3	**
MATH	2850	2860	Math for Elem Tch I & II .....	3	3
			Math Elective OR MATH 2870 .....	3	**
			Science Elective with Lab .....	**	4
				16	14

JR					
FOUN	3000		Diversity of Learners & Settings+ .....	3	**
RSED	3000		Diversity & Exceptionality of Learners+ .....	3	**
FOUN		3100	Child Dev/Learn/Motive/Assmt* + .....	**	6
RSED	3010		Introduction to Special Education .....	3	**
RSED		5150	Teaching Methods in Special Ed. * + .....	**	3
RSED	3110		Assessment in Special Ed .....	**	3
RSED		5140	Severe Disabilities Curriculum .....	**	3
RSED	5070		Mild Disabilities .....	3	**
RSED		4910	Practicum .....	*	1
RSED	5180		Instructional Classroom Management .....	3	**
CTRD	5700		Development Reading (K-12) .....	3	**
				18	16

SR					
RSED	5120		Curr. in Elementary Sp. Ed. * + .....	3	**
RSED		4920	Professional Internship ** .....	**	9
RSED	5130		Curr. in Secondary Special Ed. * + .....	3	**
RSED		5160	Collaboration in Special Ed * ++ .....	**	3
RSED	4010		Behavior Mgt. in Special Ed. ....	3	**
RSED	5170		Transition From School to Comm. ....	3	**
RSED	5060		Severe Disabilities .....	3	**
RSED	4910		Practicum .....	2	**
UNIV	4AA0		Ed1 Undergraduate Graduation .....	**	0
				17	12

**TOTAL HOURS — 126**

- \* Prerequisite: Admission to Teacher Education.
- \*\* Prerequisite: Admission to Internship (application for internship is one year in advance).
- + Prerequisite for Admission to Internship.
- ++ Co-requisite with Internship.

**Kinesiology**

(Non-teaching Programs)

**Exercise Science.** The curriculum prepares students for graduate study in the exercise science sub-disciplines (biomechanics, exercise physiology, and motor behavior) and entry into professional programs such as medicine, physical therapy, and occupational therapy. This program does not require admission to Teacher Education. However, this is a high demand program and requires an application process for students enrolled in pre-exercise science or desiring to transfer from another major. Due to limited enrollment, all students who meet minimum criteria may not be admitted. Information regarding minimum admission criteria and the application process is available on the Web site for the Department of Kinesiology, [http://education.auburn.edu/academic\\_departments/kine/](http://education.auburn.edu/academic_departments/kine/).

**Curriculum in Exercise Science**

FR	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021)	4	**
BIOL		1030	Organismal Biology and Lab (1031)	**	4
ENGL	1100	1120	English Composition I & II	3	3
MATH		1150	Pre Cal Alg & Trig	**	4
			Core History I & II	3	3
			Core Social Science	3	**
PHED	1100		Wellness	2	**
PHED			Elective	**	2
				15	16
SO					
ENGL	2200	2210	World Literature I & II	3	3
MATH	1610		Calculus I	4	**
			Core Fine Arts	3	**
			Core Philosophy	**	3
			Core Social Science	3	**
BIOL	2500	2510	Human A & P I & II	4	4
			Elective	**	3
				17	13
JR					
CHEM	1030		Fundamentals of Chemistry I	3	**
CHEM	1031		Fundamentals of Chemistry I LAB	1	**
PHYS	1500		General Physics I	4	**
KINE	3010		Ins Tch Hum Per	2	**
KINE	3020		Sci Foun KINE	4	**
KINE		3620	Biomech Analysis	**	4
KINE		3650	Motor Lrng & Perf	**	4
KINE		3680	Physiology Ex	**	4
			Elective	**	4
				14	16
SR					
KINE	4760		Introduction to Exercise Sci Res	3	**
KINE		4780	Exercise Science Research	**	3
			Exercise Science Electives	3	3
PHED			Elective	2	**
			Exercise Science Elective	**	3
			Electives	6	6
UNIV	4AA0		Ed1 Undergraduate Graduation	**	0
				14	15

**TOTAL HOURS - 120**

**Health Promotion.** The curriculum prepares students in applied exercise science and the fundamentals of business for leadership roles in a variety of health and fitness settings. Students attain the knowledge, skills and abilities to function as exercise professionals in cardiac and pulmonary rehabilitation and corporate and commercial fitness programs. This program does not require admission to Teacher Education.

**Curriculum in Health Promotion**

FR	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021)	4	**
BIOL		1030	Organismal Biology and Lab (1031)	**	4
ENGL	1100	1120	English Composition I & II	3	3
MATH		1150	Pre-Calculus Algebra & Trig	**	4
ECON	2020		Microeconomics	3	**
			Core History I & II	3	3
KINE	1100		Wellness	2	**
PHED			Elective	**	2
				15	16
SO					
ENGL	2200	2210	World Literature I & II	3	3
			Core Fine Arts	3	**
			Core Philosophy	**	3
			Core Social Science	3	**
ECON	2030		Macroeconomics	3	**
ACCT	2110		Accounting	**	3
BIOL	2500		Human A & P I	4	**
KINE		3020	Sci Foun KINE	**	4
PHED			Elective	**	2
				16	15

JR					
KINE	3010		Ins Tch Hum Per	2	**
BIOL	2510		Human A & P II	4	**
MNGT		3100	Principles of Management	**	3
KINE		3400	Health Promotion Workplace	**	3
FINC	3610		Principles of Finance	3	**
KINE	3680		Physiology Ex	4	**
KINE		5500	Ex Tech I	**	4
KINE			Exercise Science Elective	**	3
KINE			Elective	**	3
PHED			Elective	**	2
				16	15
SR					
KINE	4450		Phys Act & Pub Health	3	**
KINE	5550		Ex Tech II	4	**
KINE		4920	Internship	**	12
MKTG	3310		Principles of Marketing	3	**
KINE	5400		EX RX Spec Pop	3	**
			Elective	**	2
UNIV	4AA0		Ed1 Undergraduate Graduation	**	0
				15	12

**TOTAL HOURS - 120**

Business minor required.

**Special Education, Rehabilitation, and Counseling**

(Non-teaching Program)

**Rehabilitation and Disability Studies.** The curriculum prepares students to serve adults with disabilities through a number of career pursuits, including vocational evaluators and adjustment specialists, case managers and job coaches. Graduates can use this major for entry into rehabilitation graduate programs, such as counselor training, physical therapy, occupational therapy and related fields.

**Curriculum in Rehabilitation and Disability Studies**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
			Core Fine Arts	3	**
			Core Biology	4	4
			Core Math	**	3
			Core Social Science Group I & II	3	3
COMM		1000	Public Speaking	**	3
			Elective	**	3
				16	16
SO					
PHIL	1030		Ethics in Health Sciences	3	**
ENGL	2200	2210	World Literature I & II	3	3
			Core History I & II	3	3
BIOL	2500	2510	Human A & P I & II	4	4
STAT	2010		Stats Soc & Behavior Sci	**	4
PSYC	3570		Theories of Personality	**	3
			Elective	**	3
				16	17
JR					
RSED	3020		Introduction to Rehabilitation	3	**
RSED		3120	Assessment in Rehabilitation	**	3
RSED		4100	Professional Comm in Rehab	**	3
RSED	4120		Independent Living	3	**
RSED	4910	4910	Practicum*	1	2
RSED	5010		Medical Aspects	3	**
RSED	5200		Voc Eval in Rehabilitation	3	**
RSED		5210	Occupational Information	**	3
RSED		5230	Rehabilitation Technology	**	3
			Elective	**	3
				16	14
SR					
RSED	4130		Ethical Practices	3	**
RSED		4910	Practicum*	1	**
RSED		4920	Internship	**	9
RSED	5020		Psychosocial Aspects	3	**
RSED	5170		Transition from School to Comm	3	**
RSED	5220		Placement Ser in Rehab	3	**
			Elective	**	3
UNIV	4AA0		Ed1 Undergraduate Graduation	**	0
				13	12

**TOTAL HOURS -120**

\* Students are required to complete four hours of practicum, which may be taken over 2-4 semesters.

# Samuel Ginn College of Engineering

LARRY D. BENEFIELD, *Dean*  
OLIVER D. KINGSLEY, JR., *Associate Dean*  
NELS MADSEN, *Associate Dean*  
JOE M. MORGAN, *Associate Dean*  
RALPH H. ZEE, *Associate Dean*  
ROBERT KARCHER, *Assistant Dean*

ENGINEERS ARE FACED with worldwide problems and expectations awesome in responsibility, yet exciting as professional challenges. These range from the extremes of interplanetary exploration through earth orbiting systems to the problems arising from our population explosion: energy, better productivity, housing, transportation and environmental issues.

As a renewed appreciation develops for the contributions of science and technology, engineering leaders are calling for engineers, who are better equipped to tackle the specific, technical problems of the future. They also are calling for engineers who by breadth of education and understanding of other disciplines can convince others of the role of engineers not only in technical matters but in policy decisions to ensure the use of technology to benefit mankind.

Engineering education at Auburn also provides in a four-year curriculum both the technical knowledge and the broad general education necessary to equip engineers for their problem-solving challenges. Centered on mathematics and the physical sciences, the curricula also stress the importance of social sciences, humanities and communication skills. Auburn's engineering programs enable individuals to develop their natural talents and provide knowledge, skills and understanding that will help them to find their places in society as well as in their vocations.

## Admission

Freshmen eligibility is determined by the Office of Enrollment Services. However, since the requirements for engineering education necessitate high school preparatory work of high intellectual quality and of considerable breadth, the following program is recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry, and analytical geometry), four units; chemistry, one unit; history, literature, social science, two or three units. Physics and foreign languages are recommended but not required.

Transfers from other institutions must apply through the Office of Enrollment Services. The exact placement of these students can be determined only upon review of their transcripts by the Samuel Ginn College of Engineering. See "Admission of Transfer Students" in the General Information section for complete requirements.

The college allows credit for courses completed with satisfactory grades provided the courses correspond in time and content to courses offered at Auburn. Courses that are taught at the 3000-level or higher at Auburn are generally not transferable from junior colleges.

Many courses required by the Samuel Ginn College of Engineering are highly specialized in their content and potential transfer students need to select courses with care. Therefore, to ensure maximum transferability of credits, students are encouraged to contact the College as soon as possible about acceptable credits.

Transfers from on-campus must be approved by the Samuel Ginn College of Engineering and the admissions committee of the chosen curriculum, and meet the same academic requirements as off-campus transfer students. The criteria include a minimum overall Auburn grade-point average of 2.2 and the completion of the first mathematics course listed in the chosen curriculum with a grade of C or better.

## Programs

**Pre-Engineering.** The Pre-Engineering Program consists of a freshman program of studies to prepare students for curricula in the Samuel Ginn College of Engineering. It also provides academic and career counseling to assist students in determining the curriculum that best fulfills their personal and educational objectives.

**Professional Programs.** The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700: Aerospace Engineering, Biosystems Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial and Systems Engineering, Materials Engineering,

Mechanical Engineering, Software Engineering, and Wireless Engineering.

The undergraduate Computer Science program is accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700.

These curricula are designed to meet the educational requirements of the engineering professions. The program in the fundamental sciences of mathematics, chemistry and physics is followed by a study of basic engineering sciences. Specialized or departmental courses are taken in the third and fourth years. Flexibility is provided in all degree programs through electives so that the individual may emphasize areas of personal interest.

A forest engineering option is available under the biosystems engineering program. The forest engineering option is offered jointly by the Department of Biosystems Engineering and the School of Forestry and Wildlife Sciences. The environmental science curriculum is offered jointly by the College of Agriculture and the College Sciences and Mathematics.

**Dual-Degree.** The Samuel Ginn College of Engineering has agreements with several predominantly liberal arts institutions to offer an academic program where a student can earn two baccalaureate degrees. Under the terms of this program the first three years of study are devoted to earning a major in any one of the disciplines offered by the institution first entered, while completing the basic sciences and mathematics courses required for pre-engineering at Auburn.

Upon completion of three years of study in the liberal arts the student transfers to the Samuel Ginn College of Engineering. After a minimum of two years of study in an engineering curriculum, the student earns degrees from both institutions. The broad background provided by this program may enable a student to cope more effectively with many of the problems of modern-day society.

**Graduate.** The Samuel Ginn College of Engineering offers the MS and PhD degrees in aerospace, chemical, civil, computer science and software engineering, electrical and computer, industrial and systems, materials and mechanical engineering and polymer and fiber engineering. The following professional degrees are offered as well: master of aerospace engineering, master of chemical engineering, master of civil engineering, master of electrical and computer engineering, master of industrial and systems engineering, master of materials engineering, master of mechanical engineering, master of polymer and fiber engineering, and master of software engineering. The college also offers a dual-degree master of industrial and systems engineering and master of business administration.

**Cooperative Education.** The Cooperative Education Program is offered in all curricula of the Samuel Ginn College of Engineering. Refer to the program and write to the Director, Cooperative Education, Auburn, AL 36849 for a booklet which gives additional information.

**Continuing Education.** Business and Engineering Continuing Education extends the resources of the Samuel Ginn College of Engineering to the people, businesses and industries of the state. Programs in this service are technical assistance, short courses, conferences, workshops and seminars. For more information, contact: Director, Business and Engineering Continuing Education, 217 Ramsay Hall, Auburn, AL 36849.

**Video-Based Off-Campus Courses.** The college offers graduate-level courses for credit and non-credit to off-campus students through its Graduate Outreach Program. Graduate-level courses are recorded in the classroom on the Auburn campus and mailed to off-campus students on the same day. Alternatively, courses can be delivered via streaming video. Students enrolled in the program are required to do the same homework assignments and take the same exams as the on-campus students enrolled in the course. For information on admission to the program, fees, course offerings and other particulars, write to the Graduate Outreach Program, 202 Ramsay Hall, Auburn, AL 36849 or call (334) 844-5300.

**Scholastic Requirements.** Pre-Engineering students are transferred to the curriculum of their choice in the Samuel Ginn College of Engineering upon meeting the following requirements:

Complete all appropriate freshman courses;

Earn an overall grade-point average of 2.2 on all required and approved elective course work.

Recommendation by the Curriculum Admissions Committee. A student who has not met the above criteria after four resident semesters is dropped from the college. Junior standing will not be granted to any student in the Pre-Engineering Program.

**Degree Requirements.** To earn the bachelor's degree in the Samuel Ginn College of Engineering, students must complete the subjects in the curriculum, have a minimum grade-point average of 2.0 in all work attempted at Auburn University and have a cumulative grade-point average of 2.0 on courses passed in the major at Auburn. The major is defined as all course work shown in bold print on the relevant curriculum model. It is the student's responsibility to keep informed of course requirements and scheduling. Failure to do so may jeopardize graduation.

**Military Science.** All curricula in the Samuel Ginn College of Engineering permit the use of six hours of basic or advanced ROTC courses passed at Auburn University. For the options, see the specific curriculum. For programs that do not have sufficient electives, credit will be determined on an individual basis. ROTC courses cannot be substituted for any university core or ABET-required courses.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

Minors

**Automotive Engineering and Manufacturing Minor**

Students in any engineering major may choose to minor in automotive engineering and manufacturing. Three curriculum tracks are available: industrial and systems engineering, mechanical engineering, and car team tracks. The courses required for the minor may require prerequisites that will not count toward the student's major or toward the minor.

The minor requires successful completion of 15-16 semester credit hours as shown below:

Industrial and Systems Engineering Track (15 hours): MECH 4430; INSY 5800, 5840, 5860, and 5330 or 5830.

Mechanical Engineering Track (15 hours): MECH 4410, 4420, 4430; INSY 5800, 5860.

Car Team Track (16 hours): MECH 4430, 4440, 4450, INSY 5800, 5840, 5860. (Approval of department and car team advisor required).

**Business-Engineering-Technology**

Students who minor in Business-Engineering-Technology learn, practice, and integrate entrepreneurship, engineering, and business management skills demanded by the technology-driven global economy, solve real-world case study and design problems, and work in cross-functional teams. The minor is a joint offering by the Colleges of Business and Engineering. Admission to the minor is competitive. To remain in the program, the cumulative GPA must be equal to or greater than 3.0.

16 semester hours in the minor

**Courses required**

		<b>Cr. Hr.</b>
BUSI	3510	Introduction to Engineering and Business .....3
BUSI	3520	Integrat Bus. and Engr. Theories in Practice .....3
BUSI	3550	Cross-Functional Teamwork.....1
BUSI	3560	Leadership .....1
BUSI	4540	Entrep & Strat. Mngt. Of Tech. & Innov.....4
BUSI	4970	Capstone Project I: Design Proposal .....1
BUSI	4980	Capstone Project II: Design Project .....3

**Computer Science Minor**

19 semester hours in minor

**Courses required**

		<b>Cr. Hr.</b>
COMP	1210	Fundamentals of Computing I .....3
COMP	2210	Fundamentals of Computing II .....4
COMP	2710	Software Construction .....3
COMP	3240	Discrete Structures .....3
COMP	3270	Introduction to Algorithms .....3
COMP	3700	Software Modeling & Design .....3

**Information Technology Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above, selected from the following courses: COMP 3000, COMP 4000, COMP 4730, COMP 5000, COMP 5010, COMP 5020, COMP 5030).

Courses required: None

Elective Courses: see advisor for approved course listing.

**Department of Aerospace Engineering**

Aerospace engineers are concerned with the application of scientific principles and engineering concepts and practices to design, build, test and operate aerospace systems. The curriculum is intended to provide students with a broad understanding of fundamental scientific and technological principles, and to develop the ability to use these principles in developing solutions to engineering problems.

The objectives of the aerospace engineering program are: (1) to help students develop written and oral communication skills and to acquire a knowledge of history, literature and society; (2) to provide students a solid foundation in and a sound working knowledge of basic engineering principles; (3) to help students obtain an understanding of the engineering principles and skills specifically needed in the aeronautical and astronautical disciplines; and (4) to assist and encourage each student to develop an enhanced ability to learn and think creatively.

Required courses cover aeronautical and astronautical subjects. Students may also choose to emphasize either aeronautical or astronautical systems. Technical electives allow concentration in such areas as aerodynamics, astronautics, flight dynamics and control, propulsion, structures and structural dynamics. The design of aerospace components and systems is considered to be an integral part of the education of aerospace engineers. Hence, design is included throughout the curriculum, beginning with a sophomore course in aerospace fundamentals and culminating in the senior design course sequence. Students are required to apply their theoretical knowledge of aerodynamics, dynamics, structures and propulsion to solve open-ended problems and to produce portions of preliminary designs.

**Curriculum in Aerospace Engineering**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
CHEM	1030		Fundamentals of Chemistry I.....3		**
CHEM	1031		Fundamentals of Chemistry I Lab.....1		**
ENGL	1100	1120	English Composition I & II .....3		3
PHYS	1600	1600	Engineering Physics I.....**		4
MATH	1610	1620	Calculus I & II .....4		4
			Core History .....3		3
ENGR	1100		Engineering Orientation.....0		**
ENGR		1110	Introduction to Engineering.....**		2
COMP	1200		Introduction to Computing.....2		**
				<b>16</b>	<b>16</b>
<b>SO</b>					
PHYS	1610		Engineering Physics II.....4		**
ENGL	2200	2210	World Literature I & II.....3		3
MATH	2630		Calculus III.....4		**
MATH		2650	Linear Diff Equations.....**		3
			Core Philosophy.....3		**
			Core Social Science Group I.....**		3
ENGR		2010	Thermodynamics.....**		3
ENGR	2050		Statics .....3		**
ENGR		2070	Mechanics of Materials.....**		3
<b>AERO</b>	<b>2200</b>		<b>Aero Fundamentals.....**</b>		<b>2</b>
				<b>17</b>	<b>17</b>
<b>JR</b>					
			Core Fine Arts .....3		**
ENGR	2350		Dynamics.....3		**
MATH	2660		Topics in Linear Algebra.....3		**
ELEC	3810		Fundamentals of Electrical Engineering.....3		**
<b>AERO</b>	<b>3110</b>	<b>3120</b>	<b>Aerodynamics I &amp; II.....3</b>		<b>3</b>
<b>AERO</b>	<b>3130</b>		<b>Aerodynamics Lab.....2</b>		<b>**</b>
<b>AERO</b>	<b>3220</b>		<b>Aerospace Systems.....**</b>		<b>3</b>
<b>AERO</b>	<b>3230</b>		<b>Flight Dynamics.....**</b>		<b>4</b>
<b>AERO</b>	<b>3310</b>		<b>Orbital Mechanics.....**</b>		<b>3</b>
<b>AERO</b>	<b>3610</b>		<b>Aerospace Structures I.....**</b>		<b>2</b>
				<b>17</b>	<b>15</b>
<b>SR</b>					
			Core Social Science Group II.....**		3
<b>AERO</b>	<b>4140</b>		<b>Aerodynamics III.....3</b>		<b>**</b>
<b>AERO</b>	<b>4510</b>		<b>Aerospace Propulsion.....4</b>		<b>**</b>
<b>AERO</b>	<b>4620</b>		<b>Aerospace Structures II.....4</b>		<b>**</b>
<b>AERO</b>		<b>4630</b>	<b>Aero Structural Dynamics.....**</b>		<b>4</b>
<b>AERO</b>	<b>4AA0</b>		<b>Program Assessment.....0</b>		<b>**</b>
<b>AERO</b>	<b>4710</b>		<b>Aerospace Design I.....3</b>		<b>**</b>
<b>AERO</b>	<b>4720</b>		<b>Aerospace Design II.....**</b>		<b>3</b>
			<b>Aero/Astro Elective.....3</b>		<b>3</b>
UNIV	4AA0		EN1 Undergraduate Graduation.....**		0
				<b>17</b>	<b>13</b>
				<b>TOTAL HOURS - 128</b>	

Aero/Astro - see advisor for approved course listing.

## Department of Biosystems Engineering

The mission of the Department of Biosystems Engineering is to develop and disseminate engineering knowledge to solve problems in biological systems, natural resources and the environment. It meets the resident instruction portion of that mission through the offering of a degree program which leads to a bachelor of biosystems engineering. Options in ecological engineering and forest engineering are also available under the biosystems engineering degree program.

### Biosystems Engineering

The department offers the only accredited degree in biosystems engineering in Alabama. It is committed to preparing students for productive professional careers in the biosystems industries and related natural resource and environmental systems sectors. Specific program educational objectives of the Biosystems Engineering program are: 1) graduates solve engineering problems such as those associated with the environment and natural resources, and the production, processing, storage, manufacture, utilization, and recycling of biological products; 2) graduates develop solutions to problems that combine engineering and biological sciences; 3) graduates develop environmentally and economically feasible and practical design solutions; and 4) graduates expand the role of engineering in society, communicate effectively, practice in a professional and ethical manner, and provide leadership in the profession. The curriculum is coordinated by the Samuel Ginn College of Engineering. Students should apply for admission to the Samuel Ginn College of Engineering and complete the pre-biosystems engineering program.

#### Curriculum in Biosystems Engineering

FR	F	S		F	S
CHEM	1030		Fundamentals of Chemistry I.....	3	**
CHEM	1031		Fundamentals of Chemistry I Lab .....	1	**
ENGL	1100	1120	English Composition I & II .....	3	3
PHYS	1600		Engineering Physics I .....	**	4
MATH	1610	1620	Calculus I & II .....	4	4
			Core History .....	3	3
ENGR	1100		Engineering Orientation.....	0	**
ENGR		1110	Introduction to Engineering.....	**	2
COMP	1200		Introduction to Comp for Engrs & Sci.....	2	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031).....	**	4
ENGR	2050		Statics .....	3	**
ENGR		2350	Dynamics.....	**	3
ENGR		2070	Mechanics of Materials .....	**	3
ENGR	2010		Thermodynamics.....	3	**
MATH	2630		Calculus III.....	4	**
MATH		2650	Differential Equations .....	**	3
<b>BSEN</b>	<b>2210</b>		<b>Engineering Methods for Biosystems .....</b>	<b>2</b>	<b>**</b>
<b>BSEN</b>		<b>2240</b>	<b>Biol and Bioenviron Heat &amp; Mass Transfer .....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>16</b>
<b>JR</b>					
CHEM		1040	Fundamentals of Chemistry II .....	**	3
CHEM		1041	Fundamentals of Chemistry II Lab .....	**	1
AGRN	2040		Basic Soil Science.....	4	**
STAT	3010		Statistics for Engrs & Sci.....	3	**
BIOL		3200	General Microbiology .....	**	4
ECON	2020		Microeconomics.....	3	**
<b>BSEN</b>	<b>3210</b>		<b>Mech Power for Biosystems.....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>		<b>3230</b>	<b>Natural Resource Conserv Eng.....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>		<b>3240</b>	<b>Process Engineering in Biosystems.....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>3310</b>		<b>Hydraulic Transport in Biosystems.....</b>	<b>**</b>	<b>4</b>
<b>BSEN</b>		<b>3610</b>	<b>Instrumentation &amp; Controls for Biosystems .....</b>	<b>**</b>	<b>3</b>
				<b>17</b>	<b>16</b>
<b>SR</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I.....	**	3
			Core Fine Arts .....	3	**
			Core Philosophy .....	3	**
<b>BSEN</b>	<b>4210</b>		<b>Irrigation Systems Design .....</b>	<b>3</b>	<b>**</b>
<b>BSEN</b>		<b>4230</b>	<b>Waste Mgt &amp; Utilization Eng for Biosys.....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>		<b>4310</b>	<b>Engr Design for Biosystems.....</b>	<b>**</b>	<b>4</b>
<b>BSEN</b>	<b>5220</b>		<b>Geospatial Tech in Biosystems .....</b>	<b>3</b>	<b>**</b>
			<b>Biosystems Engr Elective .....</b>	<b>3</b>	<b>**</b>
UNIV		4AA0	EN1 Undergraduate Graduation.....	**	0
				<b>18</b>	<b>16</b>

TOTAL HOURS - 132

Biosystems Electives: see adviser for approved course listing.

## Ecological Engineering Option

The Department of Biosystems Engineering offers an option in ecological engineering as part of the bachelor of biosystems engineering degree. This option prepares students to solve environmental problems by using engineering knowledge with natural ecological and biological principles. Ecological engineering combines basic and applied science from engineering, ecology, economics, and natural sciences to design, construct, and manage sustainable ecosystems that have value to both humans and the natural environment. The ecological engineering option is coordinated by the Samuel Ginn College of Engineering. Students should apply for admission to the Samuel Ginn College of Engineering and complete the ecological engineering option portion of the pre-biosystems engineering program.

#### Curriculum in Ecological Engineering Option

FR	F	S		F	S
CHEM	1030		Fundamentals of Chemistry I.....	3	**
CHEM	1031		Fundamentals of Chemistry I Lab .....	1	**
ENGL	1100	1120	English Composition I & II .....	3	3
PHYS	1600		Engineering Physics I .....	**	4
MATH	1610	1620	Calculus I & II .....	4	4
			Core History .....	3	3
ENGR	1100		Engineering Orientation.....	0	**
ENGR		1110	Introduction to Engineering.....	**	2
COMP	1200		Introduction to Comp for Engrs & Sci.....	2	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
			Core Social Science Group I.....	**	3
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
BIOL		1030	Organismal Biology & Lab (1031).....	**	4
CHEM	1040		Fundamentals of Chemistry II .....	**	3
CHEM		1041	Fundamentals of Chemistry II Lab .....	**	1
MATH	2630		Calculus III.....	4	**
MATH		2650	Differential Equations .....	**	3
ENGR	2050		Statics .....	3	**
ENGR		2010	Thermodynamics.....	3	**
<b>BSEN</b>	<b>2210</b>		<b>Engineering Methods for Biosystems .....</b>	<b>**</b>	<b>**</b>
<b>BSEN</b>		<b>2240</b>	<b>Biol and Bioenviro Heat &amp; Mass Transfer .....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>17</b>
<b>JR</b>					
ECON	2020		Microeconomics.....	3	**
AGRN		2040	Basic Soil Science.....	**	4
STAT	3010		Statistics for Engrs & Sci.....	3	**
BIOL		3200	General Microbiology .....	4	**
ENGR	2070		Mechanics of Materials .....	3	**
			Ecology Elective.....	**	3
<b>CIVL</b>	<b>3230</b>		<b>Intro to Environmental Engng .....</b>	<b>**</b>	<b>4</b>
<b>BSEN</b>	<b>3230</b>		<b>Natural Resource Conserv Eng.....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>3310</b>		<b>Hydraulic Transport in Biosystems.....</b>	<b>**</b>	<b>**</b>
<b>BSEN</b>		<b>3610</b>	<b>Instrumentation &amp; Controls for Biosystems .....</b>	<b>**</b>	<b>3</b>
				<b>17</b>	<b>17</b>
<b>SR</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Fine Arts .....	**	3
			Core Philosophy .....	3	**
<b>BSEN</b>	<b>4510</b>		<b>Fundamentals of Ecological Engng .....</b>	<b>3</b>	<b>**</b>
<b>BSEN</b>		<b>4520</b>	<b>Watershed Modeling .....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>		<b>4230</b>	<b>Waste Mgt &amp; Utilization Eng for Biosys.....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>4560</b>		<b>Site Design.....</b>	<b>3</b>	<b>**</b>
<b>BSEN</b>	<b>5220</b>		<b>Geospatial Tech in Biosystems .....</b>	<b>3</b>	<b>**</b>
<b>BSEN</b>		<b>4310</b>	<b>Engr Design for Biosystems.....</b>	<b>**</b>	<b>4</b>
			<b>Ecological Engineering Elective .....</b>	<b>3</b>	<b>**</b>
UNIV		4AA0	EN1 Undergraduate Graduation.....	**	0
				<b>18</b>	<b>16</b>

TOTAL HOURS - 133

Biosystems Electives: see adviser for approved course listing.

## 17 Forest Engineering Option

The Department of Biosystems Engineering in conjunction with the Samuel Ginn College of Engineering and School of Forestry and Wildlife Sciences offers an option in forest engineering as a part of the bachelor of biosystems engineering degree. It is committed to preparing students for productive professional careers in the forest products industry and related natural resource and environmental systems sector.

The forest engineering option is coordinated by the Samuel Ginn College of Engineering and the School of Forestry and Wildlife Sciences. Beginning students should apply to the Samuel Ginn College of Engineering and complete the forest engineering option portion of the pre-biosystems engineering program. Students pursuing the forest engineering option must meet School of Forestry and Wildlife Sciences requirements for admission to the Forestry Summer Field Practicum.



Curriculum in Forest Engineering

FR	F	S		F	S
CHEM	1030		Fundamentals of Chemistry I .....	3	**
CHEM	1031		Fundamentals of Chemistry I Lab .....	1	**
ENGL	1100	1120	English Composition I & II .....	3	3
PHYS		1600	Engineering Physics I .....	**	4
MATH	1610	1620	Calculus I & II .....	4	4
			Core History .....	3	3
ENGR	1100		Engineering Orientation.....	0	**
ENGR		1110	Introduction to Engineering.....	**	2
COMP	1200		Introduction to Comp for Engrs & Sci .....	2	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
			Core Fine Arts .....	**	3
BIOL	1020		Principles of Biology & Lab (1021) .....	4	**
ENGR	2010		Thermodynamics.....	3	**
ENGR	2050		Statics .....	3	**
ENGR		2350	Dynamics.....	**	3
MATH	2630		Calculus III.....	4	**
MATH		2650	Differential Equations .....	**	3
STAT		3010	Statistics for Engr & Sci.....	**	3
CHEM		1040	Fundamentals of Chemistry II (F) OR .....	**	3
<b>BSEN</b>	<b>2240</b>		<b>Biol and Bioenviro Heat &amp; Mass Transfer (P).....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>2210</b>		<b>Engineering Methods for Biosystems .....</b>	<b>2</b>	<b>**</b>
				<b>16</b>	<b>15</b>
<b>SUMMER PRACTICUM</b>					
	<b>FOEN</b>	<b>3000</b>	<b>Intro to Forest Operations .....</b>	<b>2</b>	<b>**</b>
	<b>FOEN</b>	<b>3040</b>	<b>Forest Surveying.....</b>	<b>3</b>	<b>**</b>
	FORV	3020	Forest Biology .....	2	**
	FORV	3050	Field Mensuration.....	3	**
	FORV	3060	Intro to Forest Management.....	2	**
				<b>12</b>	<b>**</b>
<b>JR</b>					
ECON		2020	Microeconomics.....	**	3
ENGL		2200	World Literature I .....	**	3
ENGR	2070		Mechanics of Materials .....	3	**
FORV	3100		Dendrology (F) OR.....	3	**
FOPR	3390		Wood Science (P).....	3	**
FORV	3180		Measurements I.....	3	**
CIVL		3310	Geotechnical Engr (F) OR .....	**	4
<b>BSEN</b>	<b>3610</b>		<b>Instrumentation &amp; Controls for Biosys (P) .....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>3210</b>		<b>Mech Power for Biosystems .....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>3240</b>		<b>Process Engng in Biosystems (P) .....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>3230</b>		<b>Natural Resource Conserv Engr .....</b>	<b>**</b>	<b>3</b>
<b>BSEN</b>	<b>3310</b>		<b>Hydraulic Transport in Biosystems.....</b>	<b>4</b>	<b>**</b>
				<b>16</b>	<b>13/15</b>
<b>SR</b>					
			PHIL 1020 or 1040 Ethics .....	**	3
ENGL	2210		World Literature I .....	**	3
			Core Social Science Group I.....	**	3
FORV	5230		Silviculture (F) OR.....	4	**
<b>FOEN</b>	<b>5230</b>		<b>Engr Wood Structures Design (P) .....</b>	<b>3</b>	<b>**</b>
<b>BSEN</b>	<b>4560</b>		<b>Site Design (F) OR .....</b>	<b>3</b>	<b>**</b>
FOPR	4200		Forest Products Utilization (P).....	3	**
<b>BSEN</b>	<b>5220</b>		<b>Geospatial Tech in Biosystems .....</b>	<b>3</b>	<b>**</b>
<b>BSEN</b>	<b>4310</b>		<b>Engr Design for Biosystems.....</b>	<b>**</b>	<b>4</b>
<b>FOEN</b>	<b>5710</b>		<b>Timber Harvest Analy Methods.....</b>	<b>3</b>	<b>**</b>
			<b>Forest Engineering Elective .....</b>	<b>**</b>	<b>3</b>
UNIV	4AA0		EN1 Undergraduate Graduation.....	**	0
				<b>16/15</b>	<b>13</b>

TOTAL HOURS - 133/134

Forest Engineering Elective: see adviser for approved course listing.  
 (F) denotes courses for Forest Emphasis.  
 (P) denotes courses for Products Emphasis.

Department of Chemical Engineering

Chemical engineers contribute to society, through the useful application of knowledge and understanding of chemistry, physics, biology, and mathematics. Chemical engineers traditionally have participated in many decisions crucial to the preservation and improvement of society, including energy, fuel, commodity chemical and food production, resource management, and the design of necessary pollution control measures. Emerging new areas such as biotechnology, space technology, nanofabrication technology, semiconductor devices and modern construction materials also utilize the unique capabilities of the chemical engineer. Many technologies to improve public health depend significantly on chemical engineering such as biomaterials, biomedical devices, medical diagnostics, the chemical design and synthesis of drugs, the genetic engineering of therapeutic materials, drug delivery systems and medical imaging technology. Finally, chemical engineering plays an essential role in important environmental technologies such as atmospheric chemistry, product life cycle analysis, bioremediation, environmental risk and impact analysis, environmental friendly manufacturing technology and products, separation and conversion technologies for waste reduction and the cleanup of contaminated sites.

The instructional mission of the department is to provide its chemical engineering graduates with the tools, skills and competencies necessary to understand and apply today's technologies and, through life-long learning, successfully develop and employ tomorrow's technologies.

Specific program educational objectives of the Chemical Engineering program are: (1) Our graduates apply their technical proficiency for the professional practice of chemical engineering or any other career path they choose. (a) They successfully utilize practical engineering skills and have productive, gainful, and ethical careers in chemical and related industries and organizations. (b) They successfully pursue advanced technical and professional degrees. (c) They successfully transition into other professional areas, such as medicine, law, business or management. (2) Our graduates contribute to the professional practice of their chosen field through effective communication, leadership, teamwork, and service, while maintaining high ethical and professional standards. (3) Our graduates apply high standards in the performance of their professional work including global and societal issues such as health, safety, and the protection of the environment. (4) Our graduates demonstrate continued life-long learning through professional activities and training, the pursuit of higher educational degrees, and individual professional improvement.

Because of their broad training and education, chemical engineers contribute to society in many functions, such as pure research, development, environmental protection, process design, plant operation and manufacturing, marketing, sales, and corporate or government administration.

The program is specially designed to assure all students have demonstrated capabilities in the core chemical engineering topics including material and energy balances, thermodynamics, chemical equilibria, heat, mass and momentum transfer, chemical reaction engineering, continuous and stagewise separation operations, process dynamics, statistics and control. The design experience is interwoven throughout the curriculum from elementary design principles in material and energy balances to the capstone senior process design and process control sequence employing advanced computer process and control simulators and experimental control systems.

The curriculum is specifically designed to enable graduates to model and design chemical and physical processes, design and conduct experiments, analyze and interpret chemical engineering data, and to determine capital and operating costs for chemical and physical processes. The curriculum prepares graduates to understand the need for professional integrity and ethical decision making in the practice of chemical engineering as well as providing an understanding of contemporary issues including business practices, environmental, health, and safety and other public interests. Students are also prepared for graduate study in chemical engineering, medicine, business and law.

Because of the breadth of chemical engineering opportunities, the department offers a number of specially designed program specializations that provide unique training and course selection to those students who wish to concentrate in a particular area or technology. The current program specializations are biochemical engineering, biomedical engineering, computer-aided chemical engineering, environmental chemical engineering, pre-medicine specialization and pulp, paper and bio-resource engineering.

Curriculum in Chemical Engineering

FR	F	S		F	S
CHEM	1110	1120	General Chemistry I & II .....	3	3
CHEM	1111	1121	General Chemistry Lab I & II .....	1	1
COMP		1200	Computer Science .....	**	2
ENGL	1100	1120	English Composition I & I.....	3	3
ENGR		1100	Engineering Orientation.....	**	0
ENGR	1110		Introduction to Engineering.....	2	**
MATH	1610	1620	Calculus I & II .....	4	4
PHYS		1600	Engineering Physics I .....	**	4
			Core History .....	3	**
				<b>16</b>	<b>17</b>
<b>SO</b>					
BIOL	1020		Principles of Biology .....	3	**
BIOL	1021		Principles of Biology Lab .....	1	**
CHEM		2070	Organic Chemistry I.....	**	3
CHEM		2071	Organic Chemistry Lab I.....	**	1
<b>CHEN</b>	<b>2AA0</b>		<b>Progress Assessment I.....</b>	<b>**</b>	<b>0</b>
<b>CHEN</b>	<b>2100</b>		<b>Principles of Chemical Engineering .....</b>	<b>4</b>	<b>**</b>
<b>CHEN</b>	<b>2610</b>		<b>Transport I.....</b>	<b>**</b>	<b>3</b>
ENGL		2200	World Literature I .....	**	3
ENGR		2010	Thermodynamics.....	**	3
MATH	2630		Multivariate Calculus.....	4	**

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MATH	2650	Differential Equations .....	**	3	
PHYS	1610	Engineering Physics II .....	**	4	
				16	16
<b>JR</b>					
CHEM	2080	Organic Chemistry II.....	3	**	
CHEM	3AA0	Progress Assessment II.....	**	0	
CHEM	3370	Phase & Reaction Equilibria.....	3	**	
CHEM	3600	Computer - Aided Chemical Engineering .....	3	**	
CHEM	3620	Transport II.....	3	**	
CHEM	3650	Applied ChE Analysis .....	**	3	
CHEM	3660	ChE Separations.....	**	3	
CHEM	3700	Chemical Reaction Engineering .....	**	3	
CHEM	3820	ChE Lab I.....	**	2	
ENGL	2210	World Literature II.....	3	**	
		Core History .....	**	3	
				15	14
<b>SUMMER</b>					
CHEM	4860	ChE Lab II.....	2		
PHIL	1040	Business Ethics.....	3		
		CHEM Technical Elective 1 .....	3		
		Core Social Science Group II .....	3		
				11	
<b>SR</b>					
CHEM	4170	Digital Process Control.....	3	**	
CHEM	4450	Process Economics & Safety .....	3	**	
CHEM	4460	Process Simulation & Optimization .....	2	**	
CHEM	4470	Process Design Practice .....	**	3	
		CHEM Technical Elective 2 .....	3	**	
		CHEM Technical Elective 3 or ROTC.....	**	3	
		CHEM Technical Elective 4 or ROTC.....	**	3	
		Advanced Chemistry Elective .....	3	**	
		Core Fine Arts .....	**	3	
		Core Social Science Group I.....	**	3	
UNIV	4AA0	EN1 Undergraduate Graduation.....	**	0	
				14	15

**TOTAL HOURS - 134**

Electives, Technical Electives, Advanced Chemistry Elective: See adviser for approved course listing.

**Biochemical Engineering Specialization**

Chemical engineers trained in biochemical engineering and biotechnology are the key to successful commercialization of new biologically based processes ranging from high value pharmaceuticals to new food processes. This program specialization provides a strong biology and chemistry fundamental background for graduate work in biochemical engineering and a plan of study to meet these objectives.

Students in this specialization take BCHE 5180, CHEN 5800, and Biochemical Engineering Technical Elective (9 hours). These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

**Biomedical Engineering Specialization**

This specialization provides the necessary preparation for students wanting to do graduate work in biomedical engineering or work in a career with an emphasis of medical applications of chemical engineering.

Students in this specialization take PHIL 1030, CHEM 2081, BCHE 5180, CHEN 5810, and a Biomedical Engineering Technical Elective (8 hour). These courses replace Technical Elective I-IV, the Advanced Chemistry Elective and PHIL 1040.

**Computer-Aided Chemical Engineering Specialization**

Chemical engineers with expertise in the application of advanced computer-aided tools in areas like process systems engineering, process control, and advanced process technology are highly sought after by all process industries. The program specialization provides appropriate courses for an individual with interests in advanced use of computers for solving chemical and biological engineering problems.

Students in this specialization take BCHE 5180 and a Computer-Aided Chemical Engineering Technical Elective (12 hours). These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

**Environmental Chemical Engineering Specialization**

The environmental specialization in chemical engineering prepares students for careers in the expanding environmental arena. Students specializing in this area learn about the chemical processes and reactions that affect the environment, pollution prevention, the latest standards for air, water and land quality, as well as, hazardous materials management. This specialization prepares students for environmental positions in a broad range of manufacturing and service industries all of which must comply with increasingly complex environmental standards, and in various state and federal agencies.

Students in this specialization take BCHE 5180 and Environmental Chemical Engineering Technical Electives (12 hours). These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

**Pre-Medicine Specialization**

This specialization provides the necessary preparation for students wanting to go to medical school. A Pre-Med series of courses, when completed, provides a chemical engineering degree while simultaneously meeting medical school requirements.

Students in this specialization take PHIL 1030, CHEM 2081, BCHE 5180, CHEN 5810, BIOL 1030/1031 and a Pre-Medicine Technical Elective (4 hour). These courses replace Technical Elective I-IV, PHIL 1040 and the Advanced Chemistry Elective. Students in this program specialization who are interested in medical school must also work with the director for Pre-Health Professions in the College of Science and Mathematics.

**Pulp, Paper and Bio-Resource Engineering Specialization**

This specialization prepares students for challenging and rewarding careers in the pulp, paper and bio-resource industries. These industries are unique in being capable of sustainable development with a renewable raw material base, recyclable products, and processing technology able to achieve energy self-sufficiency and environmental compatibility. This specialization prepares students for a broad range of career paths in process engineering, product development, bio-technology and sustainable engineering.

Students in this specialization take CHEM 2081, BCHE 5180, CHEN 3090, CHEN 4100, and CHEN 5110. These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

**Department of Civil Engineering**

Civil engineers conceive, plan, design, construct, operate, and maintain the facilities and systems that serve the basic needs of society. Auburn University's Department of Civil Engineering strives to prepare students, through high quality programs, to practice civil engineering professionally in a competitive global environment. The department's objectives include preparing graduates to play an active role in the civil engineering profession by functioning as effective team members while developing leadership skills in the profession and in the community, communicating ideas and information effectively, and expanding their body of knowledge and experience as they make progress towards licensure as professional engineers. Graduates should be able to successfully engage in one or more of the following activities: planning and design of new civil infrastructure systems, or rehabilitation of existing systems; monitoring and analysis of the performance of existing infrastructure systems to assess their safety, efficiency, or remaining usefulness; management of natural resources and processes; management of construction or rehabilitation processes; and graduate or professional studies.

The first two years focus on basic principles, which are applied in the last two years in required and elective courses in major specialty areas including construction, geotechnical, transportation, hydraulics, structural, pavements, and environmental engineering. Engineering science and design are integrated throughout, with the design emphasis shifting from introduction of fundamental concepts, principles and tools in the early courses to increasingly realistic situations. The experience culminates in the capstone senior design project. Graduates are prepared for a variety of entry-level civil engineering positions.

**Curriculum in Civil Engineering**

	FR	F	S		F	S
ENGL	1100	1120		English Composition I & II .....	3	3
PHYS	1600	1610		Engineering Physics I & II.....	4	4
MATH	1610	1620		Calculus I & II .....	4	4
				Core History .....	3	3
ENGR	1100			Engineering Orientation.....	0	**
ENGR			1110	Introduction to Engineering.....	**	2
COMP	1200			Introduction to Computing.....	2	**
					16	16
<b>SO</b>						
CHEM	1030	1040		Fund of Chemistry I & II.....	3	3
CHEM	1031			Fund of Chemistry I Lab .....	1	**
ENGL	2200			World Literature I.....	3	**
ENGR	2050			Statics .....	3	**
ENGR		2070		Mechanics of Materials .....	**	3
ENGR		2200		Thermo/Fluids/Heat .....	**	3
ENGR		2350		Dynamics.....	**	3
MATH	2630			Calculus III.....	4	**

Samuel Ginn College of Engineering

MATH	2650	Linear Diff Equations .....	**	3	COMM	1000	Public Speaking .....	**	3
<b>CIVL</b>	<b>2010</b>	<b>SURVEYING .....</b>	<b>**</b>	<b>3</b>	ELEC	2200	Digital Logic Circuits .....	**	3
				<b>17</b>	MATH	2660	Linear Algebra .....	3	**
				<b>15</b>			Science Elective .....	4	**
		<b>SUMMER</b>			<b>COMP</b>	<b>2710</b>	<b>Software Construction.....</b>	<b>**</b>	<b>3</b>
ENGL	2210	World Literature II .....	3		<b>COMP</b>	<b>2210</b>	<b>Fundamentals of Computing II.....</b>	<b>4</b>	<b>*</b>
		Core Social Science .....	3					<b>17</b>	<b>15</b>
STAT	3010	Stat Meth Sci & Engineering .....	3		<b>JR</b>				
			9		PHIL		PHIL 1020 OR PHIL 1040 .....	**	3
<b>JR</b>		<b>Civil Engineering Analysis .....</b>	<b>4</b>	<b>**</b>	STAT	3600	Probability and Statistics .....	3	**
<b>CIVL</b>	<b>3010</b>	<b>Hydraulics .....</b>	<b>**</b>	<b>4</b>			Concentration.....	**	3
<b>CIVL</b>	<b>3110</b>	<b>Introduction to Environmental Engineering .....</b>	<b>**</b>	<b>4</b>	<b>COMP</b>	<b>3220</b>	<b>Principles of Programming Languages.....</b>	<b>3</b>	<b>**</b>
<b>CIVL</b>	<b>3230</b>	<b>Geotechnical Engineering I .....</b>	<b>**</b>	<b>4</b>			Core Social Science Group II .....	**	3
<b>CIVL</b>	<b>3310</b>	<b>Construction Engineering.....</b>	<b>**</b>	<b>3</b>	<b>COMP</b>	<b>3270</b>	<b>Introduction to Algorithms .....</b>	<b>3</b>	<b>**</b>
<b>CIVL</b>	<b>3410</b>	<b>Transportation Engineering.....</b>	<b>**</b>	<b>4</b>	<b>COMP</b>	<b>3350</b>	<b>Comp Org &amp; Assemb Lng Prog.....</b>	<b>3</b>	<b>**</b>
<b>CIVL</b>	<b>3510</b>	<b>Structural Analysis .....</b>	<b>**</b>	<b>4</b>	<b>COMP</b>	<b>3500</b>	<b>Introduction to Operating Systems .....</b>	<b>**</b>	<b>3</b>
<b>CIVL</b>	<b>3610</b>	<b>Civil Engineering Materials.....</b>	<b>**</b>	<b>3</b>	<b>COMP</b>	<b>3700</b>	<b>Software Modeling and Design.....</b>	<b>**</b>	<b>3</b>
			<b>15</b>	<b>15</b>			Core Fine Arts .....	3	**
<b>SR</b>					<b>SR</b>				<b>15</b>
PHIL	1020	Introduction to Ethics .....	3	**			Free Elective or ROTC.....	3	**
		Core Fine Arts .....	**	3			Concentration.....	3	**
		Core Social Science .....	**	3	<b>COMP</b>	<b>4200</b>	Concentration.....	**	3
		<b>Science Elective .....</b>	<b>**</b>	<b>4</b>	<b>COMP</b>	<b>4320</b>	<b>Formal Languages .....</b>	<b>3</b>	<b>**</b>
<b>CIVL</b>		<b>Specialty Elective .....</b>	<b>6</b>	<b>3</b>	<b>COMP</b>	<b>4730</b>	<b>Introduction to Computer Networks .....</b>	<b>3</b>	<b>**</b>
<b>CIVL</b>		<b>Technical Elective.....</b>	<b>3</b>	<b>3</b>			<b>Computer Ethics.....</b>	<b>**</b>	<b>1</b>
<b>CIVL</b>		<b>Senior Design Project.....</b>	<b>**</b>	<b>3</b>	<b>COMP</b>	<b>4AA0</b>	<b>COMP Elective.....</b>	<b>**</b>	<b>3</b>
UNIV	4AA0	EN1 Undergraduate Graduation.....	**	0			Math Elective.....	**	3
			<b>16</b>	<b>15</b>	UNIV	4AA0	EN1 Undergraduate Graduation.....	**	0
									<b>15</b>
									<b>13</b>
		<b>TOTAL HOURS - 134</b>					<b>TOTAL HOURS - 123</b>		

Science Elective, Specialty Elective, Technical Elective: see adviser for approved course listing.

COMP Elective, Math/Science Elective: See adviser for approved course listing.

## Department of Computer Science and Software Engineering

### Computer Science

The computer science curriculum, which leads to the bachelor of science in computer science degree, provides an excellent preparation for students seeking careers as software professionals and in computing-related fields, as well for those planning to pursue graduate study. The curriculum builds on a strong foundation in science, mathematics, social sciences, humanities and computer science with advanced course work in theoretical computer science, human-computer interaction, and net-centric computing. Course work ensures that students receive hands-on exposure to a variety of computer systems, tools and techniques. Elective courses allow students to specialize in core areas of computer science such as networking, database systems, and artificial intelligence. In addition, students select a concentration of 9 semester credit hours outside computer science (e.g., business, mathematics, physics, etc.). This concentration enriches students' educational experience and adds breadth of knowledge by providing an opportunity to explore a second field of study to which computer science can be applied. The curriculum also emphasizes oral and written communication skills, the importance of ethical behavior, and the need for continual, lifelong learning.

Specific educational objectives of the Computer Science program are to: (1) Develop within graduates the level of technical proficiency needed for the professional practice of computer science; (2) Develop within graduates the ability to effectively communicate their ideas to other practicing professionals and the general public; (3) Instill within graduates an appreciation for and the ability to engage in life-long learning; (4) Instill within graduates an appreciation for and an understanding of the need to maintain high ethical standards both as professionals as well as individuals; (5) Prepare graduates to compete for positions in the job market and in graduate schools.

The Computer Science degree program is accredited by Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 C telephone: 410-347-7700.

#### Curriculum in Computer Science

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
HIST			Core History .....	3	3
MATH	1610	1620	Calculus I & II .....	4	4
ENGR	1110		Introduction to Engineering .....	2	**
			Core Science Sequence I & II.....	4	4
<b>COMP</b>	<b>1210</b>		<b>Fundamentals of Computing I.....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>17</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I .....	3	**
<b>COMP</b>	<b>3240</b>		<b>Discrete Structures .....</b>	<b>**</b>	<b>3</b>

### Software Engineering

The focus of the software engineering curriculum, which leads to the bachelor of software engineering, is on the analysis, design, verification, validation, construction, application, and maintenance of software systems. The degree program prepares students for professional careers and graduate study with a balance of computer science theory and practical application of software engineering methodology using modern software engineering environments and tools. The curriculum is based on a strong core of topics including software modeling and design, construction, process and quality assurance, intelligent and interactive systems, networks, operating systems, and computer architecture. The curriculum also enriches each student's general education with a range of courses from science, mathematics, the humanities and the social sciences. Through advanced elective courses, the curriculum allows students to specialize in core areas of computer science and software engineering. Engineering design theory and methodology, as they apply to software systems, form an integral part of the curriculum, beginning with the first course in computing and culminating with a comprehensive senior design project, which gives students the opportunity to work in one or more significant application domains. The curriculum also emphasizes oral and written communication skills, the importance of ethical behavior, and the need for continual, life-long learning.

Specific educational objectives of the Software Engineering program are to: (1) Develop within graduates the level of technical proficiency needed for the professional practice of software engineering; (2) Develop within graduates the ability to effectively communicate their ideas to other practicing professionals and to the general public; (3) Instill within graduates an appreciation for and the ability to engage in lifelong learning; (4) Instill within graduates an appreciation for and an understanding of the need to maintain high ethical standards both as professionals as well as individuals; (5) Prepare graduates to compete for positions in the job market and in graduate schools.

The software engineering program is accredited by the Engineering Accreditation Commission of ABET, 11 Market Place, Suite 1050, Baltimore, MD 21202-4012 (telephone: 410-347-7700).

#### Curriculum in Software Engineering

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
HIST			Core History .....	3	3
PHYS	1600	1610	Physics I & II .....	4	4
MATH	1610	1620	Calculus I & II .....	4	4
ENGR	1100		Engineering Orientation.....	0	**
ENGR	1110		Introduction to Engineering.....	2	**
<b>COMP</b>	<b>1210</b>		<b>Fund of Computing I .....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>17</b>

<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Social Science Group I .....	3	**
<b>COMP</b>	<b>3240</b>		<b>Discrete Structures</b> .....	<b>**</b>	<b>3</b>
			Core Fine Arts .....	3	**
ELEC		2200	Digital Logic Circuits .....	**	3
MATH	2630		Calculus III .....	4	**
MATH		2660	Linear Algebra .....	**	3
<b>COMP</b>	<b>2710</b>		<b>Software Construction</b> .....	<b>**</b>	<b>3</b>
<b>COMP</b>	<b>2210</b>		<b>Fund of Computing II</b> .....	<b>4</b>	<b>**</b>
				<b>17</b>	<b>15</b>
<b>JR</b>					
PHIL			PHIL 1020 OR PHIL 1040 .....	**	3
ENGR	2100		Fund of Engr Mechanics .....	3	**
MATH	2650		Linear Differential Equations .....	3	**
STAT		3600	Probability and Statistics .....	**	3
<b>COMP</b>	<b>3220</b>		<b>Principles of Programming Languages</b> .....	<b>3</b>	<b>**</b>
			Core Social Science Group II .....	**	3
<b>COMP</b>	<b>3270</b>		<b>Introduction to Algorithms</b> .....	<b>3</b>	<b>**</b>
<b>COMP</b>	<b>3350</b>		<b>Comp Org &amp; Assemb Lng Prog</b> .....	<b>3</b>	<b>**</b>
<b>COMP</b>	<b>3500</b>		<b>Introduction to Operating Systems</b> .....	<b>**</b>	<b>3</b>
<b>COMP</b>	<b>3700</b>		<b>Software Modeling and Design</b> .....	<b>**</b>	<b>3</b>
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>COMP</b>	<b>4300</b>		<b>Computer Architecture</b> .....	<b>3</b>	<b>**</b>
<b>COMP</b>	<b>4320</b>		<b>Introduction to Computer Networks</b> .....	<b>3</b>	<b>**</b>
<b>COMP</b>	<b>4710</b>		<b>Senior Design Project</b> .....	<b>**</b>	<b>3</b>
<b>COMP</b>	<b>4730</b>		<b>Computer Ethics</b> .....	<b>**</b>	<b>1</b>
<b>COMP</b>	<b>5700</b>		<b>Software Process</b> .....	<b>3</b>	<b>**</b>
<b>COMP</b>	<b>5710</b>		<b>Software Quality Assurance</b> .....	<b>**</b>	<b>3</b>
			<b>COMP Elective</b> .....	<b>6</b>	<b>3</b>
			Free Elective or ROTC .....	**	3
UNIV	4AA0		EN1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>13</b>

**TOTAL HOURS - 123**

COMP Electives: See adviser for approved course listing.

## Department of Electrical and Computer Engineering

The Electrical and Computer Engineering curricula produce well-educated graduates prepared to practice engineering at a professional level in an era of rapid and challenging technological development. The educational objectives of the Electrical Engineering curriculum include developing within our graduates a basic foundation in seven fundamental areas of electrical engineering (circuits and systems, electromagnetics, electronics, digital systems, communications and signal processing, control systems, and power engineering) to provide the technical proficiency needed for the professional practice of electrical engineering. The educational objectives of the Computer Engineering Option include developing within our graduates a basic foundation in both electrical engineering (circuits and systems, electronics, and digital systems) and computer science to provide the technical proficiency needed for the professional practice of computer engineering, including the design and application of computer components and systems. In addition, both curricula have as educational objectives to develop within our graduates the ability to communicate their ideas effectively to technical and non-technical audiences and work effectively in multidisciplinary terms, to prepare them to take their places in society as responsible citizens, and to provide them with the basis for, and instill within them an appreciation of and enthusiasm for, lifelong scientific inquiry, learning and creativity.

The goal of the professional portion of each curriculum is to emphasize basic areas of study while providing the flexibility to accommodate a diversity of interests and talents. To this end, each curriculum emphasizes engineering design, hands-on laboratory experience, knowledgeable use of digital computer systems, oral and written communication skills, the importance of business, economic, social and global forces on engineering, appreciation of the need to maintain the highest ethical standards, and the maintenance of professional competence through continued self-improvement after graduation.

Each curriculum builds upon a solid foundation in mathematics and science. In the Electrical Engineering curriculum, topics in the seven fundamental areas of electrical engineering are introduced early and are carefully coordinated to provide the principles necessary for the practice of electrical engineering. In the Computer Engineering Option, fundamental topics in both electrical engineering and computer science are introduced early and are carefully coordinated to provide the principles necessary for the design and application of computer components and systems. In each case, design experience is interwoven throughout the curriculum by

introducing basic design concepts early, emphasizing design experiences in the laboratories, and culminating with a capstone design project in the senior year. The senior year elective structure provides students with the flexibility to pursue a range of career options.

### Curriculum in Electrical Engineering

	<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120		English Composition I & II .....	3	3
PHYS	1600	1610		Engineering Physics I & II .....	4	4
MATH	1610	1620		Calculus I & II .....	4	4
				Core History .....	3	3
ENGR	1100			Engineering Orientation .....	0	**
ENGR		1110		Introduction to Engineering .....	**	2
COMP	1200			Intro to Comp Prog for Engr & Sci .....	**	2
					<b>16</b>	<b>16</b>
<b>SO</b>						
CHEM		1030		Fundamentals of Chemistry I .....	**	3
CHEM		1031		Fundamentals of Chemistry I Lab .....	**	1
				Core Social Science Group I .....	3	**
MATH	2630			Calculus III .....	4	**
MATH	2650			Linear Diff Equations .....	3	**
MATH		2660		Topics in Linear Algebra .....	**	3
<b>ELEC</b>	<b>2110</b>			<b>Electric Circuit Analysis</b> .....	<b>4</b>	<b>**</b>
<b>ELEC</b>	<b>2120</b>			<b>Linear Signals &amp; Systems Analysis</b> .....	<b>**</b>	<b>3</b>
<b>ELEC</b>	<b>2210</b>			<b>Digital Electronics</b> .....	<b>**</b>	<b>4</b>
<b>ELEC</b>	<b>2200</b>			<b>Digital Logic Circuits</b> .....	<b>3</b>	<b>**</b>
<b>ELEC</b>	<b>2220</b>			<b>Computer Systems</b> .....	<b>**</b>	<b>3</b>
					<b>17</b>	<b>17</b>
<b>JR</b>						
ENGL	2200	2210		World Literature I & II .....	3	3
<b>ELEC</b>	<b>3030</b>			<b>RF Systems Lab</b> .....	<b>**</b>	<b>1</b>
<b>ELEC</b>	<b>3040</b>			<b>Electrical System Design Lab</b> .....	<b>**</b>	<b>1</b>
<b>ELEC</b>	<b>3310</b>			<b>Fundamentals of Applied Electromagnetics</b> .....	<b>3</b>	<b>**</b>
<b>ELEC</b>	<b>3320</b>			<b>Electromagnetics for Wireless Communications</b> .....	<b>**</b>	<b>3</b>
<b>ELEC</b>	<b>3400</b>			<b>Communication Systems</b> .....	<b>**</b>	<b>3</b>
<b>ELEC</b>	<b>3500</b>			<b>Control Systems</b> .....	<b>**</b>	<b>3</b>
<b>ELEC</b>	<b>3600</b>			<b>Electric Power Engineering</b> .....	<b>3</b>	<b>**</b>
<b>ELEC</b>	<b>3700</b>			<b>Analog Electronics</b> .....	<b>3</b>	<b>**</b>
<b>ELEC</b>	<b>3800</b>			<b>Random Signals and Systems</b> .....	<b>3</b>	<b>**</b>
				Fine Arts Elective .....	**	3
					<b>16</b>	<b>16</b>
<b>SR</b>						
PHIL		1040		Business Ethics .....	**	3
				Core Social Science Group II .....	3	**
ENGR	2100			Fundamentals of Engr Mechanics .....	3	**
ENGR		2200		Introduction Thermo Fluids & Heat .....	**	3
INSY	3600			Engineering Economics .....	3	**
<b>ELEC</b>	<b>4000</b>			<b>Senior Design Project</b> .....	<b>**</b>	<b>3</b>
				<b>ELEC Elective</b> .....	<b>3</b>	<b>3</b>
				Math/Science Elective .....	3	**
				Elective .....	**	3
UNIV	4AA0			EN1 Undergraduate Graduation .....	**	0
					<b>15</b>	<b>15</b>

**TOTAL HOURS - 128**

ELEC Elective, Math/Science Elective: see adviser for approved course listing.

### Curriculum in Electrical Engineering (Computer Engineering Option)

	<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120		English Composition I & II .....	3	3
PHYS	1600	1610		Engineering Physics I & II .....	4	4
MATH	1610	1620		Calculus I & II .....	4	4
				Core History .....	3	3
<b>COMP</b>	<b>1210</b>			<b>Fund of Computing I</b> .....	<b>**</b>	<b>3</b>
ENGR	1110			Introduction to Engineering .....	2	**
ENGR	1100			Engineering Orientation .....	0	**
					<b>16</b>	<b>17</b>
<b>SO</b>						
MATH	2630			Calculus III .....	4	**
MATH	2650			Linear Diff Equations .....	3	**
MATH		2660		Topics in Linear Algebra .....	**	3
<b>COMP</b>	<b>2710</b>			<b>Software Construction</b> .....	<b>**</b>	<b>3</b>
<b>ELEC</b>	<b>2110</b>			<b>Electric Circuit Analysis</b> .....	<b>4</b>	<b>**</b>
<b>ELEC</b>	<b>2120</b>			<b>Linear Signals &amp; Systems Analysis</b> .....	<b>**</b>	<b>3</b>
<b>COMP</b>	<b>2210</b>			<b>Fundamentals of Computer Sci II</b> .....	<b>4</b>	<b>**</b>
<b>ELEC</b>	<b>2210</b>			<b>Digital Electronics</b> .....	<b>**</b>	<b>4</b>
<b>ELEC</b>	<b>2200</b>			<b>Digital Logic Circuits</b> .....	<b>3</b>	<b>**</b>
<b>ELEC</b>	<b>2220</b>			<b>Computer Systems</b> .....	<b>**</b>	<b>3</b>
					<b>18</b>	<b>16</b>
<b>JR</b>						
CHEM		1030		Fundamentals of Chemistry I .....	**	3
CHEM		1031		Fundamentals of Chemistry I Lab .....	**	1
ENGL	2200	2210		World Literature I & II .....	3	3
				Core Fine Arts .....	**	3
<b>ELEC</b>	<b>3050</b>			<b>Embedded System Design Lab</b> .....	<b>1</b>	<b>**</b>
<b>COMP</b>	<b>3240</b>			<b>Discrete Structures</b> .....	<b>3</b>	<b>**</b>
<b>COMP</b>	<b>3270</b>			<b>Introduction to Algorithms</b> .....	<b>**</b>	<b>3</b>
<b>COMP</b>	<b>3500</b>			<b>Introduction to Operating Systems</b> .....	<b>3</b>	<b>**</b>
<b>ELEC</b>	<b>3700</b>			<b>Analog Electronics</b> .....	<b>3</b>	<b>**</b>

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ELEC	4200	Digital System Design.....**	3	SO	
ELEC	3800	Random Signals & Systems .....3	**		
			16	16	
SR		Core Social Science Group I & II.....3	3		
PHIL	1040	Business Ethics.....**	3		
INSY	3600	Engineering Economics.....**	**		
ELEC	4000	Senior Design Projects.....**	3		
ELEC	5200	Computer Architecture & Design.....3	**		
ELEC	5220	Information Networks & Technology.....3	**		
		ECE Elective.....**	5		
		Elective.....**	3		
UNIV	4AA0	EN1 Undergraduate Graduation.....3	0		
			15	14	

**TOTAL HOURS - 128**

ECE elective - see adviser for approved course listing.

**Joint Program in Wireless Engineering**

The wireless engineering curriculum is a joint offering of the Department of Electrical and Computer Engineering and the Department of Computer Science and Software Engineering, leading to the bachelor of wireless engineering (BWE). To meet the need for engineers that can improve life and business in these times of a mobile society, the educational objectives of this curriculum are (1) to develop within our graduates a basic foundation in wireless engineering and either electrical engineering, software engineering, or communication networks that will provide the technical proficiency needed for the professional practice of engineering in the wireless industry, (2) to develop within our graduates the ability to communicate their ideas effectively within the technical community and to the general public, (3) to provide our graduates with the basis for, and instill within them an appreciation of and enthusiasm for, lifelong scientific inquiry, learning and creativity, and (4) to prepare our graduates to take their places in society as responsible citizens, with an appreciation of and understanding for the need to maintain the highest ethical standards in their personal and professional lives. Graduates of this program will be able to analyze, develop, design, test, administer and support wireless network systems, communication devices, and other components used in wireless computer and telecommunication networks.

The BWE curriculum has two formal options - wireless engineering-hardware (WIRE), emphasizing a hardware design-oriented approach to wireless engineering, and wireless engineering-software (WIRS), emphasizing a software-oriented approach. There is a network specialization within each option. Students interested in designing wireless hardware, such as integrated circuit chips, wireless communication devices, and wireless network switching equipment, should choose the WIRE hardware specialization option. Students interested in application software development, including server-side, client-side, and embedded applications, should choose the WIRS software specialization option. Students interested in pursuing a career with wireless service providers and other companies that develop and maintain wireless networks and sell service, can choose the Network Specialization within either the WIRE option or the WIRS option.

Each curriculum builds upon a solid foundation in mathematics, science, and electrical or software engineering fundamentals to introduce wireless communications theories, devices, circuits, systems, networks, standards, management, and applications. Design experience is interwoven throughout the curriculum by introducing basic design concepts early, emphasizing hands-on design experiences in the laboratories, including effective use of computers and other modern engineering tools, and culminating with a capstone design project in the senior year. In addition to its technical aspects, the curriculum emphasizes oral and written communication skills, the importance of business, economic, social and global forces on engineering, appreciation of the need to maintain the highest ethical standards, and the maintenance of professional competence through continued self-improvement after graduation.

**Wireless Engineering-Hardware Option**

FR	F	S	F	S
			3	3
ENGL	1100	1120	3	3
MATH	1610	1620	4	4
COMP	1200	1210	2	**
ENGR	1100	1110	0	**
ENGR	1110	1110	**	2
PHYS	1600	1610	4	4
			16	16

CHEM	1030	1031	3	**
CHEM	1031	1031	*	3
MATH	2630	2650	4	**
MATH	2650	2660	3	**
MATH	2660	2660	**	3
ELEC	2110	2110	4	**
ELEC	2120	2120	**	3
ELEC	2200	2200	**	3
ELEC	2210	2210	**	4
ELEC	2220	2220	**	3
			17	17

JR	ENGL	2200	2210	3	3
COMP	3000	3000	3000	3	**
INSY	3600	3600	3600	**	3
ELEC	3030	3030	3030	**	**
ELEC	3310	3310	3310	1	**
ELEC	3320	3320	3320	3	**
ELEC	3400	3400	3400	**	3
ELEC	3700	3700	3700	3	**
ELEC	3800	3800	3800	3	**
				**	3
				16	15

**TOTAL HOURS - 128**

\* Hardware Specialization requires ELEC 5130, ELEC 5410, and a Math/Science Elective  
 \*\* Network Specialization requires ELEC 5120, ELEC 5220, and INSY 3410

**Wireless Engineering-Software Option**

FR	F	S	F	S
HIST			3	3
ENGL	1100	1120	3	3
MATH	1610	1620	4	4
COMP	1210	1210	**	3
ENGR	1100	1100	0	**
ENGR	1110	1110	2	**
PHYS	1600	1610	4	4
			16	17

  

SO				
ENGL	2200	2200	**	3
MATH	2630	2630	**	3
MATH	2650	2650	4	**
MATH	2660	2660	3	**
COMP	2210	2210	**	3
COMP	2710	2710	**	3
ELEC	2110	2110	4	**
ELEC	2120	2120	**	3
ELEC	2200	2200	**	3
			18	15

  

JR				
ENGL	2210	2210	3	**
COMP	3240	3240	3	**
COMP	3270	3270	**	3
COMP	3350	3350	3	**
COMP	3510	3510	**	3
COMP	3710	3710	**	3
INSY	3600	3600	**	3
ELEC	3400	3400	**	3
ELEC	3800	3800	3	**
			15	15

  

SR				
PHIL	1020	1040	3	**
INSY	3410	3410	3	**
COMP	4730	4730	**	1
COMP	4320	4320	**	3
COMP	4710	4710	**	3
ELEC	3060	3060	1	**
COMP	5700	5700	3	**
ELEC	5120	5120	3	**

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COMP	5710	Software Quality Assurance * OR .....	**	3
COMP	5340	Network Quality Assurance ** .....		
COMP	5360	Wireless & Mobile Networks .....	**	3
		Wireless Elective/ROTC .....	**	3
		Free Elective/ROTC .....		3
		Fine Arts Elective .....	**	0
UNIV	4AA0	EN1 Undergraduate Graduation .....	**	3
				16 16

### TOTAL HOURS - 128

\* Software Specialization requires COMP 5700, COMP 5710, and a Math/Science Elective  
 \*\* Network Specialization requires INSY 3410, COMP 5340, ELEC 5120

Wireless Elective, Math/Science Elective: See adviser for approved course listing.

## Department of Industrial and Systems Engineering

Industrial and Systems Engineers plan, design, implement, and analyze systems. This engineering discipline is where technology, people, business and information intersect. The degree provides graduates with broad, flexible career opportunities with manufacturing, consulting, service or governmental organizations. The degree can also provide the foundation and background for further studies in engineering and business as well as professions such as law or medicine. The curriculum builds on a solid engineering mathematics and science core and adds courses in production and manufacturing, ergonomics and safety, engineering management, operations research, statistics, quality control, and information technologies. The curriculum graduates students who have:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for, and an ability to engage in, life-long learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- An ability to design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy.
- An ability to integrate systems using appropriate analytical, computational, and experimental practices.

### Curriculum in Industrial and Systems Engineering

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			History I & II .....	3	3
MATH	1610	1620	Calculus I & II .....	4	4
PHYS		1600	Engineering Physics I .....	**	4
CHEM	1030		Fundamentals of Chemistry I .....	3	**
CHEM	1031		Fundamentals of Chemistry I Lab .....	1	**
COMP		1200	Intro. Comp. Prog. ....	**	2
ENGR	1100		Eng Orientation .....	0	**
ENGR	1110		Introduction to Engineering .....	2	**
				16	16
SO					
ENGL	2200		World Literature .....	3	**
PHYS	1610		Engineering Physics II .....	4	**
MATH	2630		Calculus III .....	4	**
MATH	2650		Linear Diff Equations .....	3	**
MATH		2660	Topics in Linear Algebra .....	**	3
MATL		2100	Intro. to Material Science .....	**	3
INSY		3020	Occup. Safety & Ergon. ....	**	3
INSY		3021	Methods Engr. & Meas. ....	**	3
STAT	3600	3610	Prob. & Statistics I & II .....	3	3
STAT		3611	Applied Statistics Lab .....	**	1
				17	16

JR							
ENGL	2210		World Literature II .....	**	3		
			Core Social Science Group I & II .....		3		
			Spreadsheet-Based Apps w/ VBA .....	3	**		
COMP	3010		Stochastic Operations Research .....	3	**		
INSY	3400		Deterministic Operation Research .....	3	**		
INSY	3410		Manufacturing Processes .....	3	**		
INSY	3800		Simulation .....	**	3		
		3420	Engineering Economy .....	**	3		
		3600	Operations Planning .....	**	3		
		3700		**	3		
					15		15

### SR

			Core Fine Arts .....	**	3		
ELEC	3810		Fundamentals of Electrical Engineering .....	3	**		
PHIL	1040		Ethics .....	3	**		
INSY	4330		Quality Control .....	3	**		
INSY	4500		Professional Practice .....	1	**		
INSY	4700		Manufacturing Systems .....	3	**		
		4800	Senior Design Projects .....	**	3		
			INSY Electives .....	3	3		
			ENGR Elective .....	**	3		
			Technical Elective .....	**	3		
UNIV	4AA0		EN1 Undergraduate Graduation .....	**	0		
					16		15

### TOTAL HOURS - 126

## Department of Mechanical Engineering

The curriculum in Mechanical Engineering (MECH) focuses on the analysis, design, manufacturing, and maintenance of mechanical components and systems. Emphasis is placed on the fundamental concepts of engineering science and design needed in a variety of industries, including automotive, aerospace, biotechnology, material and chemical processing, microsystems and sensors, nanotechnology, machinery and robotics, pharmaceutical, energy production and distribution, heating and refrigeration, food production and processing, entertainment, pulp and paper, weapons systems, and many others. Mechanical engineering students take courses in several areas of engineering including: mechanics of rigid and deformable solids, thermofluid sciences, energy systems, dynamic systems and controls, design and manufacturing, materials, and electronics.

The educational objectives of the Mechanical Engineering program are to produce graduates who will be:

- Engaged in careers where they apply knowledge of the fundamental subject areas of mechanical engineering science to the analysis, design, and manufacture of mechanical devices and systems.
- Proficient in a broad array of professional skills, including engineering software tools, oral and written communication, leadership, and teamwork.
- Aware of the importance of, and engage in the process of lifelong learning through self-study, continuing education courses, and graduate-level education.
- Knowledgeable in a broad range of contemporary issues, particularly as they impact the mechanical engineering profession.

Students are able to concentrate on areas of special interest through technical elective courses taken in the senior year. In addition, specialized concentrations are offered in Automotive Engineering, Business Engineering and Technology, and in Pulp and Paper Engineering.

### Curriculum in Mechanical Engineering

FR	F	S		F	S
MATH	1610	1620	Calculus I & II .....	4	4
PHYS		1600	Engineering Physics I .....	**	4
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
CHEM	1030		Fund. of Chemistry I .....	3	**
CHEM	1031		Fund. of Chemistry I Lab .....	1	**
COMP		1200	Introduction to Computing .....	2	**
ENGR	1100		Engineering Orientation .....	0	**
ENGR		1110	Introduction to Engineering .....	**	2
				16	16
SO					
PHYS	1610		Engineering Physics II .....	4	**
MATH	2630		Calculus III .....	4	**
MATH	2650		Linear Differential Equations .....	3	**
MATH		2660	Linear Algebra .....	**	3
ENGR		2010	Thermodynamics I .....	**	3
MATL		2100	Introduction to Materials Science .....	**	3
MECH		2AA0	Mech. Eng. Progress Assessment I .....	**	0
MECH	2110		Statics and Dynamics .....	4	**
MECH		2120	Kinematics & Dynamics of Machines .....	**	4
MECH		2220	Computer-Aided Engineering .....	**	3
				15	16

Samuel Ginn College of Engineering

JR											MATL 5200	Crystallography.....	2	**
INSY			Engineering Economics.....	**	3						MATL 5201	X-Ray Diffraction Lab.....	1	**
ELEC	3810		Fund. Electrical Engineering.....	3	**							Technical Elective.....	**	3
MECH		3AA0	Mech. Eng. Progress Assessment II.....	**	0								16	16
MECH	3020		Thermodynamics II.....	3	**	SR								
MECH	3030		Fluid Mechanics.....	3	**	ENGL		2200	World Literature I.....	**				3
MECH		3040	Heat Transfer.....	**	3	ENGL	2210		World Literature II.....	3	**			
MECH		3050	Measurement and Instrumentation.....	**	3	MATL	4500		Materials Properties & Selection.....	4	**			
MECH	3130		Mechanics of Materials.....	4	**	MATL	4980		Senior Design Project.....	**	3			
MECH		3140	System Dynamics and Controls.....	**	3	MATL	5100		Thermodynamics of Materials Syst.....	3	**			
MECH	3200		Concepts in Design and Manufacturing.....	2	**	MATL	5300		Ph. Transformations in Mtl. Process.....	**	3			
MECH	3210		Design and Manufacturing Laboratory.....	1	**	MATL	5400		Physics of Solids.....	3	**			
MECH		3230	Machine Design.....	**	3	MATL	5500		Num. Sim. of Materials Processing.....	**	3			
				16	15				Technical Electives.....	3	3			
SR						UNIV	4AA0		EN1 Undergraduate Graduation.....	**	0			
ENGL	2200	2210	World Literature I & II.....	3	3					16	15			
			Core Social Science Group I & II.....	3	3									
			Core Fine Arts.....	**	3									
PHIL	1040		Business Ethics.....	3	**									
MECH	4240	4250	Comprehensive Design I & II*.....	2	2									
			Technical Elective.....	6	3									
			Free Elective.....	**	3									
UNIV	4AA0		EN1 Undergraduate Graduation.....	**	0									
				17	17									

TOTAL HOURS — 128

TOTAL HOURS — 128

Technical electives: see adviser for approved list of courses.

\* May substitute MECH 4440/4450 for MECH 4240/4250 with departmental approval.

Department of Polymer and Fiber Engineering

Bachelor of Polymer and Fiber Engineering

Polymers and fibers are high performance materials utilized in such diverse fields as plastics, elastomers (rubber), adhesives, surface coatings (paints), films, paper, packaging, insulation, filtration, aerospace, automotive, biomedical, composite, construction, environmental, industrial, marine, nonwoven, recreational, and safety materials.

Materials Engineering

The curriculum in Materials Engineering (MATL) is structured to address problems associated with the design of materials and materials processes to meet specific needs for a variety of industries. Emphasis is on the basic sciences and principles of engineering with applications of these principles to materials behavior. The student must obtain a broad foundation in chemistry, physics and mathematics, which is applied in engineering courses. Within materials engineering courses, students obtain a foundation in the major areas of materials science and to the major classes of engineering materials, which is applied in courses in materials properties and selection, computational methods and in a capstone design course. Students gain in-depth experience in another engineering discipline through coordinated technical elective sequences. Students may design alternative cross-disciplinary sequences, but they must be coordinated and approved by the Materials Engineering Curriculum Committee. The objective of the MATL program is to produce graduates who are engaged in careers through which they apply materials engineering proficiency, effective communication and lifelong learning to provide technical, economic, or other benefits to society.

Polymer and fiber engineering prepares graduates to work in research and development, product development, process engineering, composite engineering, quality engineering, industrial engineering, or technical sales; or to proceed to advanced studies in engineering, science, medicine, law, computer, business, or related fields.

Research and instruction in polymer and fiber engineering includes:

- Polymer synthesis and processing.
- Characterization and evaluation of structure and properties of polymeric materials using advanced techniques and state-of-the-art instrumentation.
- Modeling of structure-property-performance relationships emphasizing correlation of properties with the structure across nano-, micro-, and macro-length scales.
- Design, analysis, engineering, and assembly of polymeric fibrous materials into advanced engineered materials with novel compositions and tailored microstructures.
- Product, mold, and die design.

A solid foundation in mathematics, chemistry, and physics is applied in engineering and major courses during junior and senior years. Engineering design is integrated throughout the curriculum in major courses, laboratories, and a capstone design project which is completed during the senior year.

To accommodate the broad range of polymer and fiber opportunities, the undergraduate program offers two options leading to the bachelor of polymer and fiber engineering. The polymer option emphasizes polymer characterization, processing, and chemistry. The fiber option emphasizes the mechanics of composite materials and other fibrous structures.

Graduates will be actively engaged in one or more of the following:

The practice of engineering:

Evidence of increasing responsibilities in the form of promotions, management or leadership duties, or other professional activities while employed in industrial, governmental, educational or consulting positions

Evidence of recognitions and awards.

Evidence of contributing to their chosen field of practice through the development and dissemination of technical knowledge, presentations, publications, patents, or other means.

Evidence of meeting professional responsibilities in the form of mentoring, professional society activities, peer review, editorial work, or similar activities.

The acquisition of new knowledge and skills:

Evidence of pursuit of an advanced degree.

Evidence of participation in ongoing professional development activities.

Activities which meet their ethical responsibilities for public service:

- Evidence of involvement in community service.
- Evidence of involvement in K-12 education.
- Evidence of providing input to policy makers.

Curriculum in Materials Engineering

FR	F	S		F	S
CHEM	1030		Fund. of Chemistry I.....	3	**
CHEM	1031		Fund. of Chemistry I Lab.....	1	**
MATH	1610	1620	Calculus I & II.....	4	4
ENGL	1100	1120	English Composition I & II.....	3	3
PHYS		1600	Engineering Physics I.....	**	4
			Core History.....	3	3
COMP	1200		Introduction to Computing.....	2	**
ENGR	1100		Engineering Orientation.....	0	**
ENGR		1110	Introduction to Engineering.....	**	2
				16	16
SO					
CHEM	1040		Fund. of Chemistry I & II.....	3	**
CHEM	1041		Fund. of Chemistry I & II & Lab.....	1	**
ECON	2020		Principles of Microeconomics.....	3	**
PHYS		1610	Engineering Physics II.....	**	4
PHIL	1020		Introduction to Ethics.....	3	**
STAT		3010	Statistics for Engineers & Scientists.....	**	3
MATH	2630		Calculus III.....	4	**
MATH		2650	Linear Differential Equations.....	**	3
ENGR	2050		Engr. Mechanics: Statics.....	3	**
ENGR		2070	Mechanics of Materials.....	**	3
MATL		2100	Intro. To Materials Science.....	**	3
				17	16
JR					
MATH	2660		Linear Algebra.....	3	**
			Core Social Science Group I.....	3	**
			Core Fine Arts.....	**	3
ELEC	3810		Fund. Electrical Engineering.....	3	**
ENGR		2200	Thermodynamics, Fluids & Heat Trans.....	**	3
MATL	3100		Engr. Materials: Metals.....	3	**
MATL	3101		Metallography Lab.....	1	**
MATL		3200	Engr. Materials: Polymers.....	**	3
MATL		3201	Polymer & Comp. Materials Lab.....	**	1
MATL		3300	Engr. Materials: Ceramics.....	**	3

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Curriculum in Polymer and Fiber Engineering

(Fiber Option)

FR	F	S		F	S
MATH	1610	1620	Calculus I & II .....	4	4
CHEM	1030	1040	Fund of Chemistry I & II.....	3	3
CHEM	1031	1041	Fund of Chemistry I & II lab.....	1	1
ENGL	1100	1120	English Composition I & II.....	3	3
HIST			Core History I & II.....	3	3
COMP		1200	Introduction to Comp for Engr & Sci.....	**	2
ENGR		1100	Engineering Orientation.....	**	0
ENGR	1110		Introduction to Engineering.....	2	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
			Core Social Science Group I.....	**	3
<b>CHEM</b>		<b>2030</b>	<b>Organic Chemistry Survey.....</b>	<b>**</b>	<b>3</b>
<b>PFEN</b>	<b>2270</b>		<b>Intro to Engineered Fibrous Materials.....</b>	<b>4</b>	<b>**</b>
MATH	2630		Calculus III.....	4	**
MATH		2650	Linear Diff Equations .....	**	3
PHYS	1600	1610	Engineering Physics I & II.....	4	4
STAT	3010		Stats for Engineers & Scientists.....	3	**
ENGR		2050	Statics .....	**	3
				<b>15</b>	<b>16</b>
<b>JR</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
MATH	2660		Topics in Linear Algebra.....	3	**
ENGR	2070		Mechanics of Materials.....	3	**
ENGR		2200	Introduction Thermo Heat & Fluid.....	**	3
INSY		3600	Engr. Ec. Analysis.....	**	3
			Elective or ROTC.....	3	**
<b>PFEN</b>	<b>3100</b>		<b>Fundamentals of Polymers.....</b>	<b>3</b>	<b>**</b>
<b>PFEN</b>	<b>3570</b>		<b>Engineered Protective Materials.....</b>	<b>3</b>	<b>**</b>
<b>PFEN</b>		<b>3400</b>	<b>Fund of Coloration and Finishing.....</b>	<b>**</b>	<b>4</b>
<b>PFEN</b>		<b>3500</b>	<b>Str and Prop of Polymers and Fibers .....</b>	<b>**</b>	<b>3</b>
				<b>18</b>	<b>16</b>
<b>SR</b>					
			Core Fine Arts .....	3	**
			Core Philosophy.....	**	3
			Core Social Science Group II.....	**	3
ELEC	3810		Fund of Electrical Engineering.....	3	**
<b>PFEN</b>	<b>4300</b>		<b>Engr Fibrous Structure .....</b>	<b>4</b>	<b>**</b>
<b>PFEN</b>	<b>4400</b>		<b>Mech Flexible Structure.....</b>	<b>3</b>	<b>**</b>
<b>PFEN</b>		<b>4500</b>	<b>Fiber Reinf. Material.....</b>	<b>**</b>	<b>3</b>
<b>PFEN</b>	<b>4910</b>	<b>4920</b>	<b>Poly &amp; Fiber Engr Design I &amp; II.....</b>	<b>3</b>	<b>3</b>
			Technical Elective or ROTC.....	**	3
UNIV		4AA0	EN1 Undergraduate Graduation.....	**	0
				<b>16</b>	<b>15</b>

TOTAL HOURS - 128

Technical Elective - see adviser for approved course listing..

Curriculum in Polymer and Fiber Engineering

(Polymer Option)

FR	F	S		F	S
MATH	1610	1620	Calculus I & II .....	4	4
CHEM	1030	1040	Fund of Chemistry I & II.....	3	3
CHEM	1031	1041	Fund of Chemistry I & II lab.....	1	1
ENGL	1100	1120	English Composition I & II.....	3	3
HIST			Core History I & II.....	3	3
COMP		1200	Introduction to Comp for Engr & Sci.....	**	2
ENGR		1100	Engineering Orientation.....	**	0
ENGR	1110		Introduction to Engineering.....	2	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
			Core Social Science Group I.....	**	3
<b>PFEN</b>	<b>2270</b>		<b>Intro to Engineered Fibrous Materials.....</b>	<b>4</b>	<b>**</b>
<b>CHEM</b>	<b>2070</b>	<b>2080</b>	<b>Organic Chemistry I &amp; II.....</b>	<b>3</b>	<b>3</b>
<b>CHEM</b>	<b>2071</b>		<b>Organic Chemistry I Lab.....</b>	<b>1</b>	<b>**</b>
MATH	2630		Calculus III.....	4	**
MATH		2650	Linear Diff Equations .....	**	3
PHYS	1600	1610	Engineering Physics I & II.....	4	4
ENGR		2050	Statics .....	**	3
				<b>16</b>	<b>16</b>
<b>JR</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group II.....	**	3
MATH	2660		Topics in Linear Algebra.....	3	**
STAT	3010		Stats for Engineers & Scientists.....	3	**
ENGR	2070		Mechanics of Materials.....	3	**
ENGR		2200	Introduction Thermo Heat & Fluid.....	**	3
INSY		3600	Engr. Ec. Analysis.....	**	3
			Elective or ROTC.....	3	**
<b>PFEN</b>	<b>3100</b>		<b>Fundamentals of Polymers.....</b>	<b>3</b>	<b>**</b>
<b>PFEN</b>		<b>3500</b>	<b>Structure and Prop of Polymers and Fibers .....</b>	<b>**</b>	<b>3</b>
				<b>18</b>	<b>15</b>
<b>SR</b>					
			Core Fine Arts .....	3	**
			Core Philosophy.....	**	3
ELEC	3810		Fund of Electrical Engineering.....	3	**
<b>PFEN</b>	<b>4100</b>		<b>Polymer Characterization.....</b>	<b>4</b>	<b>**</b>
<b>PFEN</b>	<b>4200</b>		<b>Poly from Renewable Resources.....</b>	<b>2</b>	<b>**</b>
<b>PFEN</b>		<b>4500</b>	<b>Fiber Reinf. Material.....</b>	<b>**</b>	<b>3</b>
<b>PFEN</b>		<b>5200</b>	<b>Polymer Processing .....</b>	<b>**</b>	<b>4</b>
<b>PFEN</b>	<b>4910</b>	<b>4920</b>	<b>Poly &amp; Fiber Engr Design I &amp; II.....</b>	<b>3</b>	<b>3</b>
			Technical Elective or ROTC.....	**	3
UNIV		4AA0	EN1 Undergraduate Graduation.....	**	0
				<b>15</b>	<b>16</b>

TOTAL HOURS - 128

Technical Elective - see adviser for approved course listing.



# School of Forestry and Wildlife Sciences

JAMES P. SHEPARD, *Dean*

GREG SOMERS, *Associate Dean of Education*

GRAEME LOCKABY, *Associate Dean of Research*

THE SCHOOL OF FORESTRY AND WILDLIFE SCIENCES offers educational programs that prepare graduates for employment in a wide variety of forestry, wildlife, natural resources, and environmental management positions. Forests and their associated resources play a unique and increasingly important role in contemporary society through enhancement of both economic development and environmental quality. The school's programs emphasize understanding of interrelationships among the functions and values of renewable natural resources. This understanding is essential to their effective management and, ultimately, to the meeting of societal needs.

In keeping with the university's land-grant mission, the school's goals are to pursue excellence in education, research and extension/outreach/public service activities focused on the forests, wildlife and associated resources of Alabama and the southeastern United States. With respect to undergraduate education, this involves the preparation and graduation of individuals who have both the necessary skills for initial employment and the breadth and depth of educational background to support professional growth and continuing career advancement.

## Prefix

Course prefixes for courses in the School of Forestry and Wildlife Sciences (SFWS) are FORY (forestry), FOEN (forestry engineering), FOPR (forest products), WILD (Wildlife) and FOWS (forestry and wildlife common courses).

## Curricula

The School of Forestry and Wildlife Sciences offers undergraduate curricula leading to bachelor of science (BS) degrees in forestry, wildlife sciences, and in wildlife sciences pre-veterinary medicine. A forest engineering option is available under the bachelor of biosystems engineering (BSEN) degree program. It is offered in conjunction with the Samuel Ginn College of Engineering. Note: Qualified forestry students are encouraged to consider participation in the Scholars Program in Forestry (see below). Forestry and wildlife students with exceptional academic qualifications should also consider enrollment in the University's Honors College (see Honors College). The University Honors College under Special Academic Opportunities in the Academic Policies section of the Bulletin.

The bachelor's programs in forestry and the forest engineering option in biosystems engineering (the latter with addition of the forest resources minor) are accredited by the Society of American Foresters (SAF). SAF is the accrediting body recognized by the Council on Higher Education Accreditation as the accrediting agency for forestry education in the United States. Graduation from such SAF-accredited programs is required of all applicants for Registered Forester status in Alabama and several other states. The biosystems engineering program with the forest engineering option is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Completion of the wildlife sciences degree program qualifies the graduates for certification as associate wildlife biologists by The Wildlife Society. Completion of the wildlife pre-vet concentration prepares students for veterinary medicine study.

## Web Site

Students are encouraged to visit the school's Web site (<http://www.sfws.auburn.edu>) and, in particular, its Student Services Office link (<http://www.sfws.auburn.edu/sso/index.php>). These sites provide information on the school's programs and faculty, as well as updates on courses, scheduling, etc.

## Admission

### General Requirements

Freshman eligibility is determined by the Enrollment Services (334) 844-6425. However, since the requirements for forestry and wildlife education necessitate high school preparatory work of high intellectual quality and

considerable breadth, the following program is recommended: English (4 units), mathematics (including algebra, geometry, trigonometry and analytic geometry) (4 units), chemistry (1 unit), biology (1 unit), physics (1 unit), history, literature or social science (2 or 3 units), and foreign languages (1 unit). Freshmen in Forestry are admitted to the Pre-Forestry (PFOR) curriculum. Wildlife Ecology and Management students are admitted directly into the Wildlife Ecology and Management curricula (WLDE).

Transfers from other institutions must apply through the Enrollment Services (334) 844-6425. The exact placement of transfer students can be determined only upon review of their transcripts by the School of Forestry and Wildlife Sciences.

Credit toward a degree in the School of Forestry and Wildlife Sciences will not be allowed for mathematics, chemistry or physics courses at a lower level than those specified in the curriculum for the degree sought. Students who are not prepared to take the courses prescribed should take lower level remedial courses without degree credit.

Transfer credit for forestry and wildlife courses not considered equivalent to those required in the chosen curriculum may be substituted for elective credit. However, duplication of credit will not be allowed. Equivalency of forestry and wildlife courses will be determined by the Dean's Office. Students also may obtain credit for FORY and WILD courses on the basis of validating examinations. Arrangements for validating examinations must be made with the Dean's Office.

## Forestry Requirements

The Professional Curriculum in Forestry (FORB) begins with the courses in the School of Forestry and Wildlife Sciences Summer Field Practicum (see below). Students are admitted to this curriculum once a year during spring semester. To be considered for admission, a student must have completed, or be enrolled in all required courses in mathematics, statistics, biology, microeconomics, English, and chemistry, plus an additional nine credit hours from any other courses in the Pre-Forestry curriculum (PFOR) (see below).

To remain enrolled in the professional Forestry curriculum, students must maintain minimum GPA standards established by Auburn University. In addition to these standards, all required forestry courses (FORB, FOEN, FOPR, and FOWS) listed in the junior and senior years must be completed with a grade of C or better. Grades lower than a C will not satisfy prerequisite requirements of successive listed courses and the course must be re-taken for credit toward the degree. Students also must complete designated courses in the major (see bold type in curricula models below) with at least a 2.0 cumulative GPA.

## Forest Engineering Option Requirements

Students are admitted to the professional Biosystems Engineering with Forest Engineering Option curriculum (FOEN) upon successful completion of the Pre-Forest Engineering (PFOE) program in the Samuel Ginn College of Engineering. (See additional detail on Forest Engineering Option below.) Students pursuing the Forest Engineering Option must meet School of Forestry and Wildlife Sciences requirements for admission to the Forestry Summer Field Practicum.

## Wildlife Requirements

Admission requirements for the Wildlife Ecology and Management curricula (WLDE) are the same as for Pre-Forestry (above).

Student in the WILD curriculum (see below) must attend WILD 4910 Wildlife Summer Practicum, which is scheduled for the summer term preceding the senior year and is held at the Solon Dixon Forestry Education Center near Andalusia, Alabama in the south-central section of the state.

To remain enrolled in Wildlife Ecology and Management or the Wildlife Science, Pre-Veterinary Medicine Concentration curricula, students must maintain minimum GPA standards established by Auburn University. In addition to these standards, all required wildlife courses in Wildlife Ecology and Management (WILD and FOWS) listed in the sophomore, junior and senior years and all required wildlife courses in Wildlife Science,

Pre-Veterinary Medicine Concentration (WILD) must be completed with a grade of C or better. Grades lower than a C will not satisfy prerequisite requirements of successive listed courses and the course must be re-taken for credit toward the degree. Students also must complete designated courses in the major (see bold type in curricula models below) with at least a 2.0 cumulative GPA.

Students in the FORY and BSEN Forest Engineering Option curricula (see below) must attend the Forestry Practicum, which is scheduled for the summer term preceding the junior year and is held at the Solon Dixon Forestry Education Center near Andalusia, Alabama.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

**Minors**

**Forest Resources Minor**

This minor is available only to students in the forest emphasis of the forest engineering option of the biosystems engineering degree in Samuel Ginn College of Engineering. Completion of the minor is required for Registered Forester eligibility in the state of Alabama.

Courses required		Cr. Hr.
FOR Y	4190	Forest Measurements II.....3
FOR Y	4230	Forest Ecology.....3
FOR Y	5400	Forest Economics.....3
FOR Y	5410	Forest Management and Administration.....3
FOR Y	5420	Forest Policy.....3
WILD	3280	Principles of Wildlife Management.....3 OR
FOR Y	3600	Wildland Recreation Policy.....2
FOR Y	5150	Forest Health.....3 OR
FOR Y	4440	Forest Fire Management.....3
20/21 semester hours in the minor		

**Forestry**

The objectives of the forestry curriculum are to provide: 1) the fundamental knowledge regarding the resources that professional foresters typically manage and the multiple uses, sustaining, and conservation of those resources; 2) a general education integrating physical, social and biological sciences to prepare the forester for the role as steward of public and private forest resources; and 3) training and skills needed for initial forestry employment, as well as, for advancement to higher levels of managerial responsibility. The forestry degree is appropriate for students who seek employment in any aspect of forest resource management, from forest industry lands where timber production is typically the primary objective, to private non-industrial properties where multiple use predominates, to public lands where recreation or environmental protection is often paramount. The curriculum emphasizes biological, ecological, environmental, social, economic, and ethical considerations in forest management.

The required courses in the professional forestry curriculum (FORB, see below) are designed to be taken in sequence and as a block. The work is integrated among courses in each semester and between semesters. Students must pay careful attention to the pre-requisites of the junior and senior year courses, which are strictly enforced by the school, to ensure successful completion of the forestry program.

**Curriculum in Pre-Forestry (PFOR)**

FR	F	S		F	S
BIOL	1020		Principles of Biology & Lab (1021).....4	**	**
<b>BIOL</b>		<b>1030</b>	<b>Organismal Biology &amp; Lab (1031).....**</b>	<b>4</b>	<b>4</b>
<b>ENGL</b>	<b>1100</b>	<b>1120</b>	<b>English Composition I &amp; II.....3</b>	<b>3</b>	<b>3</b>
<b>MATH</b>	<b>1610</b>		<b>Calculus I.....**</b>	<b>4</b>	<b>4</b>
FOWS	1010		Intro Natural Resources.....1	**	**
			Core History.....3	**	**
			Core Social Science (Group 1).....3	**	**
				<b>14</b>	<b>14</b>
<b>SO</b>					
<b>ECON</b>		<b>2020</b>	<b>Principles of Microeconomics.....**</b>	<b>3</b>	<b>3</b>
<b>ENGL</b>	<b>2200</b>	<b>2210</b>	<b>World Literature I &amp; II.....3</b>	<b>3</b>	<b>3</b>
<b>CHEM</b>	<b>1010</b>	<b>1020</b>	<b>Survey of Chemistry I &amp; II.....3</b>	<b>3</b>	<b>3</b>
<b>CHEM</b>	<b>1011</b>	<b>1021</b>	<b>Survey of Chemistry Lab I &amp; II.....1</b>	<b>1</b>	<b>1</b>
			Core Philosophy.....3	**	**
AGR N		2040	Basic Soil Science.....**	**	**
COMM		2410	Small Group Communication.....**	**	**
<b>STAT</b>	<b>2510</b>		<b>Statistics for the Biol and Health Sciences.....3</b>	<b>3</b>	<b>**</b>
			ACCT 2810 or PHYS 1000 and Lab (1001).....3-4	**	**
				<b>16/17</b>	<b>17</b>

Courses in bold type above are required for admission to Forestry (FORB) curriculum.

**Curriculum in Professional Forestry (FORB)**

<b>SUMMER</b>					
	<b>FOEN</b>	<b>3000</b>	<b>Forest Operations.....2</b>		
	<b>FOR Y</b>	<b>3020</b>	<b>Forest Biology.....2</b>		
	<b>FOEN</b>	<b>3040</b>	<b>Forest Surveying.....3</b>		
	<b>FOR Y</b>	<b>3050</b>	<b>Field Mensuration.....3</b>		
	<b>FOR Y</b>	<b>3060</b>	<b>Forest Management.....2</b>		
				<b>12</b>	
<b>JR</b>					
			Core Fine Arts.....**		3
<b>FOEN</b>	<b>5700</b>		<b>Harvesting.....**</b>	<b>3</b>	<b>**</b>
<b>FOPR</b>	<b>3390</b>		<b>Introduction Wood Science.....3</b>	<b>**</b>	<b>**</b>
<b>FOR Y</b>	<b>3100</b>		<b>Dendrology.....3</b>	<b>**</b>	<b>**</b>
<b>FOR Y</b>	<b>3180</b>	<b>4190</b>	<b>Forest Measurements I &amp; II.....3</b>	<b>3</b>	<b>3</b>
<b>FOR Y</b>	<b>3200</b>		<b>Forest Tree Physiology.....3</b>	<b>**</b>	<b>**</b>
<b>FOR Y</b>		<b>4230</b>	<b>Forest Ecology.....**</b>	<b>3</b>	<b>3</b>
<b>FOR Y</b>		<b>5400</b>	<b>Forest Economics.....**</b>	<b>3</b>	<b>3</b>
				<b>12</b>	<b>15</b>
<b>SR</b>					
			Emphasis.....4		8
<b>FOR Y</b>	<b>5150</b>		<b>Forest Health.....3</b>	<b>**</b>	<b>**</b>
<b>FOR Y</b>		<b>4980</b>	<b>Senior Capstone Project.....**</b>	<b>4</b>	<b>**</b>
<b>FOR Y</b>	<b>5230</b>		<b>Silviculture.....4</b>	<b>**</b>	<b>**</b>
<b>FOR Y</b>	<b>5410</b>		<b>Forest Management.....3</b>	<b>**</b>	<b>**</b>
<b>FOWS</b>		<b>5270</b>	<b>Natural Resource Policy.....**</b>	<b>3</b>	<b>3</b>
UNIV		<b>4AA0</b>	<b>FW1 Undergraduate Graduation.....**</b>	<b>0</b>	<b>0</b>
				<b>14</b>	<b>15</b>

**TOTAL HOURS - 129-130**

Courses in bold type above are components of the Forestry major. Emphasis - Listed at [www.sfw.s.auburn.edu/sso/forestry.php](http://www.sfw.s.auburn.edu/sso/forestry.php)

**Forest Emphases**

To provide students an opportunity to develop strengths in areas of particular personal and professional interest, the school has developed a series of course groupings called Emphases which, beyond the broad base of Forestry core courses, afford opportunity for specialized study. Current emphases are: Forest Land Management, Forest Operations, Forest Products, Urban Forestry, Business, Forest Biology, Wildlife Management, Spatial Analysis, and Policy. Emphases are selected by students at the close of the Summer Practicum. These choices are taken into account by the student and his/her faculty advisor as the program of study for completion of the professional (FORB) program is developed. Details on courses in each Emphasis (both required and optional, 12 credit hours minimum) are available online ([www.sfw.s.auburn.edu/sso/index.php](http://www.sfw.s.auburn.edu/sso/index.php)).

**Scholars Program in Forestry**

The Scholars Program in Forestry provides qualified students an opportunity to explore areas besides the Emphases listed above in which they are particularly interested and/or to prepare for graduate study. Students with at least 3 semesters remaining in the Forestry curriculum, and with at least a 3.3 GPA overall or 3.0 in courses in the Forestry core curriculum, may apply for admission to the program by petition to the student's academic advisor and the dean. Under the guidance of the faculty advisor, and with dean's approval, the student develops an Emphasis to fit his/her unique interests. The Scholars Emphasis must include FORY 4990 in addition to a minimum of 12 semester hour credits in courses at the 3000-level or above.

**Forest Engineering Option**

The Department of Biosystems Engineering in conjunction with the Samuel Ginn College of Engineering and the School of Forestry and Wildlife Sciences offers an accredited degree in biosystems engineering with a forest engineering option. Graduates are qualified to pursue Professional Engineering (PE) credentials. To receive a Society of American Foresters accredited degree and be eligible to become a registered forester in the state of Alabama, students must complete the forest emphasis and forest resources minor.

This program is committed to preparing students for productive professional careers in the forest products industry and related natural resource and environmental systems sectors. Specific educational objectives of the program are to produce graduates with: the skills necessary to solve engineering problems associated with the environment and natural resources, and the production, processing, storage, manufacture, utilization, and recycling of biological products; 2) a fundamental understanding of engineering and biological sciences and the ability to combine knowledge from both domains to develop solutions

School of Forestry and Wildlife Sciences

to problems; 3) the ability to analyze critically and conduct scientific experimentation and engineering analysis that leads to development of environmentally and economically feasible design solutions that can be practically implemented; and 4) the ability to: understand and expand the role of engineering in society; communicate, work, and provide leadership in multidisciplinary environments; and continue developing professionally and ethically throughout their career.

The curriculum is coordinated by the Samuel Ginn College of Engineering and the School of Forestry and Wildlife Sciences. Students register in the Samuel Ginn College of Engineering and are assigned academic advisers in Biosystems Engineering and in Forestry. Beginning students should apply to the Samuel Ginn College of Engineering and complete the Pre-Forestry Engineering, program. (See the Samuel Ginn College of Engineering section for the curriculum model, and detailed admission and degree requirements.)

Wildlife Ecology and Management

The Wildlife Ecology and Management (WLDE) degree program provides a broad biological education that is specifically designed to meet the needs of students interested in careers involving wildlife ecology, management, and conservation. Graduates are employed with state or federal wildlife agencies, environmental consulting firms, private conservation organizations, and private land management companies. Because many jobs require a master's degree, the program is designed to prepare students for graduate studies in wildlife ecology and management.

Curriculum in Wildlife Ecology and Management (WLDE)

FR	F	S	F	S
BIOL	1020		Principles of Biology & Lab (1021)	4 **
BIOL		1030	Organismal Biology & Lab (1031)	** 4
			Core History	3 3
			Core Fine Arts	** 3
ENGL	1100	1120	English Composition I & II	3 3
MATH	1610		Calculus I	** 4
			Core Social Science Group I	** 3
<b>FOWS</b>	<b>1010</b>		<b>Introduction to Renewable Natural Resources</b>	<b>1 **</b>
				<b>15 16</b>
<b>SO</b>				
			Physical Science Elective	4 **
CHEM	1010	1020	Survey of Chemistry 1 & 11	3 3
CHEM	1011	1021	Survey of Chemistry Lab I & II	1 1
BIOL		3030	Evolution & Systematics	** 3
BIOL		3060	Ecology	** 4
			<b>Core Philosophy</b>	<b>** 3</b>
STAT	2510		Statistics for the Bio and Health Sciences	3 **
<b>WILD</b>	<b>2050</b>		<b>Wildlife Conserv. History &amp; Law</b>	<b>3 **</b>
				<b>14 14</b>
<b>JR</b>				
			Biology Elective	4 **
WILD	2200	2210	World Literature I & II	3 3
<b>WILD</b>		<b>3750</b>	<b>Analysis for Wildlife Sciences</b>	<b>** 4</b>
		<b>5400</b>	<b>Problem Solving in Wildlife Sciences</b>	<b>** 2</b>
			Natural Resource Elective	** 2
<b>BIOL</b>		<b>5120</b>	<b>Systematic Botany</b>	<b>** 4</b>
<b>WILD</b>	<b>3280</b>		<b>Principles Wildlife Management</b>	<b>** 3</b>
			<b>Taxon-specific Elective</b>	<b>** 4</b>
				<b>14 15</b>
<b>SUMMER PRACTICUM</b>				
<b>WILD</b>	<b>4910</b>		<b>Wildlife Sciences Summer Practicum</b>	<b>8</b>
<b>SR</b>				
ENGL	3040		Technical Writing	3 **
			Communications Elective/ROTC	3 **
			Core Social Science Group II	** 3
<b>FOWS</b>		<b>5270</b>	<b>Natural Resource Policy</b>	<b>** 3</b>
<b>WILD</b>		<b>5140</b>	<b>Plant Ecology</b>	<b>** 4</b>
<b>WILD</b>	<b>5280</b>	<b>5290</b>	<b>Wildlife Ecology and Management I &amp; II</b>	<b>3 3</b>
			<b>Taxon-specific Elective</b>	<b>** 4</b>
			Technical Elective	3 **
			Natural Resource/Biology Elective	** 3
UNIV		4AA0	FW1 Undergraduate Graduation	** 0
				<b>16 16</b>

TOTAL HOURS - 128

Courses in bold type are components of the Wildlife major  
Professional Electives - listed at www.sfw.s.auburn.edu/sso/wildlifesciences.php

Wildlife Sciences, Pre-Veterinary Medicine (WLPV) Concentration

Students may be admitted to the College of Veterinary Medicine (CVM) upon completion of the minimum requirements listed below. If students are admitted to the CVM prior to completion of the full four years, they may obtain a bachelor of science in this concentration after successful

completion of the freshman year in the CVM. (Students obtaining the BS in this manner may not be certifiable as Associate Wildlife Biologists.) The minimum requirements for admission to the CVM are incorporated in the first three years in the Wildlife Sciences, Pre-Veterinary Medicine Concentration. All minimum requirements must be completed by the end of the spring semester preceding the date of admission to CVM. (See the College of Veterinary Medicine section for additional information.)

Curriculum in Wildlife Science/Pre-Vet Concentration (WLPV)

FR	F	S	F	S
BIOL	1020		Principles of Biology & Lab (1021)	4 **
BIOL		1030	Organismal Biology & Lab (1031)	** 4
CHEM	1030	1040	Fundamentals Chemistry I & II	3 3
CHEM	1031	1041	Fundamentals Chemistry Lab I & II	1 1
ENGL	1100	1120	English Composition I & II	3 3
MATH	1610		Calculus I	4 **
			Core History	** 3
				<b>15 14</b>
<b>SO</b>				
CHEM	2070	2080	Organic Chemistry I & II	3 3
CHEM	2071	2081	Organic Chemistry Lab I & II	1 1
ENGL	2200	2210	World Literature I & II	3 3
PHYS	1500	1510	General Physics I & II	3 3
PHYS	1501	1511	General Physics Lab I & II	1 1
			Core Social Science Group I & II	3 3
		1000	Personal Computer Applications	** 2
<b>WILD</b>	<b>2050</b>		<b>Wildlife Conservation History &amp; Law</b>	<b>3 **</b>
				<b>17 16</b>
<b>JR</b>				
			Core Philosophy	** 3
			Core History	** 3
			Core Fine Arts	3 **
BCHE	3200		Prin. Biochemistry	3 **
COMM	1000		Public Speaking	3 **
BIOL	3200		Gen Microbiology	** 4
BIOL	3000		Genetics	4 **
BIOL		3030	Evolution & Systematic	** 3
<b>BIOL</b>		<b>3060</b>	<b>Principles of Ecology</b>	<b>** 4</b>
<b>WILD</b>	<b>3280</b>		<b>Principles Wildlife Management</b>	<b>3 **</b>
<b>WILD</b>	<b>3281</b>		<b>Principles Wildlife Management Lab</b>	<b>1 **</b>
				<b>17 17</b>
<b>SR</b>				
STAT	2510		Statistics	3 **
BIOL	4020		Vertebrate Biodiversity	4 **
<b>BIOL</b>		<b>5120</b>	<b>Systematic Botany</b>	<b>** 4</b>
<b>WILD</b>	<b>5280</b>	<b>5290</b>	<b>Wildlife Ecology &amp; Mngt I &amp; II</b>	<b>3 3</b>
<b>WILD</b>	<b>5281</b>	<b>5291</b>	<b>Wildlife Ecology &amp; Mngt Lab I &amp; II</b>	<b>1 1</b>
			<b>Natural Resource/Biology Elective</b>	<b>** 4</b>
			Elective	4 **
UNIV		4AA0	FW1 Undergraduate Graduation	** 0
				<b>15 12</b>

TOTAL HOURS - 123

Courses in bold type are components of the Wildlife/Pre-Vet major  
Professional Electives - listed at www.sfw.s.auburn.edu/sso/WildlifePreVet.php

Degrees in Both Forestry and Wildlife Sciences

Curricula leading to degrees in both forestry and wildlife sciences are available for students interested in obtaining both BS degrees. In combination, the two degrees meet the requirements for Registered Forester eligibility in Alabama and Associate Wildlife Biologist certification requirements for The Wildlife Society. Completion of both degrees requires an additional year of coursework (168 total semester hours). Students need to work closely with their academic advisor beginning in the sophomore year in order to successfully complete all requirements for the degrees. For more details about the two tracks visit the school's Web site (www.sfw.s.auburn.edu/sso/index.php).

If you would like to speak to someone about the programs in the school of Forestry and Wildlife Sciences, please call the Director of Student Services at (334) 844-1050 or email at dfd0003@auburn.edu.

ROTC

In all curricula within the School of Forestry and Wildlife Sciences, electives may include six hours Basic ROTC or Advanced ROTC. In curricula which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses outside of the major and not in the university core to be selected with the approval of the School advisor. Common courses selected are COMM 1000, COMM 2410, Natural Resource Electives, and emphasis hours.

# College of Human Sciences

JUNE M. HENTON, Dean  
 ARTHUR W. AVERY, Associate Dean  
 SUSAN S. HUBBARD, Associate Dean

Human Sciences is a professional program central to the landgrant mission that draws from the natural and social sciences, the arts and humanities. It integrates and interrelates knowledge from these disciplines to advance the well-being of individuals, families, and consumers. The course of study provides a broad liberal education, specialized career preparation, as well as a background for individual and family living. Areas of specialization focus on aspects of environment, health, consumer products and services, and human development. Human Sciences offers men and women professional and pre-professional preparation careers in education, business, industry, social agencies, and government.

The College of Human Sciences includes the departments of Consumer Affairs; Human Development and Family Studies; and Nutrition, Dietetics, and Hospitality Management. Programs of study leading to the bachelor of science degree can be planned within five curricula in the College of Human Sciences. These curricula are designed with flexibility to meet the needs of students with a variety of academic interests and goals. Program-specific accreditations/ approvals/endorsements/certifications have been attained for several programs.

**Transfer Requirements.** To transfer into any undergraduate major in the College of Human Sciences, a student must have an institutional 2.0 GPA.

The Interior Design (INDS) program in the college maintains the right to limit freshman and transfer enrollment. On-and off-campus transfer students must file a separate application and meet criteria listed in the application with the Department of Consumer Affairs. Please contact the department for application guidelines.

**Graduation Requirements.** To earn the bachelor's degree from the College of Human Sciences, students must complete the hours and subject matter requirements of their curricula and must have a minimum grade-point average of 2.0 on all course work attempted at Auburn University, and in addition, a 2.0 cumulative grade-point average on all work attempted in the major.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Minors

### Human Development and Family Studies Minor

18 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required		Cr. Hr.
HDFS 2000	Marriage & Family in Global Context .....	3
HDFS 2010	Lifespan Human Develop in Family .....	3
Elective Courses: see advisor for approved course listing.		

### Hunger Studies Minor

18 semester hours in minor (minimum 12 hours at 3000-level or higher)

Courses required		Cr. Hr.
HUSC 2000	Hunger: Causes, Consequences, and Responses .....	3
HUSC 4000	Hunger Studies Capstone .....	3
Elective Courses: see advisor for approved course listing.		

### International Minor In Human Sciences

16-19 semester hours in minor (minimum 9 hours at 3000-level or above)

Courses required: See advisor for approved course listing.  
 Elective Courses: See advisor for approved course listing.

**Options in Cooperative Extension.** Students enrolled in any of the majors in the college may prepare for a career in the Cooperative Extension System through election of certain courses as electives. Majors may fulfill the requirements of the Alabama Cooperative Extension System through scheduling of the following courses: NTRI 2000, NTRI 2050; CAHS 2750, CAHS 2400, or CAHS 3600; HDFS 4670.

**Graduate Work.** The college offers work leading to the master of science degree and PhD degree in consumer affairs; human development and family studies; and nutrition, dietetics, and hospitality management.

## Department of Consumer Affairs

The Department of Consumer Affairs focuses on consumers' interactions with their near physical environment. Two majors are offered: 1) Apparel Merchandising, Design and Production Management and 2) Interior Design. These curricula focus on principles of design, product development, management, marketing science and technology, and consumer behavior. Majors in these curricula may lead to careers in business, industry, and government which apply knowledge to developing, evaluating and merchandising consumer products, interpreting consumers' wants and needs, informing consumers and designing environmental spaces. A senior-level internship is required in both curricula. A minor in business and an international minor in human sciences are available. Other minors may also be selected.

### Apparel Merchandising, Design and Production Management (AMDP)

Apparel Merchandising, Design and Production Management is a professional curriculum with two options: 1) Apparel Merchandising and 2) Product Design and Production Management. Diversity within the major allows students to select such varied fields as apparel design, apparel production management, retail sales and/or management, apparel merchandising, retail buying, fashion journalism, and consumer-producer relations.

**Academic Standards and Policies:** Students in both AMDP options must earn a grade of a C or higher in all prerequisite courses in the major, and have a cumulative GPA of 2.0, before being allowed to proceed to the next course in the sequence. Major courses include the Human Sciences college core courses and all required Consumer Affairs courses which are indicated in bold print in the models. Students must earn a grade of C or higher on all required courses in the major to complete graduation requirements.

#### Curriculum in Apparel Merchandising/Option

FR	F	S		F	S
MATH	1150		Pre-Calculus Algebra & Trigonometry .....	4	**
HIST			Core History .....	3	3
			Core Social Science Group I .....	3	**
ENGL	1100	1120	English Composition I & II .....	3	3
CAHS	1600		<b>Textile Industrial Complex</b> .....	3	**
			Professional Electives .....	**	4
CAHS		2000	<b>Global Consumer Culture</b> .....	**	3
HDFS		2000	<b>Marriage &amp; Family in Global Context</b> .....	**	3
				16	16
SO			Survey of Chemistry I & II .....	3	3
CHEM	1010	1020	Survey of Chemistry I & II Lab .....	1	1
CHEM	1011	1021	Principles of Microeconomics .....	3	**
ECON	2020		Literature I & II .....	3	3
ENGL			Fundamentals of Accounting .....	**	3
ACCT		2810	<b>Nutrition &amp; Health</b> .....	3	**
NTRI	2000		<b>Aesthetics for Apparel Design OR</b> .....	**	**
CAHS	2740		<b>Visual Merchandising</b> .....	4	**
CAHS	2760		<b>Apparel Production Management I</b> .....	**	4
CAHS		2800	<b>Consumer Decision Making for App. &amp; Fash. Prod.</b> ..	**	3
CAHS		3800		17	17
JR			Core Fine Arts .....	**	3
			Core Philosophy .....	**	3
MNGT	3810		Management Foundations .....	3	**
MKTG	3810		Foundations of Business Marketing .....	3	**
CAHS	3600		<b>Textiles</b> .....	4	**
CAHS	3850		<b>Merchandise Planning &amp; Control</b> .....	3	**
CAHS		5450	<b>History of Costume</b> .....	**	3
CAHS		5600	<b>Global Sourcing in Textiles &amp; Apparel</b> .....	**	3
CAHS		5760	<b>Fashion Analysis &amp; Forecasting</b> .....	3	**
			Professional Electives .....	**	5
				16	17
SR			Statistics for Social & Behavioral Sciences .....	**	4
STAT		2010	Professional Electives .....	**	4
CAHS		5850	<b>Apparel Merchandising &amp; Retail Mngt</b> .....	**	8
CAHS	4920		<b>Internship</b> .....	8	**
UNIV		4AA0	HSI Undergraduate Graduation .....	**	0
				8	16

**TOTAL HOURS - 123**

Select professional electives from the approved professional elective list.  
 Prior to beginning the third semester, students must pass the placement test on computer skills or take COMP 1000.  
 Students may select CHS@ AU in Italy to partially fulfill all seventeen (17) hours of professional electives and earn an International Minor in Human Sciences (IMHS).

Curriculum in Product Design and Production Management/Option				
FR	F	S	F	S
ENGL	1100	1120	English Composition I & II	3 3
HIST			Core History	3 3
MATH	1150		Pre-Calculus Algebra & Trigonometry	4 **
			Core Social Science Group I	3 **
CAHS		2000	Global Consumer Culture	** 3
HDFS		2000	Marriage & Family in Global Context	** 3
CAHS	1600		Textile Industrial Complex	3 **
			Professional Electives	** 4
				16 16
<b>SO</b>				
ENGL			Literature I & II	3 3
CHEM	1010	1020	Survey of Chemistry I & II	3 3
CHEM	1011	1021	Survey of Chemistry I & II lab	1 1
ECON	2020		Principles of Microeconomics	3 **
CAHS	2740		Aesthetics for Apparel Design	4 **
CAHS		2750	Prod Develop: Technical Design	** 4
CAHS		2800	Apparel Production Management	** 4
				14 15
<b>JR</b>				
			Core Fine Arts	3 **
CAHS	3600		Textiles	4 **
CAHS	3750		Prod Develop: Apparel Design	** 4
CAHS		3850	Merchand Planning & Control	** 3
CAHS	5760		Fashion Analysis & Forecasting	3 **
CAHS		5450	History of Costume	** 3
CAHS		5600	Global Sourcing for Textiles & Apparel	** 3
NTRI	2000		Nutrition & Health	3 **
				13 13
<b>SUMMER</b>				
CAHS		4920	Internship	** 8
<b>SR</b>				
CAHS	4500		Portfolio Development for Apparel Designers	3 **
			Core Philosophy	3 **
CAHS		5750	Apparel Line Development	** 4
CAHS	4800		Apparel Engineering	4 **
UNIV		4AA0	HS1 Undergraduate Graduation	** 0
			Professional Electives	5 9
				15 13

**TOTAL HOURS - 123**

Select professional electives from approved professional elective list.  
 \* Production Management requires ACCT 2810 and STAT 2010.  
 Prior to beginning the third semester, students must pass the placement test on computer skills or take COMP 1000.  
 Students may select CHS@AU in Italy to partially fulfill all eighteen (18) hours of professional electives and earn an International Minor in Human Sciences (IMHS).

**Interior Design (INDS)**

Interior Design is a four-year bachelor of science program accredited by the Council for Interior Design Accreditation (CIDA). The curriculum focuses on the design of the near environment, the aesthetic and functional aspects of space planning, furnishings and materials, mechanical equipment and the integration of these aspects of the built environment to fit the needs of the user. A professionally supervised internship is required. Student work from courses in the major may be retained by the program for accreditation and exhibit purposes.

Academic Standards and Policies: The program maintains the right to limit freshmen and transfer enrollment. On and off campus transfer applicants must meet criteria listed in the "Academic Policies" section of the *Auburn University Bulletin*. Please contact the department for application guidelines. Students admitted MUST begin the program the subsequent fall term. Course work in the major must be taken in sequence; transfer students should anticipate that additional semesters of study may be required to complete the program. Entering freshmen admitted to Auburn who are admitted to the INDS major must begin their INDS program of study in the fall term after they are admitted, or they will be held to the same admission requirements as transfer students.

Students in INDS must earn a grade of a C or higher in all prerequisite courses in the major before being allowed to proceed to the next course in the sequence. Major courses include the Human Sciences College core courses and all required Consumer Affairs courses which are indicated in bold print in the model.

**Curriculum in Interior Design**

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II	3 3
MATH	1150		Pre-Calculus Algebra & Trigonometry	4 **
			Core Fine Arts	** 3
			Core SS. Group 1	3 **
CAHS		1000	Studio I: Introduction to INDS	4 **
CAHS		1100	Studio II: Tech Design of INDS	** 4
CAHS		2000	Global Consumer Culture	** 3
				14 13
<b>SO</b>				
HIST			Core History	3 3
			Core Science (CHEM or PHYS)	4 4
HDFS		2000	Marriage & Family in Global Context	3 **
CAHS		2100	Studio III: Visual Pres of INDS I	4 **
CAHS		2200	Studio IV: CAD for INDS	** 4
CAHS		2300	History of the Decorative Arts	3 **
CAHS		2400	Interior Materials & Components	** 3
CAHS		2500	Studio V: Visual Presentation II	** 4
				17 18
<b>JR</b>				
ENGL			Literature I	** 3
ECON	2020		Principles of Microeconomics	3 **
ACCT		2810	Fundamentals of Accounting	** 3
NTRI		2000	Nutrition & Health	3 **
CAHS		3100	Studio VI: Lighting Design/Env Sys	4 **
CAHS		3200	Studio VII: Residential Interiors	4 **
CAHS		3400	Studio VIII: Non-Residential Interiors	** 4
CAHS		3500	Business Practices in INDS	** 3
				14 13
<b>SR</b>				
ENGL			Literature II	3 **
CAHS		4300	Studio X: Interior Design-Commercial	4 **
CAHS		4400	Studio XI: Interior Design-Institutional	** 4
MKTG		3810	Foundations of Business Marketing ++	3 **
			Philosophy Core	** 3
			Professional Electives	4 6
				14 13
<b>SUMMER</b>				
CAHS		4920	Internship	** 8
UNIV		4AA0	HS1 Undergraduate Graduation	0

**TOTAL HOURS - 124**

Prior to beginning third semester, students must pass the placement test on computer skills or take COMP 1000.  
 Select professional electives from approved professional elective list.  
 ++ Business minor requirement may be substituted.  
 Students may select CHS@AU in Italy to fulfill all ten (10) hours of professional electives and earn an International Minor in Human Sciences (IMHS).

**Department of Human Development and Family Studies**

The Human Development and Family Studies (HDFS) undergraduate curriculum is designed to prepare students for a variety of careers that contribute to the success of individuals and families across the life span. Career directions include, but are not limited to, teaching and administering programs to young children in pre-school or hospital settings, counseling teens in residential treatment facilities or church programs, providing supportive services to adult and elderly populations, implementing family education in the broader community, and advocating for family policy within government settings. Students also gain excellent preparation for graduate school. Majors select one of seven concentration areas; Infancy/Preschool, Child Life, Middle Childhood/Adolescence, Adult Programs, Gerontology, Legislative/Public Policy, or Family Programming/Research. The capstone course for students is the undergraduate internship where classroom learning and real life come together to enhance professional competence. The HDFS curriculum draws upon the knowledge of many academic disciplines to promote understanding of current issues for individuals and families in modern society, and it is approved by the National Council on Family Relations to offer the Provisional Certified Family Life Education (CFLE) designation. The Department also operates the Auburn University Early Learning Center as well as the Harris Early Learning Center in Birmingham, Alabama. Both programs are accredited by the National Academy for Early Childhood Program Accreditation.

**Fingerprint/Criminal Background Checks are required of all HDFS majors. Students who do not obtain the required background check clearing letters will not be allowed to enroll in courses.**

Dual Objective Program: The Dual Objective Program with Human Development and Family Studies and the Early Childhood Education program in the College of Education is open to students in Human Development and Family Studies. Students completing this dual objective program earn the bachelor of science in the declared major from

College of Human Sciences

the College of Human Sciences and are eligible for an Alabama Class B teachers certification.

Academic Standards and Policies: Students must earn a grade of C or better on all 3000 and 4000 level required HDFS major core to complete graduation requirements.

Curriculum in Human Development and Family Studies

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
MATH		1150	Pre-Calculus Algebra & Trigonometry.....	**	4
			Core History.....	3	
			Core Social Science.....	**	3
CAHS	2000		Global Consumer Culture.....	3	**
HDFS	2000		Marriage & Family in Global Context.....	3	**
HDFS		2010	Lifespan Human Development.....	**	3
			Free Electives <sup>2</sup> .....	**	3
				15	16
SO					
BIOL	1000	1010	Biology and Labs (1001, 1011).....	4	4
ENGL			Literature I & II.....	3	3
PHIL			Core Philosophy <sup>1</sup> .....	**	3
			Core Fine Arts.....	3	**
			Core Social Science II.....	3	**
NTRI	2000		Nutrition & Health.....	3	**
HDFS		2030	Professional Develop & Ethics.....	**	3
			Professional Electives <sup>2</sup> .....	**	3
				16	16
JR					
STAT		2010	Statistics for Social & Behavioral Sciences.....	**	4
			Professional Electives <sup>2</sup> .....	7	8
HDFS			Child Development (3010) OR Adolescent & Adult Development (3030) <sup>2</sup> .....	3	**
HDFS			Family Interaction (3060) OR Family in Cross Cultural Perspective (4680) <sup>2</sup> .....	3	**
HDFS		3080	Development Interpersonal Skills.....	**	3
			Free Electives.....	**	2
				15	15
SR					
			Professional Electives <sup>2</sup> .....	12	**
HDFS			Program Dev & Eval (5200) OR Family/Social Policy (5300) OR Adv Seminar (4950) <sup>2</sup> .....	3	**
HDFS		4920	Internship in HDFS OR Study Abroad <sup>3</sup> .....	**	12
UNIV		4AA0	HS1 Undergraduate Graduation.....	**	0
				15	12

TOTAL HOURS - 120

- 1 Child Life Internship must select PHIL 1030.
  - 2 Course selection based on choice of HDFS concentration.
  - 3 Joseph S. Bruno Auburn Abroad in Italy
- Internship Handbook specifies professional electives for specific internship types. Applications for Internships must be completed 2 semesters in advance.

Department of Nutrition, Dietetics, and Hospitality Management

The Department offers two majors: Hotel and Restaurant Management (HRMT) and Nutrition (NTRI). The HRMT program emphasizes food and lodging services for consumers in the tourism industry. The NTRI major offers two options: Nutrition/Dietetics (NTDI) and Nutrition Science (NSPM).

Hotel and Restaurant Management (HRMT)

The HRMT major prepares students for careers in hotels, resorts, restaurant facilities and other positions in the tourism and hospitality industry and addresses the needs of the premium service segment of this industry. With its focus on instructional research and outreach initiatives, the HRMT program's mission is to educate exceptional leaders for the state of Alabama and global hospitality and tourism industries. We concentrate on service excellence, social and ethical responsibility, and diversity in a practically oriented and intellectually challenging learning environment.

Curriculum in Hotel and Restaurant Management

FR	F	S		F	S
BIOL	1000	1010	Biology and Labs (1001, 1011).....	4	4
ENGL	1100	1120	English Composition I & II.....	3	3
HIST			Core History.....	3	
MATH		1150	Pre-Calculus Algebra & Trigonometry.....	**	4
PSYC	2010		Introduction to Psychology.....	3	**
HRMT	1010		Intro to Hospitality Management.....	2	**
HRMT	2940		Professional Development in Hosp.....	**	1
				15	15

SO					
ECON	2020	2030	Principles of Micro & Macroeconomics.....	3	3
ENGL			Literature I & II.....	3	3
ACCT	2810		Fundamentals of Accounting.....	3	**
ENVI		1020	Fund. of Envir. Science.....	**	2
CAHS	2000		Global Consumer Culture.....	3	**
NTRI	2000		Nutrition and Health.....	3	**
HRMT		2300	Hospitality Law.....	**	3
HRMT		2400	Culinary Science and Prod.....	**	4
HRMT	2500		Lodging Operations.....	**	2
				17	15
JR					
FINC	3810		Foundations of Business Finance.....	3	**
MKTG		3810	Foundations of Business Marketing.....	**	3
MNGT	3810		Management Foundations.....	3	**
FLSP	1010		Elem. Spanish I.....	4	**
STAT		2010	Statistics for Social & Behavioral Sciences.....	**	4
HDFS	2000		Marriage & Family in Global Context.....	3	**
HRMT		3200	Hospitality Financial Management.....	**	3
HRMT		3800	Hospitality Information Technology.....	**	3
HRMT	4200		Hospitality Facilities Management.....	3	**
			HRMT Professional Elective*.....	**	3
				16	16
SR					
			Fine Arts Core.....	**	3
PHIL		1040	Business Ethics.....	**	3
HRMN	3420		Human Resource Management.....	3	**
HRMT	3400		Hospitality Marketing.....	3	**
HRMT	4300		Food and Beverage Management.....	3	**
HRMT	4800		Senior Lecture Series.....	**	1
HRMT	4910		Hospitality Leadership Practicum.....	**	1
HRMT	4500		Strategic Hospitality Management.....	**	3
HRMT	5530		Science of Quality in Hospitality.....	**	3
HRMT	4920		Internship in Hospitality.....	**	4
			HRMT Professional Elective*.....	**	3
			Free Elective.....	**	2
UNIV		4AA0	HS1 Undergraduate Graduation.....	**	0
				13	17

TOTAL HOURS - 124

\* Select professional electives from approved professional elective list.

Nutrition (NTRI)

The field of nutrition is concerned with human physiology and biochemistry and their relationship to human health, diet, and well-being. The NTRI curriculum has two options which permit specialization according to students' specific interests.

The Nutrition Science option prepares students for health professional schools, such as medical, dental, and physical therapy, as well as for graduate study in the nutrition discipline. The Nutrition Science option serves as a pre-med option.

The Nutrition/Dietetics option prepares students for careers in dietetics, nutrition education, and nutrition. The Didactic Program in Dietetics (DPD) is accredited by the Commission on Accreditation for Dietetic Education, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040. Graduates who successfully complete the Nutrition/Dietetics option (DPD) are qualified to apply for a post-baccalaureate dietetic internship which is a requirement prior to taking the national examination to become a Registered Dietitian.

Curriculum in Nutrition/Dietetics/Option

FR	F	S		F	S
CHEM	1030	1040	Fundamentals of Chemistry I & II.....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab.....	1	1
ENGL	1100	1120	English Composition I & II.....	3	3
HIST			Core History.....	3	3
MATH	1150		Pre-Calculus Algebra & Trigonometry.....	4	**
PSYC	2010		Introduction to Psychology.....	3	**
NTRI	2000		Nutrition & Health.....	**	3
BIOL	1020		Principles of Biology and Lab (1021).....	**	4
				17	17
SO					
ECON	2020		Principles of Microeconomics.....	3	**
ENGL			Literature I & II.....	3	3
PHIL	1030		Ethics & the Health Sciences.....	3	**
			Core Fine Arts.....	**	3
BIOL	2500	2510	Human Anatomy & Phy I & II.....	4	4
CHEM		2030	Survey of Organic Chemistry.....	**	3
NTRI	2050		Science of Food.....	4	**
NTRI	2070		Introduction to Nutrition/Dietetics.....	**	1
				17	14

College of Human Sciences

<b>JR</b>					<b>JR</b>				
ACCT	2810	Fundamentals of Accounting .....	**	3	BIOL	4100	Cell Biology .....	3	**
ENGL	3040	Technical Writing .....	**	3	BIOL	4101	Cell Biology Lab .....	2	**
<b>BIOL</b>	<b>3200</b>	<b>General Microbiology.....</b>	<b>**</b>	<b>4</b>	PHYS	1500	General Physics I & II .....	4	4
<b>BCHE</b>	<b>3180</b>	<b>Nutritional Biochemistry.....</b>	<b>**</b>	<b>3</b>	<b>BCHE</b>	<b>3180</b>	<b>Nutritional Biochemistry.....</b>	<b>3</b>	<b>**</b>
<b>CAHS</b>	<b>2000</b>	<b>Global Consumer Culture.....</b>	<b>**</b>	<b>3</b>	<b>BIOL</b>	<b>3200</b>	<b>General Microbiology.....</b>	<b>4</b>	<b>**</b>
<b>HDFS</b>	<b>2000</b>	<b>Marriage &amp; Family in Global Context.....</b>	<b>**</b>	<b>3</b>	<b>CAHS</b>	<b>2000</b>	<b>Global Consumer Culture.....</b>	<b>3</b>	<b>**</b>
<b>NTRI</b>	<b>3040</b>	<b>Food Systems Operations .....</b>	<b>**</b>	<b>2</b>	<b>HDFS</b>	<b>2000</b>	<b>Marriage and Family .....</b>	<b>**</b>	<b>3</b>
<b>NTRI</b>	<b>3041</b>	<b>Food Systems Operations Lab.....</b>	<b>**</b>	<b>2</b>	<b>NTRI</b>	<b>3720</b>	<b>Nutritional Assessment .....</b>	<b>**</b>	<b>2</b>
<b>NTRI</b>	<b>3620</b>	<b>Community Nutrition.....</b>	<b>**</b>	<b>2</b>	<b>NTRI</b>	<b>4820</b>	<b>Macronutrients .....</b>	<b>**</b>	<b>3</b>
<b>NTRI</b>	<b>3720</b>	<b>Nutritional Assessment .....</b>	<b>**</b>	<b>2</b>	<b>NTRI</b>	<b>4830</b>	<b>Vitamins and Minerals.....</b>	<b>**</b>	<b>3</b>
<b>NTRI</b>	<b>4820</b>	<b>Macronutrients .....</b>	<b>**</b>	<b>3</b>					<b>19</b>
<b>NTRI</b>	<b>4830</b>	<b>Vitamins and Minerals.....</b>	<b>**</b>	<b>3</b>					<b>15</b>
				<b>16</b>	<b>SR</b>				
<b>SR</b>				<b>17</b>	PHIL	1030	Ethics & the Health Sciences .....	**	3
COUN	3100	Counseling & Human Services.....	**	3	PSYC	2010	Introduction to Psychology .....	**	3
STAT	2510	Statistics for Biol & Health Sciences.....	**	3	BIOL	4410	Social Science Group II.....	**	3
ADED	4050	Methods of Teaching in Adult Ed .....	**	3	STAT	2510	Vertebrate Development.....	5	**
<b>NTRI</b>	<b>4090</b>	<b>Prof Issues Diet/Nutrition .....</b>	<b>**</b>	<b>1</b>	<b>NTRI</b>	<b>4090</b>	<b>Statistics for Biol &amp; Health Sci .....</b>	<b>3</b>	<b>**</b>
<b>NTRI</b>	<b>4410</b>	<b>Experimental Food Science .....</b>	<b>**</b>	<b>3</b>	<b>NTRI</b>	<b>5020</b>	<b>Prof Issues Diet/Nutrition .....</b>	<b>1</b>	<b>**</b>
<b>NTRI</b>	<b>5020</b>	<b>Medical Nutrition I.....</b>	<b>**</b>	<b>3</b>	<b>NTRI</b>	<b>5020</b>	<b>Medical Nutrition I.....</b>	<b>**</b>	<b>3</b>
<b>NTRI</b>	<b>5030</b>	<b>Medical Nutrition II.....</b>	<b>**</b>	<b>3</b>	<b>NTRI</b>	<b>5820</b>	<b>Medical Nutrition II.....</b>	<b>**</b>	<b>3</b>
<b>NTRI</b>	<b>5560</b>	<b>Nutrition &amp; Food Services Management.....</b>	<b>**</b>	<b>4</b>	UNIV	4AA0	<b>Nutrition in the Life Cycle.....</b>	<b>**</b>	<b>0</b>
<b>NTRI</b>	<b>5820</b>	<b>Nutrition in the Life Cycle .....</b>	<b>**</b>	<b>3</b>			HS1 Undergraduate Graduation .....	**	0
UNIV	4AA0	HS1 Undergraduate Graduation .....	**	0			Elective.....	**	1
				<b>13</b>					<b>15</b>
				<b>13</b>					<b>13</b>

**TOTAL HOURS - 124**

**TOTAL HOURS - 128**

The Commission on Accreditation for Dietetics Education 'American Dietetic Association's academic requirements for Didactic Program in Dietetics will be met by the Nutrition/Dietetics option. Graduates choosing this option must complete an internship after graduation in order to be eligible to take the national exam for registered dietitians. Acceptance into dietetic internships is highly competitive.

For Pre-Physical Therapy, substitute an additional psychology course for CHEM 2080 and 2081.

This option meets the requirements for the health and professional schools such as Medical School, Dental School and Physical Therapy School.

**Curriculum in Nutrition Science/Option**

<b>Curriculum in Nutrition Science/Option</b>				
<b>FR</b>	<b>F</b>	<b>S</b>		<b>F S</b>
CHEM	1030	1040	Fund of Chemistry I & II.....	3 3
CHEM	1031	1041	Fund of Chemistry I & II Lab.....	1 1
ENGL	1100	1120	English Composition I & II.....	3 3
HIST			Core History .....	** 3
MATH	1610		Calculus I.....	4 **
			Core Fine Arts .....	** 3
SCMH	1890		Orientation Prehealth Prof. ....	1 **
<b>BIOL</b>	<b>1020</b>		<b>Principles of Biology and Lab (1021).....</b>	<b>4 **</b>
<b>BIOL</b>		<b>1030</b>	<b>Organismal Biology and Lab (1031).....</b>	<b>** 4</b>
				<b>16 17</b>
<b>SO</b>				
ENGL			Literature I & II .....	3 3
HIST			Core History .....	3 **
BIOL	2500	2510	Human Anatomy & Phy I & II.....	4 4
BIOL		3000	Genetics.....	** 4
CHEM	2070	2080	Organic Chemistry I & II .....	3 3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1 1
<b>NTRI</b>	<b>2000</b>		<b>Nutrition &amp; Health.....</b>	<b>** 3</b>
<b>NTRI</b>		<b>2070</b>	<b>Intro to Nutrition/Dietetics.....</b>	<b>** 1</b>
				<b>17 16</b>

<b>OPTIONAL FIFTH YEAR</b>				
ACCT	2810		Fundamentals of Accounting .....	3 **
ADED	4050		Methods of Teaching in Adult Ed .....	3 **
COUN		3100	Counseling & Human Services.....	** 3
ENGL		3040	Technical Writing .....	** 3
<b>NTRI</b>	<b>2050</b>		<b>Science of Food.....</b>	<b>** 4</b>
<b>NTRI</b>	<b>3040</b>		<b>Food Systems Operations.....</b>	<b>** 2</b>
<b>NTRI</b>	<b>3041</b>		<b>Food Systems Operations Lab.....</b>	<b>** 2</b>
<b>NTRI</b>	<b>3620</b>		<b>Community Nutrition.....</b>	<b>** 2</b>
<b>NTRI</b>	<b>4410</b>		<b>Experimental Food Science .....</b>	<b>** 3</b>
<b>NTRI</b>	<b>5560</b>		<b>Nutrition &amp; Food Services Mngt.....</b>	<b>** 4</b>
<b>UNIV</b>	<b>4AA0</b>		<b>HS1 Undergraduate Graduation.....</b>	<b>** 0</b>
				<b>16 13</b>

Allows fulfillment of American Dietetic Association's academic requirements for Didactic Programs in dietetics. Graduates completing the fifth year are eligible to compete for internships. Internships are required to be eligible to take national exam to become a registered dietitian. Prerequisite for NTRI 3040 (NTRI 2050) must be taken prior to fifth year.

# College of Liberal Arts

ANNE-KATRIN GRAMBERG, *Dean*  
CONSTANCE C. RELIHAN, *Senior Associate Dean*  
PAULA BOBROWSKI, *Associate Dean*

IN THE COLLEGE OF LIBERAL ARTS, a student can specialize in a particular field while also gaining a broad general education. Four academic areas - humanities, fine arts, communications, and behavioral and social sciences - are represented by the college's 13 departments: Art; Communication and Journalism; Communication Disorders; Economics; English; Foreign Languages and Literatures; History; Music; Philosophy; Political Science; Psychology; Sociology, Anthropology, and Social Work; and Theatre.

Besides affording specialization in majors, the curricula of this college lay a strong foundation for further studies in graduate school or professional school. The college also provides courses needed by students of all other instructional divisions of the university.

## Academic Policies

To earn a second baccalaureate or a double major, students must complete a separate body of knowledge appropriate for the degree; the Liberal Arts dean's office determines when this is possible. AU academic policy stipulates the minimum hours necessary in addition to the primary degree or curriculum. Liberal Arts consistently monitors that, at a minimum, there must be 30 additional hours of non-overlapping course work in the major.

## Undergraduate Degrees

Academic majors, programs, and options are offered in more than 30 fields, described below in the Liberal Arts curriculum and in the curricula of the School of Fine Arts. Four-year degrees offered by the college in these fields are the bachelor of arts, bachelor of science and bachelor of fine arts. The College of Liberal Arts requires the equivalent of one year of a foreign language in all degree programs except the bachelor of fine arts.

## Graduate Degrees

Doctor of philosophy degrees are offered in English, history, psychology, and public administration and public policy. Master of arts degrees are offered in English, Spanish, history, political science, sociology and communication. Master of science degrees are offered in communication disorders and psychology. The doctor of audiology degree is offered in Communication Disorders.

The degrees of master of communication disorders, master of hispanic studies, master of public administration and master of technical and professional communication are offered. Degree programs are described in the Graduate School section.

## Education

The College of Education offers an Alternative Master's Certification Program to Liberal Arts students holding a baccalaureate degree in English or foreign language. Upon successful completion of the program, a master's degree in education (MEd) will be awarded and the graduate will be eligible to apply for Alabama Class A certification (master's level certificate).

## The University Honors College

This program offers individual learning opportunities and participation in honors courses to students with extraordinarily high academic aptitude. For more information, refer to the Academic Policies section of this bulletin.

## Cooperative Education Programs

Cooperative Education Programs which give students an opportunity to integrate academic training with work experience are offered in Art, English (technical writing), Health Administration, Political Science, Psychology, Public Administration, Social Work and Sociology. Students alternate each term between college and a work assignment provided through the Director of the Cooperative Education Program.

## Center for the Arts and Humanities

The Caroline Marshall Draughon Center for the Arts and Humanities is the College of Liberal Arts' center for public engagement. Its mission is to strengthen the bonds between the College of Liberal Arts and the public by creating and implementing arts and humanities programs that explore our individual and collective experiences, values, and identities through the past, in the present, and for the future. The center also creates occasions and space for dialogue, intellectual community, and cross-disciplinary scholarship. For more information, go to [www.auburn.edu/cah](http://www.auburn.edu/cah).

## Majors in the Liberal Arts Curriculum

Beginning with the first-year class admitted for Fall 2009, the College of Liberal Arts will require students entering the college with fewer than 12 completed college credit hours to enter the College as either an undeclared student (UNLA) or listed as a pre-major, except Honors College students admitted or students admitted into the departments of Art or Theatre.

After the completion of 12 credit hours, a student may then transfer into a CLA major, provided he or she meets the entrance criteria for the selected major. Many majors require no additional admission requirements, but some CLA majors do have specific admissions requirements. Students should contact the relevant CLA department directly if they have questions about the requirements for admission to a specific major.

All students must declare a major by the end of the semester in which they complete 45 semester hours of credit, including transfer and all other credit. Students transferring into the college with 45 or more semester hours' credit must declare a major upon admission. Before a major is declared, students will follow the requirements for the Liberal Arts Curriculum, and will be identified by the designation "PLAU."

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Minors

### Africana Studies Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

**Courses required** **Cr. Hr.**

AFRI 2000 Intro to Africana Studies .....3  
Elective Courses - See advisor for approved course listing.

### Anthropology Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

**Courses required:** NONE

Elective Courses - See advisor for approved course listing.

### Art History Minor

18 semester hours in minor (minimum 9 hours at 3000-level or above)

**Courses required** **Cr. Hr.**

ARTS 1710 Intro to Art History I .....3  
ARTS 1720 Intro to Art History II .....3  
ARTS 1730 Intro to Art History III .....3

Elective Courses - See advisor for approved course listing.

### Asian Studies Minor

15 semester hours in minor (minimum 12 hours at 3000-level or above).

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Course required course: 3 hrs. of Chinese or Japanese at the 2000 or 3000 level.

Elective Courses-See advisor for approved course listing.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

### Civic Engagement Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above).

See advisor for course options and distribution requirements.

Students must have a minimum of 2.5 grade-point average in the minor to be given credit for completing the minor.



**Classics Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).  
At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Courses required: 3 hrs. of Greek or Latin (at the 2000 or 3000 level)  
Elective Courses - See advisor for approved course listing.  
Student must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

**Communication Minor**

18 semester hours in minor (minimum 9 hours at 3000-level or above).

**Courses required** **Cr. Hr.**

COMM 3500	Foundations of Human Comm	.....3
COMM 3600	Found of Rhetoric & Social Influence	.....3
RTVF 3300	Found Mass Communication	.....3

Elective Courses - See advisor for approved course listing.

**Dance Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).

**Courses required** **Cr. Hr.**

THEA 2840	Beginning Dance Techniques	.....3
THEA 3840	Intermediate Dance Techniques I	.....3
THEA 3850	Intermediate Dance Techniques II	.....3
THEA 4840	Advanced Dance Techniques	.....3
THEA 2310	Theatre Technology I OR	
THEA 2610	Costume Construction	.....3

**Economics Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).  
This minor is designed to offer students majoring in other disciplines the opportunity to gain additional training in the field of economics. This 15 hour program allows students the flexibility to tailor course work to their specific academic interests and career goals.

**English Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).

At least 9 hours required for the minor must be completed at Auburn.

Courses required: NONE

Elective Courses - See advisor for approved course listing.

**French Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Courses required: Minimum of 6 hours at the 2000 level.

Elective Courses - See advisor for approved course listing.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

**German Minor**

17 semester hours in minor (minimum 9 hours at 3000-level or above).

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Courses required: Minimum of 6 hours at the 2000 level.

Elective Courses - See advisor for approved course listing.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

**History Minor**

15 semester hours above the 1000-level, including six hours at the 2000-level and nine hours at the 3000-level or above.

**Italian Minor**

15 semester hours in minor (minimum 9 at 3000-level or above). At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Courses required: 3 hours of Italian (at the 2000 or 3000 level)

Elective Courses - See advisor for approved course listing.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

**Medieval And Renaissance/Early Modern Studies Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above; no more than 6 hours at 2000-level). Students must earn at least a C for all courses that count toward the minor.

Courses required: Four hours of Italian (2000-level)

Elective Courses - See advisor for approved course listing.

**Music Minor**

15 semester hours in minor (To minor, arrange for a performance audition with an applied music instructor).

**Courses required** **Cr. Hr.**

MUSI 1310	Music Theory 1	.....2
MUSI 1320	Music Skills I	.....1
MUSI 1410	Music Theory II	.....2

MUSI 1420	Music Skills II	.....1
MUSI 3510 or 3520	Music History I or II	.....3
MUSI 3610 or 3630	Conducting I	.....2
MUAP 1310	Performance	.....1
MUAP 1410	Performance	.....1
MUAP 2310	Performance	.....1
MUAP 2410	Performance	.....1
MUSI 1000	Perf. Attendance (4 semesters required)	.....0

**Philosophy Minor**

18 semester hours in minor (minimum 12 hours at 3000/4000-level.)  
3 hours at 1000-level Philosophy; if PHIL 1010 was not taken to satisfy core, then these 3 hours must be PHIL 1010 or PHIL 3110.

**Political Science Minor**

15 semester hours above the 1000-level in minor (minimum 9 hours at 3000-level or above).

POLI 1090 American Government does not count toward the minor, but it is the prerequisite for all higher level Political Science course.

Elective Courses - See advisor for approved course listing.

**Psychology Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).

**Courses required** **Cr. Hr.**

PSYC 2010	Introduction to Psychology	.....3
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Elective Courses - See advisor for approved course listing.

**Religious Studies Minor**

18 semester hours in minor (minimum 9 hours at 3000-level or above).

Courses required: Select one core Logic and one core Ethics course

RELG 1010	Introduction to Religious Studies	.....3
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Elective Courses - See advisor for approved course listing.

**Social Work Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).

Courses required: SOWO 2000 Introduction to Social Work, SOWO 2650 History of Social Welfare, SOWO 3910 Field Practicum

Elective Courses - See advisor for approved course listing.

**Sociology Minor**

15 semester hours in minor (minimum 12 hours at 3000-level or above).

Courses required: NONE

Elective Courses - See advisor for approved course listing.

**Spanish Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above).

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Courses required: Minimum of 6 hours at the 2000 level.

Elective Courses - See advisor for approved course listing. Academic Disciplines: see program director for a list.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

**Technical And Professional Communication Minor**

15 semester hours in minor

**Courses required** **Cr. Hr.**

ENGL 3040	Technical Writing OR	
ENGL 3080	Business Writing	.....3
ENGL 5000	Technical and Professional Editing	.....3
ENGL 5010	Document Design in Tech & Prof Comm	.....3
ENGL 5030	Topics in Tech & Prof Comm	.....3

Elective Courses - Any 3-hr English course, 3000-level or higher.

**Theatre Minor**

15 semester hours in minor (minimum 9 hours at 3000 level or above)

**Courses required** **Cr. Hr.**

THEA 1910	OR	
THEA 2910	Production Practicum I & II	.....(3)
THEA 2120	Acting I	.....(3)
THEA 3700	Theatre History, Theory & Criticism I—Text	.....(3)
THEA 3950	Directing Seminar	.....(3)
THEA 4950	Literature/Theory Seminar	.....(3)

**Women's Studies Minor**

Women's studies, an interdisciplinary minor, advances teaching, research and scholarship about women and women's perspectives. The minor sheds new light on existing knowledge of women and gender, integrates the study and voices of women into traditional disciplines, examines the impact of the social construction of gender and promotes change to improve women's, men's and children's lives.

Eighteen semester hours in minor (minimum 9) hours at 3000-level or above. Courses required: different instructors teach many courses listed in the minor. Students are required to check with the program director or a women's studies advisor prior to registering regarding course content.

Options

Engineering. This program provides for enrollment in the Liberal Arts Curriculum and in the Samuel Ginn College of Engineering. Two degrees will be awarded: a bachelor of arts degree in the liberal arts major and a bachelor's degree in the designated engineering field. Students should receive dual advising through the Colleges of Liberal Arts and Engineering. Typically, five to six academic years are necessary to complete dual requirements.

Pre-Law. Most majors and curricula are accepted as preparation for the study of law. Courses deemed useful, and which may be taken as electives, in majors, and in some cases to fulfill certain core requirements, are available from the pre-law program, located in 8030 E Haley Center, where students receive advice on preparing for law school admission and the study of law.

Pre-Health. Most majors and curricula in Liberal Arts are accepted as preparation for professional degrees in health, including advanced degrees from schools of medicine, dentistry, optometry, physical therapy, occupational therapy and others. Generally, particular courses in the sciences, mathematics and philosophy should be taken in the University Core. Additional sciences and mathematics may be needed as electives. The university's pre-health advisor, housed in the College of Sciences and Mathematics, should be consulted for elective and core course guidance and for assistance in applying to graduate/professional schools. The liberal arts advisor is available for all other matters related to the student's undergraduate studies.

Curriculum in Anthropology (ANTH)

FR	F	S		F	S
ANTH		1000	Intro to Anthr: A Field Approach.....	**	3
ENGL	1100	1120	English Composition I & II .....	3	3
FLNG			Foreign Language (College Core).....	4	4
			Core History.....	3	3
			Core Mathematics .....	3	**
			Core Fine Arts.....	**	3
			Elective.....	1	**
				<b>14</b>	<b>16</b>
<b>SO</b>					
SOCY	1000		Sociology - Global Perspectives OR.....	3	**
GEOG	1010		Global Geography .....	**	**
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Philosophy .....	3	**
			Core Science.....	4	4
<b>ANTH</b>		<b>2000</b>	<b>Ethnographic Methods .....</b>	<b>**</b>	<b>3</b>
<b>ANTH</b>	<b>2100</b>		<b>Introductory Archaeology.....</b>	<b>3</b>	<b>**</b>
<b>ANTH</b>		<b>2310</b>	<b>Race, Gender, and Human Variation.....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>13</b>
<b>JR</b>					
			Core Social Science Group II .....	3	**
STAT		2010	Statistics for Social & Behavior Science .....	**	4
<b>ANTH</b>	<b>3000</b>		<b>Physical Anthropology .....</b>	<b>3</b>	<b>**</b>
<b>ANTH</b>	<b>3100</b>		<b>Language and Culture .....</b>	<b>3</b>	<b>**</b>
			<b>ANTH Elective .....</b>	<b>**</b>	<b>3</b>
			<b>ANTH Tier 2 or 3 .....</b>	<b>3</b>	<b>3</b>
			Electives .....	3	6
				<b>15</b>	<b>16</b>
<b>SR</b>					
<b>ANTH</b>		<b>4900</b>	<b>Anthropological Theory .....</b>	<b>**</b>	<b>3</b>
			<b>ANTH Tier 2 or 3 .....</b>	<b>3</b>	<b>**</b>
			<b>ANTH Elective.....</b>	<b>3</b>	<b>3</b>
			Electives .....	9	9
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>15</b>

TOTAL HOURS - 120

ANTH Tier 2 and 3 I, Anthropology Elective: See adviser for approved course listing. Students either pass the computer competency test or take COMP 1000 as one of their electives.

Curriculum in Art (ATLA)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
			Core Fine Arts (MUSI or THEA) .....	3	**
<b>ARTS</b>	<b>1110</b>	<b>1120</b>	<b>Drawing I &amp; II .....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>	<b>1210</b>		<b>Design I .....</b>	<b>**</b>	<b>3</b>
<b>ARTS</b>	<b>1710</b>	<b>1720</b>	<b>Introduction to Art History I &amp; II .....</b>	<b>3</b>	<b>3</b>
				<b>15</b>	<b>15</b>
<b>SO</b>					
ENGL		2200	World Literature I .....	**	3
			Foreign Language (College Core).....	4	4
			Core Science.....	4	4
<b>ARTS</b>	<b>1220</b>		<b>Design II .....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>	<b>1730</b>		<b>Introduction to Art History III .....</b>	<b>3</b>	<b>**</b>

<b>ARTS</b>	<b>2110</b>	<b>Figure Drawing .....</b>	<b>**</b>	<b>3</b>
		<b>2000-level Studio .....</b>	<b>**</b>	<b>3</b>
			<b>14</b>	<b>17</b>
<b>JR</b>				
ENGL	2210	World Literature II .....	3	**
		Core Mathematics .....	**	3
		Core Social Science Group I & II .....	3	3
<b>ARTS</b>		<b>2000-level Studio .....</b>	<b>3</b>	<b>3</b>
<b>ARTS</b>		<b>3000-level Art History.....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>		<b>2000/3000-level Studio.....</b>	<b>**</b>	<b>3</b>
		Electives .....	3	3
			<b>15</b>	<b>15</b>
<b>SR</b>				
		Core Philosophy.....	3	**
<b>ARTS</b>		<b>3000-level Art History.....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>		<b>3000-level Studio .....</b>	<b>3</b>	<b>3</b>
<b>ARTS</b>	<b>4910</b>	<b>Professional Studio Practices.....</b>	<b>**</b>	<b>2</b>
		Electives .....	6	9
UNIV	4AA0	LA1 Undergraduate Graduation .....	**	0
			<b>15</b>	<b>14</b>

TOTAL HOURS - 120

ARTS 3000-level Studio, ARTS 3000-level Art History: See adviser for approved course listing. Students either pass the computer competency test or take COMP 1000 as one of their electives.

Curriculum in Communication (COMM)

Students must apply for admission to the COMM major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), COMM 1000 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, 1120, and Social Science Group 1. See the department chair or program coordinator for further information.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
FLNG			Foreign Language (College Core).....	4	4
			Core History .....	3	3
			Core Science.....	4	4
			Core Social Science Group I .....	3	**
			Core Social Science Group II .....	**	3
				<b>17</b>	<b>17</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Mathematics .....	3	**
			Core Philosophy .....	3	**
			Core Fine Arts .....	3	**
<b>COMM</b>	<b>1000</b>		<b>Public Speaking.....</b>	<b>**</b>	<b>3</b>
			<b>Group 1 - Foundations .....</b>	<b>**</b>	<b>6</b>
			<b>Group 2.....</b>	<b>**</b>	<b>3</b>
			<b>Group 3.....</b>	<b>3</b>	<b>**</b>
			Electives .....	2	**
				<b>17</b>	<b>15</b>
<b>JR</b>					
			Supporting Area .....	6	9
			<b>Group 1 - Foundations .....</b>	<b>3</b>	<b>**</b>
			<b>Group 3 .....</b>	<b>3</b>	<b>**</b>
			<b>Group 4 .....</b>	<b>**</b>	<b>3</b>
			Electives .....	3	3
				<b>15</b>	<b>15</b>
<b>SR</b>					
			Supporting Area .....	**	3
<b>COMM</b>	<b>4920</b>		<b>Internship .....</b>	<b>**</b>	<b>3*</b>
			<b>Group 4 .....</b>	<b>6</b>	<b>6</b>
			Electives .....	6	**
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>12</b>	<b>12</b>

TOTAL HOURS - 120

Groups 1, 2, 3, 4, Major Elective and Supporting Area: see adviser for approved course listing. \* Internship for 3 credits is part time or 6 credits for full time. Students who transfer to Auburn University's COMM major are required to take a minimum of 21 credit hours in the AU program.

Curriculum in Communication Disorders (CMDS)

Students desiring the Communication Disorders (CMDS) major must formally apply for admission to the program after completion of 30 semester hours of course work that meets university core requirements.

Applications and procedures for admission are available in the CMDS Department, Haley 1199. Students must apply for admission by January 30 to begin the major in summer semester and applications must be received by May 30 to begin the major in fall semester. Applications may be submitted at any time prior to the deadlines. Students must have a 2.2 GPA to take CMDS courses above the 3000-level. Students must have a 2.5 GPA to take Clinical Practicum (CMDS 4910).

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FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
FLNG			Foreign Language (College Core)	4	4
			Core History	3	3
			Core Mathematics	**	3
			Core Social Science Group I & II	3	3
			Elective/Supporting	3	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
COMM	1000		Public Speaking	**	3
BIOL	1000		Introduction Biology & Lab (1001)	4	**
BIOL	1010		Survey of Life & Lab (1011)	**	4
ENGL	2200	2210	World Literature I & II	3	3
			Core Fine Arts	**	3
			Core Philosophy	3	**
COMP	1000		Personal Computer Applications	2	**
<b>CMDS</b>	<b>3000</b>		<b>Introduction Speech-Audiology</b>	<b>3</b>	<b>**</b>
			Elective/Supporting	**	3
				<b>15</b>	<b>16</b>
<b>JR</b>					
<b>CMDS</b>	<b>3400</b>		<b>Speech &amp; Hearing Mech</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>3410</b>		<b>Phonetics</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>3550</b>		<b>Speech &amp; Hearing Science</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4520</b>		<b>Language Acquisition</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4530</b>		<b>Fluency Disorders</b>	<b>**</b>	<b>3</b>
			Electives/Supporting	9	6
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>CMDS</b>	<b>4510</b>		<b>Articulation Disorders</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4540</b>		<b>Vocal Disorders</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4560</b>		<b>Ch &amp; Adol. Language Disorders</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4580</b>		<b>Intro to Clinical Proc SLP</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4600</b>		<b>Intro to Audiology</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4620</b>		<b>Hearing Rehabilitation</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4650</b>		<b>Intro Clinical Proc. AUD</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4910</b>		<b>Clinical Practicum SLP</b>	<b>**</b>	<b>1</b>
			Electives/Supporting	2	3
				<b>14</b>	<b>13</b>
<b>JR</b>					
<b>CMDS</b>	<b>M</b>	<b>F</b>	<b>Summer Starting Sequence</b>	<b>M</b>	<b>F</b>
<b>CMDS</b>	<b>3410</b>	<b>3400</b>	<b>Speech &amp; Hearing Mech</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>3550</b>		<b>Phonetics</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>3550</b>		<b>Speech &amp; Hearing Science</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4520</b>		<b>Language Acquisition</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4530</b>		<b>Fluency Disorders</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4600</b>		<b>Introduction Audiology</b>	<b>**</b>	<b>3</b>
			Electives/Supporting	6	3
				<b>12</b>	<b>15</b>
<b>SR</b>					
<b>CMDS</b>	<b>4510</b>		<b>Articulation Disorders</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4540</b>		<b>Vocal Disorders</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4560</b>		<b>Ch &amp; Adol. Language Disorders</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4580</b>		<b>Intro to Clinical Proc SLP</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4620</b>		<b>Hearing Rehabilitation</b>	<b>3</b>	<b>**</b>
<b>CMDS</b>	<b>4650</b>		<b>Intro Clinical Proc. AUD</b>	<b>**</b>	<b>3</b>
<b>CMDS</b>	<b>4910</b>		<b>Clinical Practicum SLP</b>	<b>**</b>	<b>1</b>
			Electives/Supporting	5	6
UNIV	4AA0		LA1 Undergraduate Graduation	**	0
				<b>17</b>	<b>13</b>

TOTAL HOURS - 120

Supporting: See adviser for approved course listing.

Department of Economics (ECON)

The Department of Economics offers an undergraduate degree in economics: the bachelor of arts in economics (ECON). The ECON has two tracks; the primary track requires students to complete a minor outside of the Department of Economics. The quantitative track is for students with a strong interest in graduate education and requires additional mathematics and statistics courses. Students should see an advisor in the department for specific requirements for the quantitative track.

Curriculum in Economics (ECNL)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
			Core History	3	3
MATH	1610		Calculus I OR	**	**
MATH	1680	1690	Calculus with Business Applications I & II	4	3
			Core Science	4	4
			Elective	**	1
				<b>14</b>	<b>14</b>
<b>SO</b>					
			Core Social Science I	3	**
			Core Fine Arts	**	3
ECON	2020		Micro Economics	3	**
ENGL	2200	2210	World Literature I & II	3	3
PHIL			1020 Ethics or 1040 Business Ethics	3	**

STAT	2610		Statistics	**	3
<b>ECON</b>	<b>2030</b>		<b>Macro Economics</b>	<b>**</b>	<b>3</b>
FLNG			Foreign Language (College Core)	4	4
				<b>16</b>	<b>16</b>
<b>JR</b>					
<b>ECON</b>	<b>3020</b>		<b>Intermediate Microeconomics</b>	<b>3</b>	<b>**</b>
<b>ECON</b>	<b>3030</b>		<b>Intermediate Macro</b>	<b>**</b>	<b>3</b>
<b>ECON</b>	<b>3600</b>		<b>Math &amp; Stat Methods for Econ</b>	<b>**</b>	<b>3</b>
<b>ECON</b>	<b>4300</b>		<b>International Economics</b>	<b>3</b>	<b>**</b>
			Elective	9	9
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>ECON</b>	<b>4600</b>		<b>Econometrics</b>	<b>3</b>	<b>**</b>
			<b>Economics Elective</b>	<b>6</b>	<b>6</b>
			Elective	6	9
				<b>15</b>	<b>15</b>

TOTAL HOURS - 120

Students not passing the University IT examination must take COMP 1000. Economics electives must be selected from an approved list. The curriculum outlined is the Primary Track and requires a minor outside of the Economics Department; Quantitative Track: Students should see an advisor in the department for specific course requirements.

The Department of English offers students a choice of studying in three different tracks: Creative Writing, Literature, or Professional Writing and Literacy Studies. Each track consists of a gateway course particular to the track, four courses in the track, and a capstone course. In addition, all English majors complete a core with a required literature course, a course in rhetoric or linguistics, and a course in globalism, sustainability, or diversity. The department will have lists of its courses in the major that will satisfy requirements of the particular tracks. English majors may count no more than two (2) 2000-level courses toward the major.

Curriculum in English: Creative Writing

Students must take ENGL 2000 (Introduction to Creative Writing) as their gateway course to this track. ENGL 4240 (Special Project in Creative Writing) will serve as the capstone course for this track.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
FLNG			Foreign Language (College Core)	4	4
			Core Fine Arts	**	3
			Core Social Science Group I & II	3	3
			Core Mathematics	3	**
COMP	1000		Personal Computer Applications	**	2
				<b>13</b>	<b>15</b>
<b>SO</b>					
ENGL	2230	2240	British Literature I & II OR		
ENGL	2250	2260	American Literature I & II	3	3
			Core Philosophy	**	3
			Core Science	4	4
			Core History	**	3
<b>ENGL</b>	<b>2000</b>		<b>Introduction to Creative Writing (Gateway)</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>	<b>4000</b>		<b>4000-level Literature Course</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>	<b>Group 1</b>		<b>Group 1</b>	<b>**</b>	<b>3</b>
<b>ENGL</b>	<b>Group 2</b>		<b>Group 2</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>16</b>
<b>JR</b>					
<b>ENGL</b>	<b>4200</b>		<b>Fiction Writing I</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>	<b>4220</b>		<b>Poetry Writing I</b>	<b>**</b>	<b>3</b>
			<b>Elective (2000-level or higher)</b>	<b>3</b>	<b>3</b>
<b>ENGL</b>			<b>Approved Minor</b>	<b>3</b>	<b>3</b>
			Electives	6	6
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>ENGL</b>	<b>4210</b>		<b>Fiction Writing II</b>	<b>3</b>	<b>**</b>
			<b>Poetry Writing II</b>	<b>**</b>	<b>3</b>
	<b>4230</b>		<b>Special Project in Creative Writing (Capstone)</b>	<b>**</b>	<b>3</b>
	<b>4240</b>		<b>Elective (2000-level or higher)</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>			<b>Approved Minor</b>	<b>6</b>	<b>3</b>
			Electives	3	6
UNIV	4AA0		LA1 Undergraduate Graduation	**	0
				<b>15</b>	<b>15</b>

TOTAL HOURS - 120

Group 1 - (3 hrs.) Course in globalism, sustainability, OR diversity. See departmental advisor for approved course listing. Group 2 - (3 hrs.) Linguistics or rhetoric course. See departmental advisor for approved course listing. Approved Minor - (15 hrs.) See departmental advisor for approved course listing. Students either pass the computer competency test or take COMP 1000 as one of their electives.

Curriculum in English: Literature

Students take as the gateway course to the Literature Track either ENGL 2230 (British Literature I), ENGL 2240 (British Literature II), ENGL 2250 (American Literature I), OR ENGL 2260 (American Literature II). Students may not count literature courses taken to fulfill the Core

College of Liberal Arts

Literature Requirement for their Gateway Course. ENGL 4800 (Seminar in Literature) serves as the capstone course for this track.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
FLNG			Foreign Language (College Core)	4	4
			Core Fine Arts	**	3
			Core Social Science Group I & II	3	3
			Core Mathematics	3	**
COMP		1000	Personal Computer Applications	**	2
				<b>13</b>	<b>15</b>
<b>SO</b>					
ENGL	2230	2240	British Literature I & II OR		
ENGL	2250	2260	American Literature I & II (Core)	3	3
			Core Philosophy	**	3
			Core Science	4	4
			Core History	**	3
<b>ENGL</b>	<b>2230</b>	<b>2240</b>	<b>British Literature I or II OR</b>		
<b>ENGL</b>	<b>2250</b>	<b>2260</b>	<b>American Literature I or II (Gateway)</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>			<b>Group 1</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>			<b>Group 2</b>	<b>**</b>	<b>3</b>
<b>ENGL</b>			<b>Elective (2000-level or higher)</b>	<b>3</b>	<b>**</b>
				<b>16</b>	<b>16</b>
<b>JR</b>					
ENGL	3130		Survey of Critical Theory	3	**
ENGL			4300-Level British Literature Course	3	**
ENGL			4400-Level American Literature Course	**	3
ENGL			Elective (2000-level or higher)	**	3
ENGL			Approved Minor	3	3
			Electives	6	6
				<b>15</b>	<b>15</b>
<b>SR</b>					
ENGL			4500-Level Genre Course	3	**
ENGL			4600- or 4700-Level Author or Topics Course	**	3
ENGL		4800	Seminar in Literature (Capstone)	**	3
ENGL			Elective (2000-level or higher)	3	**
ENGL			Approved Minor	6	3
			Electives	3	6
UNIV		4AA0	LA1 Undergraduate Graduation	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

Group 1 - (3 hrs.) Course in Globalism, Sustainability, OR Diversity. See departmental advisor for approved course listing.

Group 2 - (3 hrs.) Linguistics or rhetoric course. See departmental advisor for approved course listing.

At least two literature courses must be before 1800 and at least two after 1800.

Approved Minor - (15 hrs.) See departmental advisor for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in English: Professional Writing and Literacy Studies**

Students in the Professional Writing and Literacy Studies track must take ENGL 2010 (Introduction to Professional Writing) as a gateway course to this track. ENGL 4810 (Capstone in Professional Writing) serves as the capstone course for this track.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
FLNG			Foreign Language (College Core)	4	4
			Core Fine Arts	**	3
			Core Social Science Group I & II	3	3
			Core Mathematics	3	**
COMP		1000	Personal Computer Applications	**	2
				<b>13</b>	<b>15</b>
<b>SO</b>					
ENGL	2230	2240	British Literature I & II OR		
ENGL	2250	2260	American Literature I & II	3	3
			Core Philosophy	**	3
			Core Science	4	4
			Core History	**	3
<b>ENGL</b>	<b>2010</b>		<b>Introduction to Professional Writing (Gateway)</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>			<b>4000-level Literature Course</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>			<b>Group 1</b>	<b>3</b>	<b>**</b>
<b>ENGL</b>			<b>Group 2</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>16</b>
<b>JR</b>					
ENGL			3120 OR 4180	3	**
ENGL			5000 OR 5010	**	3
ENGL			Elective (2000-level or higher)	3	3
ENGL			Approved Minor	3	3
			Electives	6	6
				<b>15</b>	<b>15</b>
<b>SR</b>					
ENGL			3040, 3080, OR 4000	3	**
ENGL			4010, 4160, OR 5030	**	3
ENGL		4810	Capstone in Professional Writing (Capstone)	**	3
ENGL			Elective (2000-level or higher)	3	**
ENGL			Approved Minor	6	3
			Electives	3	6
UNIV		4AA0	LA1 Undergraduate Graduation	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

Group 1 - (3 hrs.) Course in Globalism, Sustainability, OR Diversity. See departmental advisor for approved course listing.

Group 2 - (3 hrs.) Linguistics or rhetoric course. See departmental advisor for approved course listing.

Approved Minor - (15 hrs.) See departmental advisor for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in French-International Trade (FLFT)**

FR	F	S		F	S
COMM	1000		Public Speaking	3	**
FLFR	1010	1020	Elementary French I & II	4	4
ENGL	1100	1120	English Composition I & II	3	3
			Core History	3	3
			Core Mathematics	3	**
			Core Science	**	4
				<b>16</b>	<b>14</b>
<b>SO</b>					
ECON	2020		Microeconomics	3	**
ENGL	2200	2210	World Literature I & II	3	3
			Core Philosophy	**	3
			Core Social Science Group I	**	3
			Core Science	4	**
			Macroeconomics	**	3
FLFR	2010	2020	Intermediate French I & II	4	4
				<b>14</b>	<b>16</b>
<b>JR</b>					
			Core Fine Arts	3	**
ACCT	2110		Principles of Financial Accounting	3	**
ACCT		2210	Principles of Managerial Accounting	**	3
			Required Management Course*	3	**
MKTG		3310	Principles of Marketing	**	3
FLFR	3030		French Conversation	3	**
FLFR	3040		French Composition	3	**
FLFR		3110	French Civilization	**	3
FLFR		3310	Business French	**	3
			Electives	**	3
				<b>15</b>	<b>15</b>
<b>SR</b>					
FINC	3610		Principles of Finance	3	**
ECON	4300		International Economics	3	**
			Required Finance Course*	**	3
FLFR	3100		Introduction to French Literature	3	**
FLFR		4310	French for International Trade	**	3
FLFR		4980	Senior Capstone	**	1
			French Elective	6	5
			Business Elective	**	3
UNIV		4AA0	LA1 Undergraduate Graduation	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

FLFR Elective, Business Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

\* See advisor for approved courses.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in French (FLFR)**

FR	F	S		F	S
FLFR	1010	1020	Elementary French I & II	4	4
ENGL	1100	1120	English Composition I & II	3	3
			Core History	3	3
			Core Mathematics	3	**
			Core Science	**	4
			Electives	2	1
				<b>15</b>	<b>15</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II	3	3
			Core Social Science Group I & II	3	3
			Core Science	4	**
			Core Philosophy	**	3
			Core Fine Arts	**	3
FLFR	2010	2020	Intermediate French I & II	4	4
				<b>14</b>	<b>16</b>
<b>JR</b>					
COMM	1000		Public Speaking	3	**
FLFR	3010		French Conversation	3	**
FLFR		3040	French Composition	**	3
FLFR	3100		Introduction to French Literature	3	**
FLFR		3110	French Civilization	**	3
			Electives	6	9
				<b>15</b>	<b>15</b>
<b>SR</b>					
FLFR		4980	FLFR Electives	9	9
			Senior Capstone	**	1
			Electives	**	6
UNIV		4AA0	LA1 Undergraduate Graduation	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

FLFR Elective: See adviser for approved course listing.

College of Liberal Arts

Students either pass the computer competency test or take COMP 1000 as one of their electives.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in German (FLGR)**

FR	F	S		F	S
FLGR	1010	1020	Elementary German I & II .....	4	4
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
			Core Mathematics .....	3	**
			Core Science .....	**	4
			Electives .....	2	1
				<b>15</b>	<b>15</b>
<b>SO</b>					
PHIL			Core Philosophy .....	**	3
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Social Science Group I & II .....	3	3
			Core Science .....	4	**
			Core Fine Arts .....	**	3
<b>FLGR</b>	<b>2010</b>	<b>2020</b>	<b>Intermediate German I &amp; II .....</b>	<b>4</b>	<b>4</b>
				<b>14</b>	<b>16</b>
<b>JR</b>					
COMM	1000		Public Speaking .....	3	**
<b>FLGR</b>	<b>3010</b>		<b>Beg. German Comp. &amp; Conver. ....</b>	<b>3</b>	<b>**</b>
<b>FLGR</b>		<b>3020</b>	<b>Int. German Comp. &amp; Conver. ....</b>	<b>**</b>	<b>3</b>
<b>FLGR</b>	<b>3100</b>		<b>Introduction to German Literature.....</b>	<b>3</b>	<b>**</b>
			<b>German Elective .....</b>	<b>**</b>	<b>3</b>
			Electives .....	6	9
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>FLGR</b>		<b>4980</b>	<b>Senior Capstone.....</b>	<b>**</b>	<b>1</b>
			<b>German Electives .....</b>	<b>9</b>	<b>9</b>
			Electives .....	6	5
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

FLGR Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in German-International Trade (FLGT)**

FR	F	S		F	S
COMM		1000	Public Speaking .....	3	**
FLGR	1010	1020	Elementary German I & II .....	4	4
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
			Core Mathematics .....	3	**
			Core Science .....	**	4
				<b>16</b>	<b>14</b>
<b>SO</b>					
ECON	2020		Microeconomics .....	3	**
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Social Science Group I .....	**	3
			Core Science .....	4	**
			Core Philosophy .....	**	3
ECON		2030	Macroeconomics .....	**	3
<b>FLGR</b>	<b>2010</b>	<b>2020</b>	<b>Intermediate German I &amp; II .....</b>	<b>4</b>	<b>4</b>
				<b>14</b>	<b>16</b>
<b>JR</b>					
			Core Fine Arts .....	3	**
ACCT	2110		Principles of Financial Accounting .....	3	**
ACCT		2210	Principles of Managerial Account .....	**	3
			Required Management Course* .....	3	**
MKTG		3310	Principals of Marketing .....	**	3
<b>FLGR</b>	<b>3010</b>		<b>Beg. German Comp. &amp; Conver. ....</b>	<b>3</b>	<b>**</b>
<b>FLGR</b>		<b>3020</b>	<b>Int. German Comp. &amp; Conver. ....</b>	<b>**</b>	<b>3</b>
<b>FLGR</b>	<b>3100</b>		<b>Introduction to German Literature.....</b>	<b>3</b>	<b>**</b>
			Elective .....	**	3
			<b>German Elective .....</b>	<b>**</b>	<b>3</b>
				<b>15</b>	<b>15</b>
<b>SR</b>					
FINC	3610		Principles of Finance .....	3	**
ECON	4300		International Economics .....	3	**
			Required Finance Course* .....	**	3
<b>FLGR</b>	<b>4310</b>	<b>4320</b>	<b>German for Bus &amp; Econ I &amp; II.....</b>	<b>3</b>	<b>3</b>
<b>FLGR</b>		<b>4980</b>	<b>Senior Capstone .....</b>	<b>**</b>	<b>1</b>
			<b>German Electives .....</b>	<b>6</b>	<b>5</b>
			Business Elective .....	**	3
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

FLGR Elective, FLGR Business Elective, Business Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as an elective.

\* See advisor for approved courses.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in Health Services Administration (HADM)**

For admission into the HADM major, students must have completed 30 semester hours of course work, have earned a minimum 2.3 GPA in a list of specified courses. See the department chair or program coordinator for further information.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Foreign Language (College Core).....	4	4
MATH	1610/1680		Calculus.....	4	**
MATH	1620/1690		Calculus.....	**	4
COMM	1000		Public Speaking .....	3	**
PHIL			Core Philosophy .....	**	3
				<b>14</b>	<b>14</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core History .....	3	3
ACCT	2110		Principles Fin. Acct. ....	3	**
ACCT		2210	Introduction Mgr. Acct.....	**	3
			Core Science I & II.....	3	3
ECON	2020		Microeconomics.....	3	**
ECON		2030	Macroeconomics.....	**	3
				<b>15</b>	<b>15</b>
<b>JR</b>					
<b>HADM</b>	<b>3000</b>		<b>Gateway to Health Admin.....</b>	<b>3</b>	<b>**</b>
<b>HADM</b>	<b>3300</b>		<b>Health Policy.....</b>	<b>3</b>	<b>**</b>
<b>HADM</b>	<b>3700</b>		<b>Health Law .....</b>	<b>3</b>	<b>**</b>
<b>HADM</b>	<b>4200</b>		<b>Reimb &amp; Ins.....</b>	<b>3</b>	<b>**</b>
			Fine Arts Core .....	**	3
ENGL	3080		Business Writing.....	3	**
FINC		3610/3810	Finance .....	**	3
MKGT		3100/3810	Marketing.....	**	3
MGMT		3100/3810	Management .....	**	3
			Social Science Group 1 .....	**	3
				<b>15</b>	<b>15</b>

**SUMMER**

HADM	2100		Medical Terminology .....	3	
HADM	4920		Internship .....	3	

**SR**

<b>HADM</b>	<b>4000</b>		<b>Dev Care Orgs .....</b>	<b>3</b>	<b>**</b>
<b>HADM</b>	<b>4880</b>		<b>HIT .....</b>	<b>3</b>	<b>**</b>
<b>HADM</b>			<b>HA Seminar .....</b>	<b>3</b>	<b>3</b>
<b>HADM</b>	<b>4950</b>		<b>Capstone Seminar.....</b>	<b>**</b>	<b>3</b>
STAT			Stats .....	**	3-4
HRMN	3420		Human Resource Management .....	3	**
MKGT		3810/3100	Marketing.....	**	3
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>12</b>	<b>12-13</b>

**TOTAL HOURS - 120**

Group 1, 2, 3 : See adviser for approved course listing.

**Curriculum in History (HIST)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
FLNG			Foreign Language (College Core).....	4	4
			Core History .....	3	3
			Core Mathematics.....	3	**
			Core Fine Arts .....	**	3
				<b>13</b>	<b>13</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Philosophy.....	3	**
			Core Social Science Group I & II .....	3	3
			Core Science.....	4	4
			Personal Comp. (or pass competency exam) .....	**	2
COMP		1000	Group 1.....	3	3
				<b>16</b>	<b>15</b>
<b>JR</b>					
<b>HIST</b>	<b>3800</b>		<b>Historian's Craft.....</b>	<b>3</b>	<b>**</b>
<b>HIST</b>			<b>Group 2.....</b>	<b>6</b>	<b>6</b>
			Liberal Arts Electives .....	3	6
			Free Electives .....	3	4
				<b>15</b>	<b>16</b>
<b>SR</b>					
COMM	1000		Public Speaking .....	3	**
<b>HIST</b>	<b>4950</b>		<b>Senior Thesis .....</b>	<b>3</b>	<b>**</b>
<b>HIST</b>			<b>Group 3.....</b>	<b>3</b>	<b>6</b>
			Liberal Arts Electives .....	3	3
			Free Electives .....	4	7
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>16</b>	<b>16</b>

**TOTAL HOURS - 120**

HIST Group 1: Any 2000-level history course.

HIST Group 2: Any 3000-level history course.

HIST Group 3: Any 5000-level history course.

College of Liberal Arts

**Curriculum in Journalism (JRNL)**

Students must apply for admission to the JRNL major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), JRNL 1100 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, 1120, and Social Science Group 1. See the department chair or program coordinator for further information.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
			Core Social Science Group I & II .....	3	3
			Core Fine Arts .....	3	**
			Core Math .....	**	**
			Core Philosophy .....	3	**
JRNL		1100	Newspaper Fundamentals.....	**	3
				15	15
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
			Foreign Language (College Core).....	4	4
			Core Science.....	4	4
JRNL	2210		Newswriting.....	3	**
JRNL		2310	Reporting .....	**	3
JRNL		2910	Practicum in Journalism.....	**	1
				14	15
JR					
JRNL	3220		Feature Writing .....	3	**
JRNL	3410		Photojournalism .....	3	**
JRNL		3470	Newspaper Editing & Design.....	**	3
			Electives*.....	9	12
				15	15
SUMMER					
JRNL	4920		Journalism Internship .....	3	
SR					
JRNL	4460		Press Law & Ethics .....	3	**
			Journalism Group 2 & 3 .....	**	9
			Electives*.....	12	4
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0
				15	13

**TOTAL HOURS - 120**

Journalism Groups 1, 2, and 3: See adviser for approved course listing. Students either pass the computer competency test or take COMP 1000 as one of their electives. Sixteen hours of electives must be in the College of Liberal Arts but outside of the Department of Communication and Journalism.

\* Students who transfer to Auburn University's Journalism major are required to take a minimum of 21 credit hours in AU program.

**Curriculum in Radio, Television, and Film (RTVF)**

Students must apply for admission to the RTVF major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), COMM 1000 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, 1120, and Social Science Group 1. See the department chair or program coordinator for further information.

FR	F	S		F	S
			Core Social Science Group II .....	**	3
ENGL	1100	1120	English Composition I & II .....	3	3
			Foreign Language (College Core).....	4	4
			Core History .....	3	3
			Core Social Science Group I.....	3	**
			Core Science.....	4	4
				17	17
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Mathematics.....	3	**
			Core Philosophy.....	3	**
			Core Fine Arts .....	3	**
COMM		1000	Public Speaking.....	**	3
			Group 1 - Foundations.....	**	3
			Group 2.....	**	3
			Electives/Supporting Cognate .....	3	3
				15	15
JR					
RTVF			3350 or 3380.....	3	**
			Group 1 - Foundations.....	6	**
			Major Elective.....	**	9
			Electives/Supporting Cognate .....	6	6
				15	15
SR					
RTVF		4920	Internship .....	**	3
			Major Elective.....	9	6
			Electives/Supporting Cognate .....	5	3
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0
				14	12

**TOTAL HOURS - 120**

Groups 1, 2, Major Elective and Supporting Cognate: See adviser for approved course listing.

\* Internship may be taken part time for 3 credits or full-time for 6 credits.

Students who transfer to Auburn University's RTVF major are required to take a minimum of 21 hours in the AU program.

**Curriculum in Broadcast Journalism Track (RTVF)**

Students must apply for admission to the RTVF major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), COMM 1000 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, 1120, and Social Science Group 1. See the department chair or program coordinator for further information.

FR	F	S		F	S
			Core Social Science Group II .....	**	3
ENGL	1100	1120	English Composition I & II .....	3	3
			Foreign Language (College Core).....	4	4
			Core History .....	3	3
			Core Social Science Group I.....	3	**
			Core Science.....	4	4
				17	17
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Mathematics.....	3	**
			Core Philosophy.....	3	**
			Core Fine Arts .....	3	**
COMM		1000	Public Speaking.....	**	3
			Group 1 - Foundations.....	**	3
JRNL		1100	Newspaper Fundamentals.....	**	3
			Electives/Supporting Cognate .....	3	3
				15	15
JR					
RTVF		3380	Broadcast Newswriting .....	3	**
			Group 1 - Foundations.....	6	**
			Major Elective.....	**	6
			Group 2 - Production Requirement .....	**	3
RTVF		4330	Media Law and Regulation.....	**	3
			Electives/Supporting Cognate .....	6	3
				15	15
SR					
RTVF		4920	Internship .....	**	3
			Major Elective.....	9	6
			Electives/Supporting Cognate .....	5	3
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0
				14	12

**TOTAL HOURS - 120**

Groups 1, 2, Major Elective and Supporting Cognate: See adviser for approved course listing.

\* Internship may be taken part time for 3 credits or full time for 6 credits. Students who transfer to Auburn University's RTVF major are required to take a minimum of 21 hours in the AU program.

**Curriculum in Philosophy (PHIL)**

FR	F	S		F	S
			Core Math .....	3	**
			Core Philosophy.....	**	3
ENGL	1100	1120	English Composition I & II .....	3	3
			Foreign Language (College Core).....	4	4
			Core History .....	3	3
			Core Fine Arts .....	**	3
				13	16
SO					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I & II .....	3	3
			Core Science.....	4	4
			Area I .....	3	**
			Area II .....	**	3
PHIL		3110	Symbolic Logic .....	**	3
			Elective.....	3	**
				16	16
JR					
COMM		1000	Public Speaking .....	3	**
			Area I .....	3	**
			Area II .....	**	3
PHIL	3330	3340	Ancient Philosophy & Modern Philosophy.....	3	3
			Electives .....	6	8
				15	14
SR					
			3000/4000 Philosophy Elective.....	6	6
			Electives .....	9	9
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0
				15	15

**TOTAL HOURS - 120**

Philosophy major requires a total of 33 hours with at least 6 hours at the 4000-level.

Area I: Ethics & Value Theory, 3000- or 4000-level

Area II: Metaphysics & Epistemology, 3000- or 4000-level

See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

College of Liberal Arts

**Curriculum in Philosophy/Religious Studies Option (RELG)**

FR	F	S		F	S
PHIL	1010		Introduction to Logic.....	3	**
ENGL	1100	1120	English Composition I & II.....	3	3
			Foreign Language (College Core).....	4	4
			Core History.....	3	3
			Core Fine Arts.....	**	3
<b>PHIL</b>	<b>1020</b>		<b>Introduction to Ethics.....</b>	<b>**</b>	<b>3</b>
				<b>13</b>	<b>16</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I & II.....	3	3
			Core Science.....	4	4
			Core Math.....	3	**
<b>RELG</b>	<b>1010</b>		<b>Intro to Religious Studies.....</b>	<b>3</b>	<b>**</b>
<b>PHIL</b>	<b>3330</b>		<b>History of Philosophy I.....</b>	<b>**</b>	<b>3</b>
			Elective.....	**	3
				<b>16</b>	<b>16</b>
<b>JR</b>					
COMM	1000		Public Speaking.....	3	**
<b>PHIL</b>	<b>3400</b>		<b>Medieval Philosophy OR.....</b>	<b>**</b>	<b>**</b>
<b>PHIL</b>	<b>3740</b>		<b>Existentialism.....</b>	<b>**</b>	<b>3</b>
<b>PHIL</b>	<b>3300</b>		<b>Philosophy of Religion.....</b>	<b>3</b>	<b>**</b>
<b>RELG</b>	<b>3330</b>		<b>Eastern Religions OR.....</b>	<b>**</b>	<b>**</b>
<b>RELG</b>	<b>3340</b>		<b>Western Religions.....</b>	<b>**</b>	<b>3</b>
<b>PHIL</b>	<b>3340</b>	<b>3350</b>	<b>History of Philosophy II &amp; III.....</b>	<b>3</b>	<b>3</b>
			Electives.....	6	5
				<b>15</b>	<b>14</b>
<b>SR</b>					
<b>RELG</b>			<b>3000/4000 Relg Level Elective.....</b>	<b>3</b>	<b>3</b>
<b>RELG</b>			<b>3000/4000 Relg Level Elective.....</b>	<b>3</b>	<b>**</b>
			Electives.....	9	12
UNIV	4AA0		LA1 Undergraduate Graduation.....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in Political Science (POLI)**

POLI 1090 American Government is the prerequisite for all higher level Political Science courses.

See the department chair or program coordinator for further information.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
FLNG			Foreign Language (College Core).....	4	4
			Core Philosophy.....	3	**
			Core Science.....	4	4
POLI		1090	Core Social Science Group II.....	**	3
COMP	1000		Personal Comp. (or pass competency exam).....	2	**
				<b>16</b>	<b>14</b>
<b>SO</b>					
<b>POLI</b>			<b>Group 2 - Distribution Requirement.....</b>	<b>3</b>	<b>**</b>
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Mathematics.....	3	**
			Core History.....	3	3
			Core Fine Arts.....	3	**
			Core Social Science Group II.....	**	3
COMM	1000		Public Speaking.....	**	3
<b>POLI</b>	<b>3000</b>		<b>Research Methods.....</b>	<b>**</b>	<b>3</b>
				<b>15</b>	<b>15</b>
<b>JR</b>					
<b>POLI</b>			<b>Group 1 - Political Thought.....</b>	<b>3</b>	<b>**</b>
<b>POLI</b>			<b>Group 2 - Distribution Requirement.....</b>	<b>3</b>	<b>3</b>
<b>POLI</b>			<b>Group 3 - Concentration Requirement.....</b>	<b>**</b>	<b>3</b>
			Electives.....	9	9
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>POLI</b>			<b>Group 3 - Concentration Requirement.....</b>	<b>3</b>	<b>3</b>
<b>POLI</b>			<b>Group 4 - POLI Electives.....</b>	<b>6</b>	<b>6</b>
			Electives.....	6	6
UNIV	4AA0		LA1 Undergraduate Graduation.....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

Groups 1, 2, 3 and 4: See adviser for approved course listing and exclusions.

**Curriculum in Psychology (PSYC)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
FLNG			Foreign Language (College Core).....	4	4
			Core History.....	3	3
			Core Mathematics.....	3	**
<b>PSYC</b>	<b>2010</b>		<b>Introduction to Psychology.....</b>	<b>**</b>	<b>3</b>
				<b>13</b>	<b>13</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
<b>PSYC</b>	<b>2020</b>		<b>Orientation to Major.....</b>	<b>1</b>	<b>**</b>
<b>STAT</b>	<b>2010</b>		<b>Statistics.....</b>	<b>4</b>	<b>**</b>
			Core Social Science Group I & II.....	3	3

Core Science.....	4	4
<b>Research Methods.....</b>	<b>**</b>	<b>4</b>
	<b>15</b>	<b>14</b>
<b>JR</b>		
Core Philosophy.....	3	**
Core Fine Arts.....	**	3
<b>Psychology Electives.....</b>	<b>6</b>	<b>6</b>
Electives.....	8	8
	<b>17</b>	<b>17</b>
<b>SR</b>		
COMM	1000	
Public Speaking.....	3	**
<b>Psychology Electives.....</b>	<b>6</b>	<b>6</b>
Electives.....	8	8
UNIV	4AA0	
LA1 Undergraduate Graduation.....	**	0
	<b>17</b>	<b>14</b>

**TOTAL HOURS - 120**

Psychology Electives: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in Public Administration (PUBA)**

POLI 1090 American Government is the prerequisite for all higher-level political science courses.

See the department chair or program coordinator for further information.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
FLNG			Foreign Language (College Core).....	4	4
PHIL			Core Philosophy (1020 Preferred).....	3	**
			Core Science.....	4	4
COMP	1000		Personal Computer Applications.....	2	**
<b>POLI</b>	<b>1090</b>		<b>American Government.....</b>	<b>**</b>	<b>3</b>
				<b>16</b>	<b>14</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Mathematics.....	3	**
			Core History.....	3	3
			Core Fine Arts.....	3	**
			Core Social Science Group I & II.....	3	3
			1000 or 3110.....	**	3
			Group 1 - Quantitative Methods.....	**	3-4
				<b>15</b>	<b>15-16</b>
<b>JR</b>					
<b>POLI</b>	<b>3250</b>		<b>Introduction to Public Adm.....</b>	<b>3</b>	<b>**</b>
<b>POLI</b>	<b>3260</b>		<b>Organization Theory.....</b>	<b>**</b>	<b>3</b>
<b>POLI</b>	<b>3270</b>		<b>Policy Process.....</b>	<b>3</b>	<b>**</b>
			<b>Group 3 - Conflict Resolution.....</b>	<b>**</b>	<b>3</b>
			<b>Group 4 - Cultural Diversity.....</b>	<b>3</b>	<b>**</b>
			Electives.....	6	9
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>POLI</b>	<b>4140</b>		<b>Public Finance.....</b>	<b>3</b>	<b>**</b>
<b>POLI</b>	<b>4160</b>		<b>Public Personnel.....</b>	<b>3</b>	<b>**</b>
			<b>Group 2 - Gov't and Admin.....</b>	<b>3</b>	<b>3</b>
			<b>Group 5 - Public Law.....</b>	<b>**</b>	<b>3</b>
			Electives.....	5	9-10
UNIV	4AA0		LA1 Undergraduate Graduation.....	**	0
				<b>14</b>	<b>15-16</b>

**TOTAL HOURS - 120**

Groups 1, 2, 3, 4, and 5: See adviser for approved course listing.

**Curriculum in Public Relations (PUBR)**

Students must apply for admission to the PRCM major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), JRNL 1100 with a B or better, and earn a minimum 2.3 GPA in ENGL 1100, 1120, and Social Science Group 1. See the department chair or program coordinator for further information.

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History.....	3	3
			Core Science.....	4	4
			Foreign Language (College Core).....	4	4
			Core Social Science Group I.....	3	**
<b>COMM</b>	<b>1000</b>		<b>Public Speaking.....</b>	<b>**</b>	<b>3</b>
				<b>17</b>	<b>17</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Mathematics.....	3	**
			Core Philosophy.....	3	**
			Core Fine Arts.....	3	**
ECON	2020		Microeconomics.....	**	3
			<b>Group 1 - Foundations.....</b>	<b>3</b>	<b>3</b>
			Elective.....	**	5
				<b>15</b>	<b>14</b>
<b>JR</b>					
			Supporting Coursework.....	3	3
			<b>Group 1 - Foundations.....</b>	<b>3</b>	<b>3</b>
			<b>Major Required.....</b>	<b>6</b>	<b>6</b>
			Major Electives.....	3	3
				<b>15</b>	<b>15</b>

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SR		Supporting Coursework.....	3	**		
		PRCM 4920 or JRNL 4920.....	**	3		
		<b>Major Required</b> .....	<b>9</b>	<b>9</b>	SR	
		Elective.....	3	**		
UNIV	4AA0	LA1 Undergraduate Graduation.....	**	0		

**TOTAL HOURS - 120**

For Groups, Major Elective, Major Required and Supporting Coursework: See adviser for approved course listing.

\* Internship may be taken part-time for 3 credits or full-time for 6 credits.

Students who transfer to Auburn University's PRCM major are required to take a minimum of 21 hours in the AU program.

**Curriculum in Social Work (SOWO)**

The bachelor of arts in social work degree is fully accredited by the Council on Social Work Education. Graduates are trained to become beginning-level generalist practitioners eligible for licensure and to apply for advanced standing social work graduate programs. Admission to the program is required before enrolling in SOWO 4060. SOCY 1000, SOWO 2000 and 3910 must be completed with a C or better prior to application.

FR	F	S		F	S
BIOL	1000		Introduction to Biology & Lab (1001).....	4	**
SOCY	1000		Sociology - Global Perspective.....	3	**
BIOL		1010	Survey of Life & Lab (1011).....	**	4
ENGL	1100	1120	English Composition I & II.....	3	3
PSYC	2010		Introduction to Psychology.....	3	**
			Core Fine Arts.....	**	3
			Core Math.....	**	3
			Core History.....	3	3
				<b>16</b>	<b>16</b>
<b>SO</b>					
PHIL		1030	Ethics & Health.....	**	3
ENGL	2200	2210	World Literature I & II.....	3	3
			Foreign Language (College Core).....	4	4
CRIM		2000	Crime & Justice in America.....	**	3
<b>SOWO</b>	<b>2000</b>		<b>Introduction to Social Work</b> .....	<b>3</b>	<b>**</b>
<b>SOWO</b>	<b>2650</b>		<b>History of Social Welfare</b> .....	<b>3</b>	<b>**</b>
<b>SOWO</b>		<b>3910</b>	<b>Field Practicum</b> .....	<b>**</b>	<b>3</b>
			Elective.....	3	**
				<b>16</b>	<b>16</b>
<b>JR</b>					
ECON	2020		Microeconomics.....	3	**
STAT	2010		Statistics for Social & Behavior Science.....	**	4
SOCY	3500		Minorities.....	3	**
<b>SOWO</b>	<b>3800</b>	<b>3850</b>	<b>Human Beh in Soc Envir I &amp; II</b> .....	<b>3</b>	<b>3</b>
<b>SOWO</b>		<b>4060</b>	<b>Social Work Methods I</b> .....	<b>**</b>	<b>3</b>
			<b>SOWO/SOCY Elective</b> .....	<b>3</b>	<b>**</b>
			Elective.....	3	3
				<b>15</b>	<b>13</b>
<b>SR</b>					
SOCY	3700		Methods of Social Research.....	3	**
<b>SOCY</b>	<b>4070</b>		<b>Social Work Methods II</b> .....	<b>3</b>	<b>**</b>
<b>SOWO</b>	<b>4080</b>		<b>Social Work Methods III</b> .....	<b>**</b>	<b>3</b>
<b>SOWO</b>	<b>4090</b>		<b>Social Welfare Policy</b> .....	<b>3</b>	<b>**</b>
<b>SOWO</b>		<b>4920</b>	<b>Social Work Internship</b> .....	<b>**</b>	<b>9</b>
<b>SOWO</b>		<b>4950</b>	<b>Social Work Integrative Seminar</b> .....	<b>**</b>	<b>3</b>
			Elective.....	4	**
UNIV	4AA0		LA1 Undergraduate Graduation.....	**	0
				<b>13</b>	<b>15</b>

**TOTAL HOURS - 120**

SOWO Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in Sociology (SOCY)**

FR	F	S		F	S
SOCY	1000		Sociology - Global Perspective.....	3	**
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History.....	3	3
			Core Social Science Group I.....	**	3
			Core Social Science Group II.....	**	3
			Core Philosophy.....	3	**
			Core Fine Arts.....	**	3
COMP		1000	Personal Computer.....	**	2
COMM	1000		Public Speaking.....	3	**
				<b>15</b>	<b>14</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Foreign Language (College Core).....	4	4
			Core Math.....	3	**
			Core Science I & II.....	4	**
<b>SOCY</b>		<b>3500</b>	<b>Minority Groups</b> .....	<b>**</b>	<b>4</b>
				<b>14</b>	<b>14</b>
<b>JR</b>					
STAT	2010		Statistics for Social and Behavior Science.....	4	**
<b>SOCY</b>		<b>3700</b>	<b>Methods of Social Research</b> .....	<b>**</b>	<b>3</b>
			<b>SOCY Concentration</b> .....	<b>3</b>	<b>3</b>

<b>SOCY Directed Elective</b> .....	<b>3</b>	<b>3</b>
Electives.....	6	7
	<b>16</b>	<b>16</b>

<b>SOCY Concentration</b> .....	<b>6</b>	<b>3</b>
<b>Social Thought OR</b>		
<b>Contemporary Theory</b> .....	<b>3</b>	<b>**</b>
<b>Senior Seminar</b> .....	<b>**</b>	<b>3</b>
Electives.....	6	9
LA1 Undergraduate Graduation.....	**	0
	<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

SOCY Directed Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

Students are required to complete a minor outside the department as part of their electives.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in Spanish (FLSP)**

FR	F	S		F	S
FLSP	1010	1020	Elementary Spanish I & II.....	4	4
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History.....	3	3
			Core Mathematics.....	3	**
			Core Science.....	**	4
			Electives.....	2	1
				<b>15</b>	<b>15</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Groups I & II.....	3	3
			Core Science.....	4	**
			Core Philosophy.....	**	3
			Core Fine Arts.....	**	3
<b>FLSP</b>	<b>2010</b>	<b>2020</b>	<b>Intermediate Spanish I &amp; II</b> .....	<b>4</b>	<b>4</b>
				<b>14</b>	<b>16</b>
<b>JR</b>					
COMM	1000		Public Speaking.....	3	**
<b>FLSP</b>	<b>3010</b>		<b>Spanish Phonetics</b> .....	<b>3</b>	<b>**</b>
<b>FLSP</b>	<b>3020</b>		<b>Spanish Syntax</b> .....	<b>3</b>	<b>**</b>
<b>FLSP</b>		<b>3030</b>	<b>Spanish Conversation</b> .....	<b>**</b>	<b>3</b>
<b>FLSP</b>		<b>3040</b>	<b>Spanish Composition</b> .....	<b>**</b>	<b>3</b>
			Electives.....	6	9
				<b>15</b>	<b>15</b>
<b>SR</b>					
<b>FLSP</b>	<b>3100</b>		<b>Introduction to Hispanic Literature</b> .....	<b>3</b>	<b>**</b>
			<b>FLSP Elective</b> .....	<b>6</b>	<b>9</b>
<b>FLSP</b>	<b>4980</b>		<b>Senior Capstone</b> .....	<b>**</b>	<b>1</b>
			Electives.....	6	5
UNIV	4AA0		LA1 Undergraduate Graduation.....	**	0
				<b>15</b>	<b>15</b>

**TOTAL HOURS**

FLSP Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as one of their electives.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in Spanish-International Trade (FLST)**

FR	F	S		F	S
FLSP	1010	1020	Elementary Spanish I & II.....	4	4
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History.....	3	3
			Core Mathematics.....	3	**
			Core Science.....	**	4
			Elective.....	3	**
				<b>16</b>	<b>14</b>
<b>SO</b>					
ECON	2020		Microeconomics.....	3	**
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Social Science Group I.....	**	3
			Core Science.....	4	**
			Core Philosophy.....	**	3
			Macroeconomics.....	**	3
<b>FLSP</b>	<b>2010</b>	<b>2020</b>	<b>Intermediate Spanish I &amp; II</b> .....	<b>4</b>	<b>4</b>
				<b>14</b>	<b>16</b>
<b>JR</b>					
COMM	1000		Core Fine Arts.....	**	3
ACCT	2110		Public Speaking.....	3	**
ACCT		2120	Principles of Financial Accounting.....	3	**
			Principles of Managerial Account.....	**	3
			Required Management*.....	3	**
MKTG		3310	Principles of Marketing.....	**	3
<b>FLSP</b>	<b>3010</b>		<b>Spanish Phonetics</b> .....	<b>3</b>	<b>**</b>
<b>FLSP</b>	<b>3020</b>		<b>Spanish Syntax</b> .....	<b>3</b>	<b>**</b>
<b>FLSP</b>		<b>3030</b>	<b>Spanish Conversation</b> .....	<b>**</b>	<b>3</b>
<b>FLSP</b>		<b>3040</b>	<b>Spanish Composition</b> .....	<b>**</b>	<b>3</b>
				<b>15</b>	<b>15</b>



College of Liberal Arts

<b>SR</b>					
FINC	3610	Principles of Finance.....	3	**	
ECON	4300	International Economics.....	3	**	
		Required Finance*	**	3	
<b>FLSP</b>	<b>3100</b>	<b>Introduction to Hispanic Literature .....</b>	<b>3</b>	<b>**</b>	
<b>FLSP</b>	<b>4980</b>	<b>Senior Capstone.....</b>	<b>**</b>	<b>1</b>	
		<b>FLSP Business Elective .....</b>	<b>3</b>	<b>3</b>	
		<b>FLSP Elective.....</b>	<b>3</b>	<b>5</b>	
		Business Elective .....	**	3	
UNIV	4AA0	LA1 Undergraduate Graduation.....	**	0	
			<b>15</b>	<b>15</b>	

**TOTAL HOURS - 120**

FLSP Elective, FLSP Business Elective, Business Elective: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as an elective.

\* See advisor for approved courses.

Students must earn a C and maintain a 2.5 grade-point average in all major courses.

**Curriculum in Theatre (THLA)**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3	3
<b>THEA</b>	<b>1010</b>	<b>1110</b>	<b>Introduction for Majors I &amp; II.....</b>	<b>3</b>	<b>3</b>
<b>THEA</b>	<b>2400</b>		<b>Design Aesthetics .....</b>	<b>**</b>	<b>3</b>
<b>THEA</b>	<b>2310</b>		<b>Theatre Technology I.....</b>	<b>3</b>	<b>**</b>
<b>THEA</b>	<b>2311</b>		<b>Tech Theatre I Lab.....</b>	<b>1</b>	<b>**</b>
<b>THEA</b>		<b>2610</b>	<b>Costume Construction.....</b>	<b>**</b>	<b>3</b>
			Core Foreign Language.....	4	4
				<b>14</b>	<b>16</b>

<b>SO</b>			Core Science.....	4	4
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Math .....	**	**
<b>THEA</b>	<b>2910</b>	<b>2910</b>	<b>Production Practicum II.....</b>	<b>1</b>	<b>1</b>
			<b>Theatre Elective†.....</b>	<b>3</b>	<b>**</b>
<b>THEA</b>		<b>3700</b>	<b>Theatre History, Theory, &amp; Criticism I: Text.....</b>	<b>**</b>	<b>3</b>
			<b>Theatre Elective††.....</b>	<b>**</b>	<b>3</b>
			Elective.....	3	**
				<b>17</b>	<b>14</b>

<b>JR</b>			Core Social Science Grp. 1.....	**	3
			Core History/Human Odyssey .....	3	3
<b>THEA</b>	<b>3910</b>	<b>3910</b>	<b>Production Practicum III.....</b>	<b>1</b>	<b>1</b>
<b>THEA</b>		<b>4950</b>	<b>Lit/Theory Seminar.....</b>	<b>**</b>	<b>3</b>
<b>THEA</b>	<b>3710</b>	<b>3720</b>	<b>Theatre History, Theory, Crit. II &amp; III: Body, Space ...</b>	<b>3</b>	<b>3</b>
<b>THEA</b>			<b>Theatre Elective.....</b>	<b>**</b>	<b>3</b>
<b>THEA</b>	<b>3950/60</b>		<b>Directing/Dramaturgy Seminar .....</b>	<b>3</b>	<b>**</b>
			Electives.....	3	3
				<b>16</b>	<b>16</b>

<b>SR</b>			Core Philosophy/Fine Arts .....	3	3
			Core Social Science Grp. 2 .....	**	**
<b>THEA</b>			<b>Theatre Elective†††.....</b>	<b>1</b>	<b>**</b>
<b>THEA</b>	<b>4980</b>		<b>Senior Capstone Project .....</b>	<b>3</b>	<b>**</b>
<b>THEA</b>		<b>4950</b>	<b>Lit/Theory Seminar.....</b>	<b>**</b>	<b>3</b>
			<b>Theatre Elective.....</b>	<b>**</b>	<b>6</b>
			Electives .....	4	1
UNIV	4AA0	LA1 Undergraduate Graduation .....	**	0	
				<b>14</b>	<b>13</b>

**TOTAL HOURS - 120**

Theatre Majors who do not earn a grade of "C" or higher in theatre courses must repeat those courses for credit toward their theatre degree.

† To be selected from THEA 2120 or THEA 2840

†† To be selected from any theatre design or technology course

††† Must be in studio, lab, or practicum course work

**School of Fine Arts**

In all Fine Arts curricula, electives may include six hours Basic ROTC or Advanced ROTC. In curricula which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses not in the university core to be selected with help of departmental advisor.

Course prefix symbols for Fine Arts Curricula: Art (ARTS), Music (MUSI, MUAP), Theatre (THPR, THMU, THDT, THMN)

**Department of Art**

The Department of Art offers one professional degree: the BFA in studio/fine arts (ARTF). Fine arts prepares students to become artists and for careers in visual arts institutions. Fine arts students choose one area of concentration: painting, sculpture, printmaking, or ceramics. The BA in art (ATLA studio) is for students who want a studio art education within the liberal arts tradition. Students elect studio courses in several areas, rather than a single concentration. The BA in art (ARTH-art history) is for students who want an art history education within the liberal arts curriculum. Students elect art history courses in four groups and complete

a capstone project in methodology and history. Students in this program have greater flexibility in electives, enabling them to access a broad array of courses within the university. The Department of Art also offers an art history minor.

The BA degrees (studio and art history) in art are listed under majors in the Liberal Arts Curriculum. The Department of Art is an accredited member of the National Association of Schools of Art and Design, and a member of the College Art Association.

The Pre-Graphic Design program (PATG) is offered by the College of Liberal Arts, Department of Art. The Graphic Design major (GDES) is offered by the College of Architecture, Design and Construction, Department of Industrial and Graphic Design. Students pursuing the bachelor of fine arts degree in graphic design (GDES) will enroll in the College of Liberal Arts as PATG for the first year level curriculum. Students who intend to apply to the BFA in graphic design will be referred to the College of Architecture, Design and Construction by the College of Liberal Arts for admissions criteria and to determine admission eligibility.

**Admissions Standards and Policy for Graphic Design.** Full admission into the BFA in graphic design is selective and based on a multiple step process. 1) After completing the first year level pre-graphic design curriculum, an admission process based on grade-point average ranking admits qualified students into the graphic design second-year level program in the College of Architecture, Design and Construction for the GDES 2210 and GDES 2220 courses. Once accepted into the second year level graphic design major, the students will be classified as GDES and be considered probationary. 2) All second year level GDES students who have achieved a minimum 2.5 grade-point average in GDES 2210 and GDES 2220 are eligible to apply through a portfolio review process for the third year level GDES curriculum. The first year pre-graphic design curriculum is included in this section. The full graphic design curriculum is listed with The College of Architecture, Design and Construction.

**Curriculum in Studio Art (ARTF)**

<b>FR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II .....	3	3
			Core Fine Arts (in MUSI or THEA) .....	3	**
			Core History .....	**	3
<b>ARTS</b>	<b>1110</b>	<b>1120</b>	<b>Drawing I &amp; II .....</b>	<b>3</b>	<b>3</b>
<b>ARTS</b>	<b>1210</b>	<b>1220</b>	<b>Design I &amp; II .....</b>	<b>3</b>	<b>3</b>
<b>ARTS</b>	<b>1710</b>	<b>1720</b>	<b>Art History I &amp; II .....</b>	<b>3</b>	<b>3</b>
				<b>15</b>	<b>15</b>

<b>SO</b>			World Literature I & II.....	3	3
			Core Philosophy.....	**	3
<b>ARTS</b>	<b>1730</b>		<b>Art History III.....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>	<b>2110</b>		<b>Figure Drawing.....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>		<b>2140</b>	<b>Advanced Drawing I.....</b>	<b>**</b>	<b>3</b>
<b>ARTS</b>	<b>2310</b>		<b>Painting I.....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>		<b>2410</b>	<b>Printmaking I.....</b>	<b>**</b>	<b>3</b>
<b>ARTS</b>	<b>2510</b>		<b>Sculpture I.....</b>	<b>3</b>	<b>**</b>
<b>ARTS</b>		<b>2810</b>	<b>Ceramics I.....</b>	<b>**</b>	<b>3</b>
			<b>Studio .....</b>	<b>**</b>	<b>3</b>
				<b>15</b>	<b>18</b>

<b>JR</b>			Core History .....	3	**
			Core Science.....	4	**
<b>ARTS</b>		<b>3000</b>	<b>Art History .....</b>	<b>**</b>	<b>3</b>
<b>ARTS</b>		<b>3100</b>	<b>Intermedia.....</b>	<b>**</b>	<b>3</b>
			<b>Fine Arts Level II &amp; III .....</b>	<b>3</b>	<b>3</b>
			<b>Studio .....</b>	<b>**</b>	<b>6</b>
			Elective.....	**	3
				<b>16</b>	<b>15</b>

<b>SR</b>			Core Social Science Group I & II .....	3	3
			Core Science.....	4	**
			Core Math .....	3	**
<b>ARTS</b>	<b>3800</b>		<b>Issues &amp; Criticism in Contemp Art.....</b>	<b>**</b>	<b>3</b>
<b>ARTS</b>	<b>4910</b>		<b>Professional Art Practices.....</b>	<b>**</b>	<b>2</b>
<b>ARTS</b>	<b>4980</b>		<b>Senior Project.....</b>	<b>**</b>	<b>4</b>
			<b>Fine Arts Level IV.....</b>	<b>**</b>	<b>4</b>
			<b>Studio .....</b>	<b>**</b>	<b>3</b>
UNIV	4AA0	LA1 Undergraduate Graduation .....	**	0	
				<b>17</b>	<b>15</b>

**TOTAL HOURS - 126**

Fine Arts Level I, II, III, IV and Studio: See adviser for approved course listing.

Students either pass the computer competency test or take COMP 1000 as an elective.

**Curriculum in Art History (ARTH)**

(ARTH)		F	S		F	S
FR						
ENGL	1100	1120	English Composition I & II.....	3	3	3
			Core Fine .....	3	3	3
			Core Fine Arts (MUSI or THEA).....	3	**	3
ARTS	1110	1120	<b>Drawing I &amp; II .....</b>	<b>3</b>	<b>3</b>	<b>3</b>
ARTS	1210	1210	<b>Design I .....</b>	<b>**</b>	<b>3</b>	<b>3</b>
ARTS	1710	1720	<b>Art History I &amp; II .....</b>	<b>3</b>	<b>3</b>	<b>3</b>
				<b>15</b>	<b>15</b>	<b>15</b>
SO						
ENGL		2200	World Literature I .....	**	4	3
			Foreign Language (College Core).....	4	4	4
			Core Science.....	4	4	4
ARTS	1220		<b>Design II .....</b>	<b>3</b>	<b>**</b>	<b>**</b>
ARTS	1730		<b>Art History III.....</b>	<b>3</b>	<b>**</b>	<b>**</b>
ARTS			<b>3000 level Art History .....</b>	<b>**</b>	<b>3</b>	<b>3</b>
				<b>14</b>	<b>14</b>	<b>14</b>
JR						
ENGL	2210		World Literature I .....	3	**	**
			Core Mathematics.....	**	3	3
			Core Social Science Group I & II.....	3	3	3
ARTS			<b>3000 level Art History .....</b>	<b>6</b>	<b>6</b>	<b>6</b>
			Elective.....	3	3	3
				<b>15</b>	<b>15</b>	<b>15</b>
SR						
			Core Philosophy.....	3	**	**
ARTS			<b>3000 level Art History .....</b>	<b>6</b>	<b>3</b>	<b>3</b>
ARTS			<b>Capstone in Art History .....</b>	<b>**</b>	<b>9</b>	<b>9</b>
			Electives.....	6	6	6
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0	0
				<b>15</b>	<b>15</b>	<b>15</b>

**TOTAL HOURS - 120**

ARTS 3000 level Art History: See adviser for approved course listing.  
Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in Graphic Design (PATG)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core Science.....	4	4
ARTS	1110	1120	<b>Drawing I &amp; II .....</b>	<b>3</b>	<b>3</b>
ARTS	1210	1220	<b>Design I &amp; II.....</b>	<b>3</b>	<b>3</b>
ARTS	1710	1720	<b>Art History I &amp; II .....</b>	<b>3</b>	<b>3</b>
				<b>16</b>	<b>16</b>

Graphic Design (GDES) is located in the Department of Industrial Design in the College of Architecture, Design and Construction.

Please see the College of Architecture, Design and Construction, page x, for the full Curriculum in Graphic Design (GDES).

**Transfer**

Art studio course credit earned (C or better) will be considered for advanced standing if a complete portfolio of work is submitted to the Auburn Art Department for evaluation. If the examples do not approximate Auburn's requirements, then credit may be given for an art studio elective. If the quality of work is not acceptable, credit may be given for an open elective. Transfer students are advised that their degrees may require more than a total of four years because of the professional nature of Auburn's curriculum, the sequential arrangement of its courses, and heavy demands for enrollment.

**Department of Music**

The Department of Music provides students a variety of music experiences. Performance groups, such as the Marching Band, Symphonic Band, Concert Band, Campus Band, Orchestra, Concert Choir, Men's Chorus, Women's Chorus, University Singers, Gospel Choir and various smaller music ensembles, are available to all qualified university students. Many performance groups require a successful audition before admission. Information is available within the department.

All students taking private instruction (MUAP) will be auditioned before enrollment and must concurrently enroll in MUSI 1000 (Performance Attendance). Regulations concerning this class are available in the Music Department Office.

The Department of Music offers the bachelor of arts in music (performance option). Students must audition for the program. More information is available in the Music Department Office.

The bachelor of arts degree with a Music Theatre concentration is offered in conjunction with the Department of Theatre and is designed for students who wish to prepare for performing careers or graduate study in this area. Students must audition for the program. More information is available in the Music Department Office.

The Department of Music works in cooperation with the College of Education in providing course offerings for music education degrees. Students pursuing music education degrees will register through the College of Education.

**Curriculum in Music (MULA)**

(Performance Option)

FR	F	S		F	S
MUSI	1000	1000	Performance Attendance .....	0	0
MUSI	1310	1410	<b>Music Theory I &amp; II.....</b>	<b>2</b>	<b>2</b>
MUSI	1320	1420	<b>Music Skills I &amp; II .....</b>	<b>1</b>	<b>1</b>
MUAP	1520	1620	<b>Performance I &amp; II .....</b>	<b>1</b>	<b>1</b>
MUSI			<b>Ensemble .....</b>	<b>1</b>	<b>1</b>
MUSI	1020	1030	<b>Piano Skills I &amp; II.....</b>	<b>1</b>	<b>1</b>
ENGL	1100	1120	English Composition I & II .....	3	3
			Core History .....	3	3
			Core Math .....	3	**
			Core Fine Arts .....	**	3
				<b>15</b>	<b>15</b>
SO					
MUSI	1000	1000	<b>Performance Attendance .....</b>	<b>0</b>	<b>0</b>
MUSI	2310	2410	<b>Music Theory III &amp; IV .....</b>	<b>2</b>	<b>2</b>
MUSI	2320	2420	<b>Music Skills III &amp; IV .....</b>	<b>1</b>	<b>1</b>
MUAP	2520	2620	<b>Performance III &amp; IV .....</b>	<b>1</b>	<b>1</b>
MUSI			<b>Ensemble .....</b>	<b>1</b>	<b>1</b>
MUSI			<b>Ensemble .....</b>	<b>1</b>	<b>1</b>
MUSI	2040	2050	<b>Functional Piano I &amp; II.....</b>	<b>1</b>	<b>1</b>
ENGL	2200	2210	World Literature I & II.....	3	3
			Core Philosophy.....	3	**
			Social Science Group I & II.....	3	3
			Liberal Arts Minor/Electives .....	**	3
				<b>16</b>	<b>16</b>
JR					
MUSI	1000	1000	<b>Performance Attendance .....</b>	<b>0</b>	<b>0</b>
MUSI		3000	<b>Junior Recital.....</b>	<b>**</b>	<b>0</b>
MUSI	3510	3520	<b>Music History I &amp; II .....</b>	<b>3</b>	<b>3</b>
MUSI	3610/303620/40		<b>Conducting I &amp; II.....</b>	<b>2</b>	<b>2</b>
MUAP	3520	3620	<b>Performance V &amp; VI .....</b>	<b>2</b>	<b>2</b>
MUSI			<b>Ensemble .....</b>	<b>1</b>	<b>1</b>
MUSI			<b>Ensemble .....</b>	<b>1</b>	<b>1</b>
			Core Science I & II.....	4	4
			Electives/ROTC.....	3	3
				<b>16</b>	<b>16</b>
SR					
MUSI	1000	1000	<b>Performance Attendance .....</b>	<b>0</b>	<b>0</b>
MUAP	4520	4620	<b>Performance VII &amp; VIII.....</b>	<b>2</b>	<b>2</b>
MUSI			<b>Ensemble .....</b>	<b>1</b>	<b>1</b>
MUSI	4010/20		<b>Vocal/Instrumental Pedagogy.....</b>	<b>2</b>	<b>**</b>
MUSI		4000	<b>Senior Recital .....</b>	<b>**</b>	<b>0</b>
			Foreign Language I & II .....	4	4
			Liberal Arts Minor/Electives .....	4	6
UNIV	4AA0		LA1 Undergraduate Graduation .....	**	0
				<b>13</b>	<b>13</b>

**TOTAL HOURS - 120**

Specific Curriculum Models for Concentrations in Vocal, Instrumental, Piano, and Musical Theatre may be found in the Music Department Office.

Music majors must earn a grade of "C" or higher in music courses to have them count toward the degree.

Department of Theatre

The Department of Theatre provides instruction and production experience to students interested in developing their talents in the theatre arts, whether as majors or non-majors. Consequently, a broad range of classroom, laboratory, and performance experiences are provided in acting, directing, music theatre, dance, scenic and lighting design, costume design, theatre technology, construction and crafts, theatre history, dramatic literature, music theatre, theatre criticism, theatre administration, and management.

The bachelor of arts is designed for students seeking to study theatre within the liberal arts curriculum. The BA (THLA) is for students who choose to study theatre as a humanistic discipline or who wish to concentrate in theatre history, criticism, dramatic literature, dramaturgy, and directing.

The bachelor of fine arts is for students who have specific professional goals in mind. The BFA (THPR, THMU, THDT, THMN) is for students seeking professional training in an intensive program in a specific concentration—performance, music theatre, design/technology, or management. Admission to the BFA degree tracks is by audition or presentation of portfolio to the Theatre faculty. Students are expected to maintain a 2.7 grade-point average in their area of emphasis, and continuance in the BFA degree tracks is subject to review each semester by the faculty. Final recommendation for graduation is made after the successful presentation of a performance recital or the successful execution of a design or major production project during the student's final year.

Curriculum in Theatre Design and Technology (THDT)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History/Human Odyssey.....	3	3
			Core Philosophy.....	3	**
THEA	1010	1110	Introduction for Majors I & II.....	3	3
THEA	1910		Production Practicum I.....	1	**
THEA		2310	Tech Theatre I.....	**	3
THEA		2311	Tech Theatre I Lab.....	**	1
		2400	Design Aesthetics.....	**	3
THEA	2610		Costume Construction.....	3	**
				16	16
<b>SO</b>					
			Core Social Science Group 1.....	**	3
			Core Science.....	4	4
ENGL	2200	2210	World Literature I & II.....	3	3
THEA	2840		Beginning Dance Techniques.....	3	**
THEA			Theatre Elective.....	**	3
THEA	2910	2910	Production Practicum II.....	1	1
THEA	3200		Stage Management.....	3	**
THEA		3700	Theatre History, Theory, & Criticism I:Text.....	**	3
				14	17
<b>JR</b>					
			Core Social Science Group 2.....	**	3
			Core Fine Arts (excluding THEA).....	3	**
THEA	2120		Acting I.....	3	**
THEA	3410		Scene Design I.....	3	**
THEA		3510	Lighting Design.....	**	3
THEA		3640	Costume Design.....	**	3
	3710	3720	Theatre History, Theory, Crit. II & III-- Body, Space .3	**	3
	3910	3910	Production Practicum III.....	1	1
			Core Math.....	**	3
				13	16
<b>SR</b>					
THEA	4950		Lit/Theory Seminar.....	**	3
THEA	4910		Production Practicum IV.....	**	1
THEA	4980		Senior Capstone Course.....	3	**
THEA			Theatre Elective Emphasis A or B.....	3	6
THEA	4940		Theatre Special Projects.....	3	**
	3950		Directing Seminar.....	3	**
			Electives.....	3	3
UNIV		4AA0	LA1 Undergraduate Graduation.....	**	0
				15	13

TOTAL HOURS - 120

Theatre Majors who do not earn a grade of "C" or higher in theatre courses must repeat those courses for credit toward their theatre degree.

Emphasis A: Scenic/Lighting Design and Technical Direction - Scene Design II, Properties Design and Technology, Scenic Painting

Emphasis B: Costume Design/History - Advanced Makeup, Costume History, Advanced Costume Construction

Curriculum in Theatre-Performance (THPR)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
THEA	1010	1110	Introduction for Majors I & II.....	3	3
		2120	Acting I.....	**	3
THEA		2310	Theatre Technology I.....	**	3
THEA		2311	Theatre Technology Lab.....	**	1
THEA	2610		Costume Construction.....	3	**
THEA	2840		Beginning Dance Techniques.....	3	**
			Core Math.....	**	3
THEA	2110		Voice & Movement Fundamentals.....	2	**
THEA	2111		Voice & Movement Fundamentals Lab.....	1	**
				15	16
<b>SO</b>					
			Core Science.....	4	4
ENGL	2200	2210	World Literature I & II.....	3	3
THEA	2910	2910	Production Practicum II.....	1	1
THEA	2650		Stage Makeup.....	3	**
THEA		3700	Theatre History, Theory, & Criticism I--Text.....	**	3
THEA		3120	Acting II.....	**	3
THEA			* Required Dance Elective.....	1	**
THEA	3110		Voice II.....	3	**
				15	14
<b>JR</b>					
			Core Social Science Grp. 2.....	**	3
			Core History/Human Odyssey.....	3	3
THEA	3840/60		Intermediate Dance I or Movement for Actors.....	3	**
THEA	3150	3160	BFA Performance Studio I & II.....	4	4
THEA	3710	3720	Theatre History, Theory, Crit. II & III-- Body, Space .3	**	3
	3190		Singing Practicum.....	1	**
THEA	3910	3910	Production Practicum III.....	1	1
				15	14
<b>SR</b>					
			Core Philosophy/Fine Arts.....	3	3
			Electives.....	3	3
THEA	4140	4150	BFA Performance Studio III & IV.....	4	4
THEA			Theatre Electives.....	2	3
			Senior Capstone Project.....	3	**
			Core Social Science Grp. 1.....	**	3
UNIV		4AA0	LA1 Undergraduate Graduation.....	**	0
				15	16

TOTAL HOURS - 120

Dance Electives: THEA 2841, 3841, 4841. THEA 2940 or 3940 Applied Theatre: Acting may be substituted for dance elective

Theatre Majors who do not earn a grade of "C" or higher in theatre courses must repeat those courses for credit toward their theatre degree.

Curriculum in Theatre-Management (THMN)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core History/Human Odyssey.....	3	3
			Core Philosophy.....	3	**
THEA	1010	1110	Introduction for Majors I & II.....	3	3
		1910	Production Practicum I.....	1	**
		2310	Theatre Technology I.....	**	3
		2311	Tech Theatre I Lab.....	**	1
THEA	2610	2400	Design Aesthetics.....	**	3
			Costume Construction.....	3	**
				16	16
<b>SO</b>					
			Core Social Science Group 1.....	**	3
			Core Science.....	4	4
ENGL	2200	2210	World Literature I & II.....	3	3
THEA	2840		Beginning Dance.....	3	**
THEA			Theatre Elective.....	**	3
THEA	2910	2910	Production Practicum II.....	1	1
THEA	3200		Stage Management.....	3	**
THEA		3700	Theatre History, Theory, & Criticism I--Text.....	**	3
				14	17
<b>JR</b>					
			Core Social Science Group 2.....	**	3
			Core Fine Arts (excluding THEA).....	3	**
THEA	2120		Acting I.....	3	**
THEA	3350		Technical Direction and Production Management...3	**	3
THEA		3520	Sound Design.....	**	3
THEA	3710	3720	Theatre History, Theory, Crit. II & III-- Body, Space .3	**	3
THEA	3910	3910	Production Practicum III.....	1	1
POLI	3250		Intro to Public Administration.....	3	**
POLI		3340	Intro to Conflict Resolution.....	**	3
THEA		3950	Directing Seminar.....	**	3
				16	16

College of Liberal Arts

SR							
THEA			Theatre Electives.....	**	3		
THEA	4940		Theatre Special Projects .....	**	3		
THEA		4910	Production Practicum IV.....	**	1		
THEA	4980		Senior Capstone Project .....	3	**		
PHIL	1040		Business Ethics .....	3	**		
POLI		5370	Non Profit Management .....	**	3		
			Core Math .....	3	**		
			Elective.....	3	3		
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0		
					12	13	

**TOTAL HOURS - 120**

Theatre Majors who do not earn a grade of "C" or higher in theatre courses must repeat those courses for credit toward their theatre degree.

**Curriculum in Theatre-Music Theatre (THMU)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
MUSI	1310		Music Theory I.....	2	**
MUSI	1320		Music Skills I.....	1	**
THEA	1010	1110	Intro for Majors I & II .....	3	3
THEA		2120	Acting I .....	**	3
THEA	2610		Constume Construction .....	3	**
THEA		1910	Production Practicum I.....	**	1
			Core Math .....	**	3
THEA	2110		Voice & Movement Fundamentals .....	2	**
THEA	2111		Voice & Movement Fundamentals Lab.....	1	**
MUAP	1530	1630	Performance I & II .....	1	1
				16	14
SO			Core Science.....	4	4
			Core Social Science Group 2.....	3	**
THEA	2841	2841	Dance Lab I (Ballet) .....	1	1
THEA		3140	Music Theatre Acting .....	**	3
THEA	3841	3841	Dance Lab II (Jazz).....	1	1
THEA		3700	Theatre History, Theory, & Criticism I--Text.....	**	3
MUSI	1020		Piano Skills.....	1	**
THEA	2910		Production Practicum II.....	**	1
THEA	2310		Theatre Technology I.....	3	**
THEA	2311		Theatre Technology Lab .....	1	**
MUAP	2530	2630	Performance III & IV .....	1	1
				15	14

JR							
THEA	2650		Stage Makeup.....	3	**		
ENGL	2200		World Literature I & II.....	3	3		
THEA	3150	3000	BFA Performance Studio I & II.....	4	4		
THEA	3710		Theatre History, Theory, Critit. II/Music Theatre History .....	3			
				3			
MUAP	3530	3160	Performance V & VI.....	1	1		
THEA	3910		Production Practicum III.....	1	1		
THEA		4841	Dance Lab III: Tap.....	**	1		
			Core Social Science Grp. 1 .....	**	3		
					15	16	

**SR**

			Core Philosophy/Fine Arts .....	3	3	
THEA	4980		Senior Capstone Project .....	3	**	
			Core History/Human Odyssey .....	3	3	
THEA	4150	4160	BFA Performance Studio III & IV .....	4	4	
			Electives .....	3	3	
			Theatre or Music Electives.....	**	1	
UNIV		4AA0	LA1 Undergraduate Graduation .....	**	0	
					16	14

**TOTAL HOURS - 120**

Theatre Majors who do not earn a grade of "C" or higher in theatre courses must repeat those courses for credit toward their theatre degree.

# School of Nursing

GREGG E. NEWSCHWANDER, *Dean*  
JENNIFER SCHUESSLER, *Associate Dean*

THE SCHOOL OF NURSING, established in 1979, offers a program of study leading to the bachelor of science in nursing. The nursing curriculum prepares beginning professional nurse generalists who are capable of functioning as members of the healthcare team in providing care for individuals and groups in diverse settings. The program also provides an educational base for advancement in formal study, research and practice. The facilities and resources of the university are used to provide a broad academic background in the humanities and sciences. Graduates are eligible to make application to the NCLEX-RN examination to become registered nurses.

A pre-professional program in Nursing Science is required of students seeking admission to the professional curriculum. The first two years of course work are designated Pre-Nursing (PNUR). The Professional Curriculum requires five terms including 1-2 summer terms, depending on the semester of admission. The Curriculum includes classroom, laboratory and clinical experiences.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Curriculum in Nursing-Traditional

FR	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021)	4	**
CHEM		1030/31	Fundamentals of Chemistry	**	4
ENGL	1100	1120	English Composition I & II	3	3
HIST		1010	World History I	**	3
MATH	1120		Pre-Calculus Algebra	3	**
HDFS		2010	Lifespan Human Development	**	3
			Social Science Core Group I & II	3	3
			Core Fine Arts	3	**
				<b>16</b>	<b>16</b>
<b>SO</b>					
ENGL	2220	2210	World Literature I & II	3	3
HIST	1020		World History II	3	**
PHIL		1030	Ethics and the Health Sciences	**	3
BIOL	3200		General Microbiology	4	**
NUFS	2000		Nutrition & Health	3	**
STAT		2510	Statistics	**	3
BIOL	2500	2510	Human A & P I & II	4	4
				<b>17</b>	<b>13</b>
<b>JR</b>	<b>M</b>	<b>F</b>		<b>M</b>	<b>F</b>
NURS	2020		Nursing: The Foundation of Health Care	3	**
NURS		3110	Theoretical Concepts of Prof. Nsg. Practice	**	3
NURS		3130	Evidenced-Based Skills Assess. & Health Prom.	**	4
NURS		3141	Conc. & Evid.-Based Skills for Prof. Clin. Prac.	**	3
NURS		3120	Nursing Pathophysiology	**	3
				<b>3</b>	<b>13</b>
<b>JR</b>	<b>S</b>	<b>M</b>		<b>S</b>	<b>M</b>
NURS	3210		Clinical Pharmacology	2	**
NURS	3220		Evidenced Based Practice	2	**
NURS	3230		Prof. Nsg. Con.: Acute Care Across Life Span	6	**
NURS	3231		Prof. Nsg. Con.: Acute Care: Clinical	4	**
NURS		3330	Prof. Nsg. Con.: Childbearing Fam. & Rep. H.	**	4
NURS		3331	Prof. Nsg. Con.: Childbearing Fam. Clinical	**	2
NURS		3340	Prof. Nsg. Concepts Across Populations	**	3
NURS		3341	Prof. Nsg. Concepts Across Populations Clin.	**	3
				<b>14</b>	<b>12</b>
<b>SR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
NURS	4230		Prof. Nsg. Con.: Chronic & Complex Cond.	5	**
NURS	4231		Prof. Nsg. Con.: Chronic/Complex Cond. Clin.	5	**
NURS	4810		Prof. Nsg. Leadership in Microsystems	2	**
			Elective (optional-major)	2	**
NURS		4910	Prof. Nsg. Leadership in Complex Systems	**	3
NURS		4911	Leadership Practicum	**	2
NURS		4920	Transitions to Professional Nursing	**	2
NURS		4921	Nursing Practice Preceptorship	**	5
UNIV		4AA0	NU1 Undergraduate Graduation	**	**
				<b>12-14</b>	<b>12</b>
<b>JR</b>	<b>F</b>	<b>S</b>		<b>F</b>	<b>S</b>
NURS	2020		Nursing: The Foundation of Health Care	3	**
NURS		3110	Theoretical Concepts of Prof. Nsg. Practice	**	3
NURS		3130	Evidenced-Based Skills Assess. & Health Prom.	**	4
NURS		3141	Conc. & Evid.-Based Skills for Prof. Clin. Prac.	**	3
BIOL		3120	Nursing Pathophysiology	**	3
				<b>3</b>	<b>13</b>

JR	M	F		M	F
BIOL	3210		Clinical Pharmacology	2	**
NURS	3230		Prof. Nsg. Con.: Acute Care Across Life Span	6	**
NURS	3231		Prof. Nsg. Con.: Acute Care Clinical	4	**
NURS		3220	Evidence Based Practice	**	2
NURS		3330	Prof. Nsg. Con.: Childbearing Fam. & Rep. H.	**	4
NURS		3331	Prof. Nsg. Con.: Childbearing Fam. Clinical	**	2
NURS		3340	Prof. Nsg. Concepts Across Populations	**	3
NURS		3341	Prof. Nsg. Concepts Across Populations Clin.	**	3
			Elective Optional Major	2	**
				<b>12</b>	<b>14-16</b>
<b>SR</b>	<b>S</b>	<b>M</b>		<b>S</b>	<b>M</b>
NURS	4230		Prof. Nsg. Con.: Chronic & Complex Cond.	5	**
NURS	4231		Prof. Nsg. Con.: Chronic/Complex Cond. Clin.	5	**
NURS	4810		Prof. Nsg. Leadership in Microsystems	2	**
NURS		4910	Prof. Nsg. Leadership in Complex Systems	**	3
NURS		4911	Leadership Practicum	**	2
NURS		4920	Transitions to Professional Nursing	**	2
NURS		4921	Nursing Practice Preceptorship	**	5
UNIV		4AA0	NU1 Undergraduate Graduation	**	**
				<b>12</b>	<b>12</b>

## TOTAL HOURS - 127-129

Curriculum guides for the junior and senior year vary according to semester of admission to professional program.

\* Students may be enrolled in selected pre-nursing courses while taking NURS 2020.

## Admission

Freshman eligibility is determined by the Office of Enrollment Services. Admission requirements are stated elsewhere in this bulletin. High school mathematics, chemistry and biology courses are strongly recommended, along with other college preparatory courses in social science, history, literature and English composition. Students are strongly encouraged to see the academic advisor in the School of Nursing on a regular basis.

Transfers from other institutions must apply through the Office of Enrollment Services. Review of transcripts by the School of Nursing will determine the amount of credit allowed for the pre-nursing requirements. Students may be considered for transfer into Pre-Nursing from another school on campus if they have an overall unadjusted GPA of at least 2.5 on all courses attempted at Auburn University. Students planning to transfer are encouraged to contact the School of Nursing as soon as possible for advisement on transfer of credits. Students must possess the functional ability to perform the skills and behaviors required of a professional nurse. These abilities include but are not limited to:

1. Adequate vision, such as that required to observe changes in physical conditions, to read small print on labels and markings on syringes, and to discern subtle changes in color;
2. Adequate hearing, such as that required to distinguish muted sounds through a stethoscope;
3. Fine motor skills and manual dexterity, such as that required to handle small, delicate equipment;
4. Strength to turn and assist with lifting adults, and to lift and carry children;
5. The mobility to respond quickly in emergency situations;
6. The ability to communicate and interact effectively with others, orally and in writing;
7. The ability to detect odors; and
8. The ability to read independently and to comprehend the written word.

**Professional Program:** Admission to the professional program occurs in both Fall and Spring. Pre-nursing students must formally apply for admission to the professional program, typically during the sophomore year, and meet the deadlines and requirements for each admission cycle. To be eligible for consideration for an interview and admission, applicants must have completed at least 3 of the 5 required science courses in the pre-nursing curriculum and have no more than 22 hours of pre-nursing coursework outstanding. Criteria considered for admission include unadjusted pre-nursing GPA, science GPA, number of hours completed at Auburn, successful completion (C or better) of all pre-nursing requirements and interview score. While the GPA to be considered for an interview is an overall unadjusted GPA of 2.5 or higher, interviews will be granted based on the overall unadjusted GPA of the pool of applicants and in reality a higher GPA may be required to interview. Applicants will be interviewed

only once each academic cycle. If not accepted for admission at the time of their interview, applicants can reapply the next admission cycle by completing a reapplication form. In this case, the applicant's original interview score will be used. Due to limited enrollment, all students who meet minimum requirements may not be interviewed or admitted.

Application forms will be posted on the School of Nursing website by December 1 for Fall admission and March 1 for Spring admission. The deadline for completing an application is February 1 for fall admission and May 15 for spring admission. Interviews for fall admissions are the first Saturday in March and for spring admission the second Saturday in June. Students will be notified of admission decisions in writing by April 1 for fall admission and July 1 for spring admission. Those applicants admitted must successfully complete all pre-nursing courses and NURS 2020 with a C or higher by the end of summer semester for fall admissions and by the end of fall semester for spring admissions.

**Application for RN Licensure.** Following completion of the registered nursing program, the graduate will apply for RN Licensure in Alabama or another state. The Alabama Board of Nursing application has the following questions which must be answered by the applicant:

1. Have you ever been arrested or convicted of a criminal offense other than a minor moving traffic violation?
2. Have you within the last five years abused drugs/alcohol or been treated for dependency to alcohol or illegal chemical substances?
3. Have you ever been arrested or convicted for driving under the influence of drugs/alcohol?
4. Have you within the last five years received inpatient or outpatient treatment or been recommended to seek treatment for mental illness?
5. Have you ever had disciplinary action or is action pending against you by any state board of nursing?
6. Have you ever been placed on a state and/or federal abuse registry?
7. Have you ever been court-martialed/disciplined or administratively discharged by the military?

If an applicant has answered yes to any of the above questions, a full explanation with the appropriate court/treatment records must accompany the application. Applicants must disclose misdemeanors and arrests that didn't result in convictions. Arrests/convictions include checks written on accounts with insufficient funds and DUIs.

If the Board later learns of arrests or convictions that have not been disclosed, this will be considered fraud and deceit in procuring a license, and disciplinary action will be forthcoming.

Applicants to the School of Nursing need to be aware that they may be denied permission to take the RN licensing examination by the Alabama Board of Nursing if they are not of good moral character. A past record of behavior such as a felony conviction, abuse of drugs or alcohol, or theft of drugs may be grounds for denial of licensure. See Section 610-X-8-.01 of the Alabama Board of Nursing Administrative Code.

## Academic Regulations

Advanced placement credit in pre-nursing courses is granted according to university policies stated elsewhere in the bulletin. No advanced standing is allowed in the natural sciences by the School of Nursing. Proficiency examinations or Advanced Placement (CEEB), with accepted score, may be used for advanced placement.

An overall GPA of 2.0 must be maintained for progression through the professional program. Pre-nursing students who do not attain an overall GPA of at least 2.5 at the end of their freshman year should consider alternative fields of study.

A minimum grade of C is required in pre-nursing courses. Transfer credit will not be granted for courses in which a grade less than C is earned.

In the professional program, a minimum grade of C must be achieved in all courses. Because the professional nursing curriculum is designed for progressive development of nursing knowledge and skills, students who earn a grade less than C in a professional program course are not allowed to progress to the next clinical course. The course in which the student earns a grade less than C may be repeated one time only. Students who earn a grade less than C in two or more professional program courses or whose GPA falls below a 2.0 will be dropped from the professional program and are not eligible for readmission. Transfer credit is not generally allowed for courses in the professional program.

## The Professional Program

**Facilities:** The School of Nursing is housed in Miller Hall, where classrooms, a computer lab, an auditorium, The Attilio Corte Assessment laboratory and faculty offices are located. Facilities for clinical nursing experiences include East Alabama Medical Center and other hospitals in the area, Mental Health Centers, clinics, nursing homes, physicians' offices, Public Health Departments, public schools and industrial sites. Students are responsible for complying with policies and procedures required by agencies in which clinical work is done.

**Expenses:** Students accepted into the professional program should expect to incur additional expenses including a professional fee associated with the clinical courses. Uniforms, equipment, transportation to clinical sites, PDA's, exit exams, content exams, NCLEX reviews, a health examination and liability and health insurance coverage are among the requirements. Students are required to have a drug screening test and may be required to undergo a background check, depending on clinical agency policy. The costs of such requirements will be the responsibility of the students. Detailed information is furnished by the dean's office at the time of admission.

**Accreditation:** The School of Nursing operates with full approval of the Alabama Board of Nursing and is fully accredited by the Commission on Collegiate Nursing Education, One Dupont Circle NW, Suite 530, Washington, DC 20036-1120, (202) 887-6791, [www.aacn.nche.edu/accreditation/](http://www.aacn.nche.edu/accreditation/).

# James Harrison School of Pharmacy

R. LEE EVANS, *Dean*

PAUL JUNGNIKEL, *Associate Dean for Academic and Student Affairs*

DAVID RIESE, *Associate Dean for Research and Graduate Programs*

KAREN MARLOWE, *Assistant Dean for Mobile Campus*

KIMBERLY BRAXTON-LLOYD, *Assistant Dean for Health Services*

THE AUBURN PharmD degree program is a four-year course of study that requires the completion of the pre-pharmacy curriculum prior to admission. The curriculum is designed to facilitate the development of those abilities necessary for entry-level practitioners in various practice settings. Consistent with accreditation standards and guidelines, the curriculum provides an appropriate balance of course work in the following areas: biomedical sciences (basic and clinical); pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; pharmacy practice; and pharmacy practice experience. The goal of the curriculum is to prepare students who can provide pharmaceutical care and are life-long learners. To accomplish this, the curriculum involves students in continuous patient care responsibilities starting upon entry into the school. Students also participate as active, self-directed learners in interdisciplinary teaching models.

## Admission

Course requirements for admission to the James Harrison School of Pharmacy may be satisfied by completing the Pre-Professional Curriculum in the College of Sciences and Mathematics. Any or all of these requirements may be met by transfer of appropriate credit from other institutions.

Admission is limited and is contingent upon available facilities and faculty. To be considered for admission the applicant must have a satisfactory GPA and satisfactory scores on the Pharmacy College Admissions Test (PCAT). A grade of D in any prerequisite course will not be accepted. Students are accepted into the James Harrison School of Pharmacy only during fall semester. All pre-pharmacy course work must be completed by the end of the summer term before the professional program begins at the start of fall semester.

Applicants must apply to the James Harrison School of Pharmacy through the Pharmacy College Application Service (PharmCAS) and must also complete the School's Supplemental Application. The James Harrison School of Pharmacy admits students using a rolling admissions process and student applications are prioritized in the order in which they are received. The final deadline for receipt of all application materials is March 1. Students who are successful in meeting the school's initial screening criteria are required to come to the campus for a personal interview in order to be further considered for admission.

The James Harrison School of Pharmacy's Doctor of Pharmacy Program admits students to two campuses: the main Auburn Campus and the Mobile Campus located at the University of South Alabama. Students may express a preference for a specific campus, but assignments are made based on available space. Admitted students are notified of their campus assignment at the time an offer of admission is made.

Prospective students may obtain application materials and information, which further outlines policies and procedures, from the school's Web site at [www.pharmacy.auburn.edu](http://www.pharmacy.auburn.edu) or by contacting the Office of Academic and Student Affairs, 2316 Walker Building, Auburn, AL 36849-5501. Applications through PharmCAS are submitted online at [www.pharmacas.org](http://www.pharmacas.org).

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Admission Requirements

	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021)	4	**
CHEM	1030	1040	Fund Chemistry I & II	3	3
CHEM	1031	1041	Fund Chemistry I & II Lab	1	1
ENGL	1100	1120	English Composition I & II	3	3
ENGL	2200	2210	World Literature I & II	3	3
MATH	1610		Calculus I	4	**
PHIL		1030	Ethics and Health Sciences	**	3
PHYS	1500		General Physics I	4	**
			Core Fine Arts	**	3
			Core History	3	3
CHEM	2070	2080	Organic Chem I & II	3	3
CHEM	2071	2081	Organic Chem Lab I & II	1	1
STAT		2510	Bio/Health Statistics	**	3
BIOL	2500	2510	Anatomy/Physiology I & II	4	4
BIOL		3020	Genomic Biology**	**	4
BIOL	3200		Microbiology	4	**
BCHE	3200		Principles of Biochemistry	**	3
BIOL		3500	Perspectives in Immunology**	**	3
BIOL	5600		Mammalian Physiology	6	**
			Core Social Science I & II	3	3
				<b>46</b>	<b>43</b>

\* New admission requirements were effective Fall Semester 2010 and thereafter

\*\* BIOL 3000 can be substituted for BIOL 3020

\*\*\* BIOL 5500 can be substituted for BIOL 3500

## Doctor of Pharmacy

	F	S		F	S
PYDI	5000		Drugs and Diseases I	5	**
PYDI	5020		Contemp Aspects of Pharm Prac I	2	**
PYDI	5080		Foundations of Pharmacy	1	**
PYDI	5090		Pharmacy Practice Experience I	2	**
PYDI		5100	Drugs and Diseases II	**	5
PYDI		5120	Contemp Aspects of Pharm Prac II	**	2
PYDI		5130	Drug Literature	**	2
PYDI		5140	Principles of Pharmacokinetics	**	3
PYDI		5190	Pharmacy Practice Experience II	**	2
PYDI	5010		Patient Centered Skills	2	**
PYPC		5110	Pharmacy Law and Ethics	**	2
BIOL	5600/5605		Mammalian Physiology	6	**
				<b>18</b>	<b>16</b>
<b>P2</b>					
PYDI	5200		Drugs and Diseases III	8	**
PYDI	5220		Contemp Aspects of Pharm Prac III	2	**
PYDI	5290		Pharmacy Practice Experience III	2	**
PYDI		5300	Drugs and Diseases IV	**	8
PYDI		5320	Contemp Aspects of Pharm Prac IV	**	2
PYDI		5390	Pharmacy Practice Experience IV	**	2
PYPC	5210		Phar Prac Devel, Manag & Eval I	3	**
PYPC		5310	Phar Prac Devel, Manag & Eval II	**	3
PYPS	5230		Drug Products I	3	**
PYPS		5330	Drug Products II	**	3
				<b>18</b>	<b>18</b>
<b>P3</b>					
PYDI	5420		Contemp Aspects of Pharm Prac V	2	**
PYDI	5470		Integrated Pharmacotherapy I	6	**
PYDI	5480		Integrated Pharmacotherapy II	6	**
PYDI	5490		Pharmacy Practice Experience V	2	**
PYDI		5520	Contemp Aspects of Pharm Prac VI	**	2
PYDI		5570	Integrated Pharmacotherapy III	6	**
PYDI		5580	Integrated Pharmacotherapy IV	**	6
PYDI		5590	Pharmacy Practice Experience VI	**	2
			Professional Electives**	2	2
				<b>18</b>	<b>18</b>

Notes:

<b>P4*</b>			
PYPP	5610	Community Pharmaceutical Care .....	5
PYPP	5620	Medicine I .....	5
PYPP	5640	Primary/Ambulatory Care I.....	5
PYPP	5650	Primary/Ambulatory Care II.....	5
PYPP	5660	Health System Practice.....	5
PYPP	5670	Practice Elective I.....	5
PYPP	5680	Practice Elective II.....	5
PYPP		Option- PYPP 5600 or 5630.....	5
PYDI	5690	Contemporary Aspects of Pharm Prac VII.....	2
PYPP	5700	Adv Prac Exper Presentations .....	0
PYDI		4AAO PY1 Graduation.....	0
			<b>42</b>

\* P4 Rotations begin in May and are completed the following April.  
 \*\* Students must reach 3rd-year PYDI standing before completing professional electives.

**Academic Performance Standards**

The implementation of all guidelines will be in addition to those existing policies and standards of the university.

To remain in good standing, students are required to achieve a James Harrison School of Pharmacy GPA of at least 2.25. GPAs will be calculated only from professional course work, which is defined as core pharmacy courses approved by the faculty and listed in the doctor of pharmacy curriculum.

The James Harrison School of Pharmacy students with semester or cumulative GPAs below 2.25, or who receive Ds and Fs in required courses, may be dismissed from the James Harrison School of Pharmacy or required to undergo a remedial plan of study as directed by the Committee on Academic Requirements and Professionalism. The remedial plan of study may require students to retake courses in which they received grades of less than C. Policies concerning academic progression, probation, and dismissal are specified in the James Harrison School of Pharmacy's Academic Performance Standards. A copy of the Standards may be obtained from the James Harrison School of Pharmacy's Office of Academic and Student Affairs or from the school's Web site.

Students must observe pre-requisites and co-requisites stated in the current *Auburn University Bulletin*. A pre-requisite statement denoting “\_year PYDI standing” indicates that the student must have passed all courses in the prior year of the curriculum.

Any student in the pharmacy curriculum who is subject to academic suspension and desires to re-enter the James Harrison School of Pharmacy must, in addition to complying with the pertinent university regulations, be approved by the James Harrison School of Pharmacy's Committee on Admissions.

- Students are required to file an application with the Alabama State Board of Pharmacy for registration as an intern at the time they are enrolled in the James Harrison School of Pharmacy. Information and intern registration forms may be obtained from the Alabama State Board of Pharmacy, 111 Village Street, Hoover, AL 35242, or at www.albop.com. Students must maintain a valid Alabama Internship License as a condition of continued enrollment in the James Harrison School of Pharmacy.
- Upon entering pharmacy school, and at the beginning of each academic year, students are required to furnish documentation of professional liability insurance, current CPR and First Aid certification, personal medical insurance and up-to-date immunizations.
- Pharmacy students are required to attend the Professional Seminar Series.
- The Office of Academic and Student Affairs will provide a list of courses that are approved for professional elective credit. Students may not receive credit for taking professional electives until they reach third professional year standing in the James Harrison School of Pharmacy.
- Students in the doctor of pharmacy program are required to own a laptop computer that meets the school's specifications. Questions about computer specifications should be directed to the School's Office of Information Technology. Computer literacy must be demonstrated upon entry to pharmacy school.
- Students having appropriate qualifications and pre-requisites may be able to take graduate course work while enrolled in the doctor of pharmacy program.
- Students are required to adhere to all of the James Harrison School of Pharmacy's codes, policies, and professional requirements. The school will take disciplinary action against those students who violate such codes, policies, and professional requirements.
- Students will be required to periodically take examinations to assess their ability to integrate the knowledge, skills, and attitudes learned to date. Students may be required to complete remedial course work should their performance be unsatisfactory.
- Consistent with the policies of Auburn University, The James Harrison School of Pharmacy reserves the right to make changes at any time in its academic programs, codes, policies, and professional requirements.
- Students will be notified of their site assignments for the Advanced Practice Experiences at the earliest feasible time, to enable them to make housing arrangements. Rotation sites are located throughout Alabama, western Georgia and the Florida panhandle. Although students may request specific sites, each site has a limited enrollment and students may be assigned to sites they do not request. Students are responsible for procuring housing, including the assessment of its safety and living conditions (e.g., privacy and single-sex housing). Students are also responsible for housing and other living expenses incurred when assigned to rotation sites away from the Auburn campus.



# College of Sciences and Mathematics

CHARLES E. SAVRDA, *Interim Dean*  
 LAWRENCE C. WIT, *Associate Dean for Academic Affairs*  
 VELMA RICHARDSON, *Associate Dean for Diversity and Multicultural Affairs*  
 CHRIS RODGER, *Associate Dean for Research*

THE COLLEGE OF SCIENCES AND MATHEMATICS provides programs in the physical sciences, life sciences and mathematics at the undergraduate and graduate levels. The college also offers scientific and mathematical service courses for students enrolled in all of the other colleges and schools. The college includes the departments of Biological Sciences, Chemistry and Biochemistry, Geology and Geography, Mathematics and Statistics, and Physics. The Arboretum and the Leach Science Center are also included in the College of Sciences and Mathematics.

## Undergraduate Degrees

- Four-year bachelor's degree programs are offered in two areas:
  - Departmental curricula are available in biomedical sciences, botany, chemistry, biochemistry, geography, geology, laboratory and medical technology, microbiology, molecular biology, marine biology, mathematics, applied mathematics, physics and zoology.
  - Pre-professional curricula are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-pharmacy and pre-veterinary medicine.

Embodied in these curricula are the requirements of the University Core Curriculum.

- Admission - The academic requirements and demands on majors in sciences and mathematics necessitate a high school preparation of high intellectual quality. The following courses are recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry and pre-calculus), four units; chemistry, one unit; biology, one unit; history, literature, social science, two or three units. Both physics and foreign language are highly recommended.

COSAM curricula require students to begin with MATH 1610.

Students not prepared for MATH 1610 must first take a lower-numbered course. See advisor for details.

On-campus transfers may declare a major in the College of Sciences and Mathematics if they: (1) have a cumulative Auburn grade-point average of at least 2.0 (on all work attempted) and (2) have completed at least 10 hours of Auburn University course work in the desired major with at least a 2.0 grade-point average in all such courses. Courses in the major are those carrying the appropriate prefix(es) of the specific curriculum. Students not meeting these standards may enroll in the Undeclared Sciences and Mathematics (UNSM) curriculum if they have not reached senior standing. Students in the UNSM curriculum may declare a Sciences and Mathematics major after satisfying the above requirements. A student who enters the UNSM curriculum because he or she is not qualified to declare a major can remain in UNSM for a maximum of one year or until senior standing is reached. After this, if the student is still not qualified to declare a major, he or she will be disenrolled from the College of Sciences and Mathematics.

## Graduate Degrees

Master of science and doctor of philosophy degrees are offered in the College of Sciences and Mathematics. Degree programs are described in this bulletin.

## Web Page

Additional information about the College of Sciences and Mathematics can be found at: <http://www.auburn.edu/cosam/>.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements.

## Minors

### Mathematics Minor

Fifteen semester hours of courses labeled MATH or STAT at the level of 3000 or higher; At least three courses must be designated MATH. A minimum grade of C in each of these courses is required.

### Physics Minor

15 semester hours in minor

Courses required		Cr. Hr.
PHYS	2200	Introductory Quantum Physics and Relativity .....3
PHYS	2100	Intermediate Mechanics .....3
PHYS	3100	Intermediate Electricity & Magnetism .....3
PHYS	3200	Statistical Thermodynamics .....3
PHYS	4100	Fundamentals of Quantum Mechanics .....3

### Statistics Minor

Fifteen hours of course from the following list.

**Course required:** STAT 3600 and 3610 or STAT 3010 and 4020.

Electives: 9 hours from: STAT 4610, 4620, 4630, 5110, 5630.

A minimum grade of C in each of these courses is required.

## General Sciences and Mathematics Curriculum (UNSM)

This curriculum is primarily for freshmen who have not decided on a specific major field of study and for transfer students having deficiencies which preclude their acceptance in a degree program. Freshmen entering this curriculum must declare a major by the end of their first year not pre-health students. Transfer students must complete a specific approved program to clear their admission to a major field of study.

### The General Curriculum (UNSM)

FR	F	S		F	S
MATH	1610	1620	Calculus I & II .....4	4	4
ENGL	1100	1120	English Composition I & II .....3	3	3
			Science .....4	4	4
			Core Social Science Group 1 & 2 .....3	3	3
			Career Exp .....2	**	**
			Elective .....2	**	2
				16	16

**TOTAL HOURS - 32**

## Departmental Curricula

Departmental curricula leading to the bachelor's degree include botany, chemistry, biochemistry, biomedical sciences, geography, geology, microbiology, molecular biology, marine biology, laboratory and medical technology, mathematics, applied mathematics, physics and zoology.

## Botany

The botany major is for students interested in various careers in the plant sciences. Students may pursue either the Ecology and Evolution Track or the Cellular and Molecular Track.

### Curriculum in Botany/Ecology and Evolution Track (BTNY, ECEV)

FR	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021) .....4	**	**
BIOL		1030	Organismal Biology and Lab (1031) .....4	**	4
ENGL	1100	1120	English Composition I & II .....3	3	3
MATH	1610	1620	Calculus I & II .....4	4	4
CHEM	1030	1040	Fundamentals of Chemistry I & II .....3	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....1	1	1
				15	15
<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....3	3	3
			Core History I & II .....3	3	3
			Core Social Science Group I & II .....3	3	3
			Core Fine Arts .....3	**	**
			Organic Chemistry I & II .....3	3	3
CHEM	2070	2080	Organic Chemistry I & II Lab .....1	1	1
CHEM	2071	2081	Organic Chemistry I & II Lab .....1	1	1
BIOL		3000	Genetics .....4	**	4
				16	17

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<b>JR</b>	PHYS	1500	1510	General Physics I & II .....	4	4
				Core Philosophy .....	**	3
	STAT		3010	Statistics for Engr. & Sci. ....	**	3
	BIOL	3030		Evolution & Systematics .....	3	**
	BIOL	3100		Plant Biology .....	3	**
	BIOL	3101		Plant Biology Lab .....	**	1
	BIOL		3060	Principles of Ecology .....	**	4
				Elective .....	2	3
					<b>13</b>	<b>17</b>
<b>SR</b>	BIOL	5300		Plant Anatomy & Development .....	4	**
	BIOL	4950		Undergraduate Seminar .....	1	**
	BIOL		5120	Systematic Botany .....	**	4
	BIOL	5130		Plant Physiology .....	4	**
	BIOL		5140	Plant Ecology .....	**	4
				Biology Elective .....	4	4
				Free Elective .....	**	2
	UNIV		4AA0	SM1 Undergraduate Graduation .....	**	0
					<b>13</b>	<b>14</b>

<b>JR</b>	ENGL	2210		World Literature II .....	3	**
				Core Social Science Group I .....	**	3
	MATH	2660		Topics in Linear Algebra .....	3	**
	BCHE	5180	5190	Biochemistry .....	3	3
	BCHE	5181	5191	Biochemistry Lab .....	1	1
	CHEM		3000	Chemical Literature .....	**	1
	CHEM	4070	4080	Physical Chemistry I & II .....	3	3
	CHEM	4071	4081	Physical Chemistry Lab I & II .....	1	1
				Elective .....	**	3
					<b>14</b>	<b>15</b>
<b>SR</b>				Core Social Science Group II .....	3	**
				Core Philosophy .....	**	3
				Core Fine Arts .....	3	**
	CHEM	5280		Computational Chemistry .....	4	**
	CHEM		4950	Undergraduate Seminar .....	**	1
	CHEM		4980	Undergraduate Research in Chemistry .....	**	3
	CHEM	4100	4110	Inorganic Chemistry I & II .....	3	3
	CHEM	4101	4111	Inorganic Chemistry Lab I & II .....	1	1
	CHEM		4130	Instrumental Analysis .....	**	3
	CHEM		4131	Instrumental Analysis Lab .....	**	1
				Elective .....	**	3
	UNIV		4AA0	SM1 Undergraduate Graduation .....	**	0
					<b>17</b>	<b>15</b>

**TOTAL HOURS — 120**

Biology Elective: see adviser for approved course listing.  
Students must either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in Botany/Cellular and Molecular Track (BTNY, CMLB)**

<b>FR</b>	<b>F</b>	<b>S</b>			<b>F</b>	<b>S</b>
BIOL	1020		Principles of Biology and Lab (1021) .....	4	**	
BIOL		1030	Organismal Biology and Lab (1031) .....	**	4	
ENGL	1100	1120	English .....	3	3	
MATH	1610	1620	Calculus I & II .....	4	4	
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3	
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1	
				<b>15</b>	<b>15</b>	
<b>SO</b>	ENGL	2200	2210	World Literature I & II .....	3	3
				Core Social Science Group I & II .....	3	3
				Core Fine Arts .....	3	3
				Core History I & II .....	3	3
	CHEM	2070	2080	Organic Chemistry I & II .....	3	3
	CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
	BIOL		3000	Genetics .....	**	4
					<b>16</b>	<b>17</b>
<b>JR</b>	PHYS	1500	1510	General Physics I & II .....	4	4
				Core Philosophy .....	**	3
	BIOL	3100		Plant Biology .....	3	**
	BIOL	3101		Plant Biology Lab .....	1	**
	BIOL		4100	Cell Biology .....	**	3
	BIOL	3200		General Microbiology .....	4	**
				Elective .....	3	4
					<b>15</b>	<b>14</b>
<b>SR</b>	BIOL	5300		Plant Anatomy & Development .....	4	**
	BIOL		5220	Molecular Genetics .....	**	3
	BIOL	4950		Undergraduate Seminar .....	1	**
	BIOL		5120	Systematic Botany .....	**	4
	BIOL		5130	Plant Physiology .....	**	4
				Biology Elective .....	**	4
	BCHE	5180	5190	Biochemistry I & II .....	3	3
	BCHE	5181	5191	Biochemistry I & II Lab .....	1	1
	UNIV		4AA0	SM1 Undergraduate Graduation .....	**	0
					<b>13</b>	<b>15</b>

**TOTAL HOURS — 120**

Biology Electives: see adviser for approved course listing.  
Students must either pass the computer competency test or take COMP 1000 as one of their electives.

**BS Curriculum in Chemistry**

<b>FR</b>	<b>F</b>	<b>S</b>			<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II .....	3	3	
MATH	1610	1620	Calculus I & II .....	4	4	
			Core History I & II .....	3	3	
CHEM	1110	1120	Gen. Chemistry for Scientists and Engineers I & II .....	3	3	
CHEM	1111	1121	Gen. Chem. Lab for Scientists and Engineers I & II .....	1	1	
				<b>14</b>	<b>14</b>	
<b>SO</b>	PHYS	1600	1610	Engineering Physics I & II .....	4	4
	ENGL		2200	World Literature I .....	**	3
	MATH	2630		Calculus III .....	4	**
	MATH		2650	Linear Differential Equations .....	**	3
	CHEM	2070	2080	Organic Chemistry I & II .....	3	3
	CHEM	2071	2081	Organic Chemistry Lab I & II .....	1	1
	CHEM	3050		Analytical Chemistry .....	3	**
	CHEM	3051		Analytical Chemistry Lab .....	1	**
				Elective .....	**	1
					<b>16</b>	<b>15</b>

**TOTAL HOURS — 120**

**Curriculum in Biochemistry (BCHM)**

<b>FR</b>	<b>F</b>	<b>S</b>			<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II .....	3	3	
MATH	1610	1620	Calculus I & II .....	4	4	
			Core History .....	3	**	
	BIOL		1020	Principles of Biology and Lab (1021) .....	**	4
	CHEM	1110	1120	Gen. Chemistry for Scientists and Engineers I & II .....	3	3
	CHEM	1111	1121	Gen. Chem. Lab for Scientists and Engineers I & II .....	1	1
					<b>14</b>	<b>15</b>
<b>SO</b>	PHYS	1600	1610	Engineering Physics I & II .....	4	4
				Core History .....	**	3
	MATH	2630		Calculus III .....	4	**
	MATH		2650	Linear Differential Equation .....	**	3
	CHEM	2070	2080	Organic Chemistry I & II .....	3	3
	CHEM	2071	2081	Organic Chemistry Lab I & II .....	1	1
	CHEM	3050		Analytical Chemistry .....	3	**
	CHEM	3051		Analytical Chemistry Lab .....	1	**
					<b>16</b>	<b>14</b>
<b>JR</b>	ENGL		2200	World Literature I .....	**	3
	BIOL	3200		General Microbiology .....	4	**
	BCHE	5180	5190	Biochemistry I & II .....	3	3
	BCHE	5181	5191	Biochemistry Lab .....	1	1
	BIOL		3000	Genetics .....	**	4
	CHEM		3000	Chemical Literature .....	**	1
	CHEM	4070	4080	Physical Chemistry I & II .....	3	3
	CHEM	4071	4081	Physical Chemistry Lab I & II .....	1	1
				Elective .....	**	3
					<b>15</b>	<b>16</b>
<b>SR</b>	ENGL	2210		World Literature II .....	3	**
				Core Fine Arts .....	**	3
				Core Philosophy .....	**	3
				Core Social Science Group I & II .....	3	3
				Undergraduate Seminar .....	1	**
	CHEM	4950		Undergraduate Research in Chemistry .....	3	**
	CHEM	4100		Inorganic Chemistry .....	3	**
	CHEM	4101		Inorganic Chemistry Lab .....	1	**
	CHEM		4130	Instrumental Analysis .....	**	3
	CHEM		4131	Instrumental Analysis Lab .....	**	1
				Elective .....	**	3
	UNIV		4AA0	SM1 Undergraduate Graduation .....	**	0
					<b>14</b>	<b>16</b>

**TOTAL HOURS — 120**

**BA Curriculum in Chemistry**

This curriculum provides a strong background in chemistry while allowing students to specialize in areas of interest. It is especially well suited for students leaning towards medical sciences while allowing more flexibility than that allowed in the American Chemical Society accredited biochemistry curriculum. The program allows for great versatility in the junior and senior years allowing the curriculum to be tailored to individual goals. The curriculum prepares students for professional careers in chemistry or biochemistry and advanced degree programs in chemistry, biochemistry and medically related fields.

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FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
MATH	1610	1620	Calculus I & II	4	4
BIOL	1020		Principles of Biology and Lab (1021)	4	**
BIOL		1030	Organismal Biology and Lab (1031)	**	4
CHEM	1110	1120	Gen. Chemistry for Scientists and Engineers I & II	3	3
CHEM	1111	1121	Gen. Chem. Lab for Scientists and Engineers I & II	1	1
			Elective	1	**
				<b>16</b>	<b>15</b>
<b>SO</b>					
ENGL		2200	World Literature I	**	3
PHYS	1500	1510	General Physics I & II	4	4
CHEM	2070	2080	Organic Chemistry I & II	3	3
CHEM	2071	2081	Organic Chemistry Lab I & II	1	1
CHEM	3050		Analytical Chemistry	3	**
CHEM	3051		Analytical Chemistry Lab	1	**
			Elective	3	3
				<b>15</b>	<b>14</b>
<b>JR</b>					
ENGL	2210		World Literature II	3	**
			Core Social Science Group I	**	3
			Core Fine Arts	**	3
			Foreign Language	4	4
BCHE	5180		Biochemistry	3	**
BCHE	5181		Biochemistry Lab	1	**
CHEM		3000	Chemical Literature	**	1
CHEM	3160		Survey of Physical Chemistry	3	**
			ROTC or Elective	3	3
				<b>17</b>	<b>14</b>
<b>SR</b>					
			Core History I & II	3	3
			Core Social Science Group II	**	3
			Core Philosophy	**	3
			Electives (Chem. Upper-div.)	4	4
			Electives	6	3
UNIV	4AA0		SM1 Undergraduate Graduation	**	0
				<b>16</b>	<b>13</b>

TOTAL HOURS – 120

Geography

This curriculum in geography promotes geographic literacy as an indispensable element in any educational program. It focuses on spatial relationships and the view of the Earth as the home of humankind. Geography readies students for careers in public services, consulting companies, state or federal agencies, utilities and other professions, as well as for graduate studies in geography.

Curriculum in Geography (GEOG)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
MATH	1610		Calculus I	4	**
			Core History I & II	3	3
			Core Philosophy	**	3
COMM		1000	Public Speaking	**	3
			Foreign Language	4	4
				<b>14</b>	<b>16</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II	3	3
			*Core Science Sequence I & II	4	4
			Core Fine Arts	3	**
GEOG	1010		Global Geography	3	**
			Core Social Science Group II	3	3
STAT		2510	Statistics for Biol. & Health Sci. OR	**	3
STAT		2010	Statistics for Behavioral and Social Sci	**	3
GEOG	2010		Cultural Geography	3	**
GEOG		2020	Physical Geography	**	3
				<b>16</b>	<b>16</b>
<b>JR</b>					
GEOG	3810		Cart and Graphics	4	**
COMP	1000		Personal Computer Applications	2	2
GEOG		5830	GIS	**	4
			GEOG Elective	3	3
			Social Science Elective	3	**
			Elective	7	4
				<b>17</b>	<b>13</b>
<b>SR</b>					
GEOG	5820		Remote Sensing	4	**
			GEOG Elective	6	6
			Electives	4	8
UNIV	4AA0		SM1 Undergraduate Graduation	**	0
				<b>14</b>	<b>14</b>

TOTAL HOURS – 120

Technical Elective: see adviser for approved course listing.  
 GEOG Elective: see adviser for approved course listing.  
 Students either pass the computer competency test or take COMP 1000 as one of their electives.

\*Core Science Sequence must come from the following list: BIOL 1020, 1030; CHEM 1030, 1031; CHEM 1040, 1041; CHEM 1110, 1111; CHEM 1120, 1121; GEOL 1100, 1110; PHYS 1500, 1510; PHYS 1600, 1610;

Geology

This curriculum provides a background in the geosciences and opportunity to specialize in an area of interest (i.e., environmental geology, paleontology) through elective major or related courses. It is designed for those interested in preparation for graduate studies or employment in the field of geology.

Curriculum in Geology (GEOL)

FR	F	S		F	S
CHEM	1030	1040	Fundamentals of Chemistry I & II	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1	1
			Core History I & II	3	3
ENGL	1100	1120	English Composition I & II	3	3
GEOL	1100		Physical Geology	4	**
GEOL		1110	Historical Geology	**	4
				<b>14</b>	<b>14</b>
<b>SO</b>					
BIOL	1020		Principles of Biology and Lab (1021)	4	**
BIOL		1030	Organismal Biology and Lab (1031)	**	4
MATH	1610	1620	Calculus I & II	4	4
ENGL	2200		World Literature I	3	**
GEOL	2010		Min & Opt Cryst.	5	**
GEOL		2050	Ign & Met Petrol.	**	4
			Elective	**	3
				<b>16</b>	<b>15</b>
<b>JR</b>					
PHYS	1500	1510	General Physics I & II	4	4
			Core Social Science Group I	**	3
			Core Fine Arts	3	**
			Technical Elective	3	**
GEOL	3200		Principle Paleontology	3	**
GEOL		3400	Structural Geology	**	4
			GEOL Elective	3	4
				<b>16</b>	<b>15</b>
<b>SUMMER</b>					
GEOL	3650		Field Camp	6	6
<b>SR</b>					
PHIL			1010 or 1020	3	**
ECON		2020	Microeconomics	**	3
ENGL		2210	World Literature II	**	3
			Technical Elective	4	**
GEOL	4010		Sed Petrol.	3	**
GEOL		4110	Stratigraphy	**	3
GEOL		4740	Geology Senior Seminar	**	1
			GEOL Elective	4	4
			Elective	**	3
UNIV	4AA0		SM1 Undergraduate Graduation	**	0
				<b>14</b>	<b>17</b>

TOTAL HOURS – 126

Technical Elective - see adviser for approved course listing.  
 GEOL Elective - see adviser for approved course listing.  
 Students either pass the computer competency test or take COMP 1000 as one of their electives.

Clinical Laboratory Sciences

The Division of Clinical Laboratory Sciences has two curricula leading to the degree of bachelor of science in laboratory technology or bachelor of science in medical technology. These curricula prepare students for medical laboratory careers in fields such as public health, bacteriology, environmental testing, industrial quality control, research and forensic science. Graduates may choose to qualify as certified medical technologists, which is accomplished by successfully completing a 12-month training period (rotating hospital internship) in an accredited school of medical technology and passing a national certifying examination.

Curriculum in Laboratory Technology (LABT)

FR	F	S		F	S
BIOL		1020	Principles of Biology and Lab (1021)	**	4
ENGL	1100	1120	English Composition I & II	3	3
HIST	1010	1020	World History I & II	3	3
MATH	1610		Calculus I	4	**
CHEM	1110	1120	Gen. Chem. for Scientists and Engineers I & II	3	3
CHEM	1111	1121	Gen. Chem. Lab for Scientists and Engineers I & II	1	1
LABT	1010		Orientation	1	**
STAT		2510	Statistics for Biology & Health Sciences	**	3
				<b>15</b>	<b>17</b>

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<b>SO</b>				
ENGL	2200	2210	World Literature I & II.....	3 3
PHIL	1030		Ethics & the Health Sciences.....	3 **
BIOL	2500	2510	Human Anatomy & Physiology I & II.....	4 4
BIOL		3200	General Microbiology.....	** 4
CHEM	2070	2080	Organic Chemistry I & II.....	3 3
CHEM	2071	2081	Organic Chemistry Lab I & II.....	1 1
				<b>14 15</b>

<b>JR</b>				
			Core Fine Arts.....	** 3
			Core Social Science Group I.....	** 3
BIOL	4200		Clinical Microbiology.....	4 **
BIOL		3000	Genetics.....	** 4
BCHE		5180	Biochemistry I.....	** 3
LABT	4010		Hematology.....	5 **
CHEM	3050		Analytical Chemistry.....	3 **
CHEM	3051		Analytical Chemistry Lab.....	1 3
			Electives.....	3 3
				<b>16 16</b>

<b>SR</b>				
			Core Social Science Group II.....	3 **
			Technical Electives **.....	6 4
LABT	**	4250	Clinical Biochemistry Instrument.....	** 4
BIOL	5500		Immunology.....	3 **
BIOL	5501		Immunology Lab.....	2 **
LABT		4050	Clinical Immunohematology/Parasit.....	** 5
UNIV		4AA0	SM1 Undergraduate Graduation.....	** 0
				<b>14 13</b>

**TOTAL HOURS – 120**

\*\* Technical Elective: see adviser for approved course listing.

**Curriculum in Medical Technology (MEDT)**

<b>FR</b>	<b>F</b>	<b>S</b>	<b>F</b>	<b>S</b>
BIOL		1020	Principles of Biology and Lab (1021).....	** 4
ENGL	1100	1120	English Composition I & II.....	3 3
HIST	1010	1020	World History I & II.....	3 3
MATH	1610		Calculus I.....	4 **
CHEM	1110	1120	General Chemistry for Scientists and Engineers I & II...3	3
CHEM	1111	1121	General Chemistry Lab for Scientists and Engineers I & II	1
LABT		1010	Orientation.....	1 **
			Elective.....	** 3
				<b>15 17</b>

<b>SO</b>				
ENGL		2200	World Literature I.....	** 3
PHIL	1030		Ethics & the Health Sciences.....	3 **
PHYS	1500		General Physics I.....	4 **
			Core Social Science Group I.....	** 3
BIOL	2500	2510	Human Anatomy & Physiology I & II.....	4 4
CHEM	2070	2080	Organic Chemistry I & II.....	3 3
CHEM	2071	2081	Organic Chemistry Lab I & II.....	1 1
				<b>15 14</b>

<b>JR</b>				
ENGL		2210	World Literature II.....	** 3
			Core Fine Arts.....	3 **
BCHE	5180	5190	Biochemistry I & II.....	3 3
STAT	2510		Statistics for Biology & Health Sciences.....	3 3
BIOL	3000		Genetics.....	4 **
BIOL		3200	General Microbiology.....	** 4
CHEM	3050		Analytical Chemistry.....	3 **
CHEM	3051		Analytical Chemistry Lab.....	1 **
				<b>14 13</b>

<b>SR</b>				
			Core Social Science Group II.....	** 3
BIOL	4200		Clinical Microbiology.....	4 **
BIOL		5500	Immunology.....	3 **
BIOL		5501	Immunology Lab.....	2 **
LABT	4010		Hematology.....	5 **
LABT		4050	Clinical Immunohematology/Parasit.....	** 5
LABT		4250	Clinical Biochemistry/Instrument.....	** 4
			Elective.....	** 3
UNIV		4AA0	SM1 Undergraduate Graduation.....	** 0
				<b>14 15</b>

Professional Year  
Degree is granted upon successful completion of a clinical internship at an approved school of medical technology affiliated with Auburn University. Clinical Internship - 22 hrs.

**TOTAL HOURS – 139**

**Department of Mathematics and Statistics**

The department of Mathematics and Statistics offers degree curricula in mathematics and in applied mathematics (with its various options), as well as minors and a minor in statistics. Majors acquire a firm foundation in mathematics preparing them for further study, or for careers in mathematics or statistics, and related fields. For a minor in MATH or STAT see the "Minors" heading earlier in this section.

**Mathematics**

This curriculum provides students with a general background in Mathematics preparing them for graduate studies in Mathematics, or careers that require mathematical knowledge and problem solving skills, and is well suited for students who wish to pursue career in teaching Mathematics in a university/college, or who desire more flexibility, r emphasis in liberal arts.

**Curriculum in Mathematics (MATH)**

<b>FR</b>	<b>F</b>	<b>S</b>	<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3 3
			Core Philosophy.....	3 **
			Core History I & II.....	3 3
			Core/Natural Science.....	4 4
MATH	1610	1620	Calculus I & II.....	4 4
COMP		1200	(see adviser before selecting section).....	** 2
				<b>17 16</b>

<b>SO</b>				
			Core Social Science.....	3 **
ENGL	2200	2210	World Literature I & II.....	3 3
MATH	2630		Calculus III.....	4 **
MATH		2650	Linear Differential Equations.....	** 3
MATH	2660		Topics in Linear Algebra.....	3 **
MATH		3100	Introduction to Advanced Math.....	** 3
STAT		3600	Probability & Statistics.....	** 3
			Elective.....	3 3
				<b>16 15</b>

<b>JR</b>				
			Core Fine Arts.....	** 3
			Core Social Science.....	3 **
			Foreign Language (see adviser).....	4 4
MATH	5200	5210	Analysis I & II.....	3 3
MATH	5310	5320	Introduction to Abstract Algebra I & II.....	3 3
			Elective.....	3 3
				<b>16 16</b>

<b>SR</b>				
			Applied Math Elective.....	3 **
MATH	5500		Introduction to Topology.....	3 **
			Math Elective.....	3 9
			Elective.....	3 3
UNIV		4AA0	SM1 Undergraduate Graduation.....	** 0
				<b>12 12</b>

**TOTAL HOURS - 120**

See our web page

**Applied Mathematics**

The Department of Mathematics and Statistics offers three options in the field of Applied Mathematics. The option in Applied Mathematics is suitable for students who are preparing for graduate work in mathematics, or applied mathematics, as well as for those anticipating careers which are supported by significant applied mathematics such as engineering, physical sciences, or computer science, and the more recently mathematicized fields of biological, behavioral, or managerial sciences.

The option in Discrete Mathematics prepares students for graduate work in mathematics or theoretical computer science, and for careers in industry supported by discrete mathematics dealing with problems in graph theory, operations research, discrete optimization, computer science, communications and information sciences.

The option in Actuarial Science prepares students for a career in the insurance industry and in other businesses relying on the expertise of actuaries, but is at the same time flexible enough to allow its graduates to enter graduate programs in mathematics and related areas.

Students should consult the departmental advisor to determine appropriate technical electives for the emphasis of their choice.

**Option in Applied Mathematics (AMTH)**

<b>FR</b>	<b>F</b>	<b>S</b>	<b>F</b>	<b>S</b>
ENGL	1100	1120	English Composition I & II.....	3 3
			Core Philosophy.....	3 **
			Core History I & II.....	3 3
			Core/Natural Science.....	4 4
MATH	1610	1620	Calculus I & II.....	4 4
COMP		1200	(see adviser before selecting section).....	** 2
				<b>17 16</b>

<b>SO</b>				
			Core Social Science I.....	3 **
ENGL	2200	2210	World Literature I & II.....	3 3
MATH	2630		Calculus III.....	4 **
MATH		2650	Linear Differential Equations.....	** 3
MATH	2660		Topics in Linear Algebra.....	3 **
MATH		3100	Introduction to Advanced Math.....	** 3

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STAT	3600	Probability & Statistics I .....	**	3	STAT	3600	Probability & Stats I .....	3	**
		Interdisciplinary Elective.....		3	MATH	4820	Actuarial Seminar Probability .....	**	3
				<b>16</b>	MATH	4790	Actuarial Seminar Finance .....	3	**
<b>JR</b>		Core Fine Arts .....	**	3			Math Elective.....	**	3
		Core Social Science II .....	**	3			Electives .....	4	4
MATH	5200	Analysis I & II .....	3	3	<b>SR</b>			<b>16</b>	<b>16</b>
MATH	5630	Numerical Analysis I & II .....	3	3	FINC	3630	Advanced Business Finance .....	3	**
		Interdisciplinary Elective.....	3	3	MATH	5000	Modeling .....	3	**
		Electives .....	4	4	MATH	5800	Actuarial Mathematics I & II .....	3	3
				<b>16</b>			Math Elective.....	**	6
<b>SR</b>				<b>16</b>			Electives .....	3	3
MATH	5000	Math Modeling .....	**	3	UNIV	4AA0	SM1 Undergraduate Graduation .....	**	0
MATH	5670	Probability & Stochastic Proc I.....	**	3					<b>12</b>
		Math Elective.....	**	9					<b>12</b>
		Interdisciplinary Elective.....	**	3					
		Elective .....	**	3					
UNIV	4AA0	SM1 Undergraduate Graduation.....	**	0					
				<b>12</b>					

**TOTAL HOURS - 120**

For definitions see our web page and click on "curriculum" models

**Option in Applied Discrete Mathematics (ADSM)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core Science (for science majors) .....	4	4
			Core History I & II.....	3	3
			Core Philosophy .....	3	**
COMP		1200	Introduction to Computer Engr. & Sci .....	**	2
MATH	1610	1620	Calculus I & II.....	4	4
				<b>17</b>	<b>16</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....	3	3
			Core Social Science Group I .....	3	**
COMP	2000		Programming with HTML & Java .....	3	**
COMP		3000	Object Oriented Program Engr. & Sci.....	**	3
MATH	2660		Topics in Linear Algebra.....	3	**
MATH		3710	Discrete Math .....	**	3
MATH	2630		Calculus III .....	4	**
MATH		2650	Linear Differential Equations .....	**	3
STAT		3600	Probability & Statistics I .....	**	3
				<b>16</b>	<b>15</b>
<b>JR</b>					
			Core Social Science Group II .....	3	**
			Core Fine Arts .....	**	3
MATH	5750		Graph Theory .....	3	**
MATH		5330	Computational Algebra .....	**	3
MATH	5310		Algebra I .....	3	**
			Analysis Elective.....	**	3
			Elective .....	4	4
			Interdisciplinary Elective.....	3	3
				<b>16</b>	<b>16</b>
<b>SR</b>					
			Algebra/Linear Algebra Elective .....	3	**
			Discrete Math Electives.....	6	3
			Elective .....	**	3
			Interdisciplinary Elective.....	**	3
			Math Elective.....	**	6
UNIV	4AA0		SM1 Undergraduate Graduation.....	**	0
				<b>12</b>	<b>12</b>

**TOTAL HOURS - 120**

See our web page

**Option in Actuarial Science (ACTU)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II.....	3	3
			Core Philosophy .....	3	**
			Core History I & II.....	3	3
			Core Science I & II .....	4	4
COMP		1200	Introduction to Computer Engr. & Sci .....	**	2
MATH	1610	1620	Calculus I & II .....	4	4
				<b>17</b>	<b>16</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II.....	3	3
ECON	2020	2030	Prin. of Microeconomics & Macroeconomics .....	3	3
ACCT	2910		Fundamentals of Accounting .....	3	**
MATH		2790	Mathematics of Interest Theory .....	**	3
MATH	2630		Calculus III .....	4	**
MATH		2650	Linear Differential Equations .....	**	3
MATH	2660		Topics in Linear Algebra.....	3	**
* MATH		3100	Introduction to Advanced Math .....	**	3
				<b>16</b>	<b>15</b>
<b>JR</b>					
			Core Fine Arts .....	3	**
			Core Social Science Group I .....	3	**
FINC		3610	Principles of Business Finance .....	**	3
			Statistics Requisite.....	**	3

**TOTAL HOURS - 120**

Core Science I/II: One of the sequences Engineering Physics I/II, Principles of Biology/Organismal Biology, Fundamentals of Chemistry I/II, Physical/Historical Geology

Math Electives: Courses designated MATH or ADMH at the level of 4000 or higher; no more than one 4000-level course. Subject to advisor's approval.

Statistics Requisite: Any course that will serve as the statistics prerequisite for FINC-3630. See advisor for approved courses.

Coherence Requirement: Course choices for Core Science and Math Electives, together with the required interdisciplinary courses, must constitute a coherent plan of study, chosen with advisor's approval.

**Microbial, Cellular and Molecular Biology**

The Microbial, Cellular and Molecular Biology major provides students with an excellent foundation in the areas of microbiology, cellular and molecular biology that emphasizes the understanding of life at the cellular and molecular level. The choice of a formal option within the major allows students to concentrate on a particular area of interest. Each option provides a wide variety of courses and opportunities for undergraduate research. Students selecting the Microbiology option will be well prepared for postgraduate work or career advancement in a number of areas including food, environmental and medical microbiology. Students selecting the Cell and Molecular Biology option would also be well prepared for postgraduate study or career advancement in any area of eukaryotic cell or molecular biology. Both options provide excellent preparation for students interested in biotechnology or professional programs in the health sciences.

**Curriculum in Microbiology (MCMB)**

FR	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021) .....	4	**
BIOL		1030	Organismal Biology and Lab (1031) .....	**	4
ENGL	1100	1120	English Composition I & II.....	3	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
MATH	1610	1620	Calculus I & II .....	4	4
				<b>15</b>	<b>15</b>
<b>SO</b>					
ENGL	2200	2210	World Literature I & II .....	3	3
PHYS	1500	1510	General Physics I & II .....	4	4
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
BIOL	3000		Genetics .....	4	**
BIOL		3200	General Microbiology .....	**	4
				<b>15</b>	<b>15</b>
<b>JR</b>					
			Core Fine Arts .....		3
			Core History I & II .....	3	3
BIOL		4100	Cell Biology .....	**	3
BCHE	5180	5190	Biochemistry I & II.....	3	3
BCHE	5181		Biochemistry I Lab.....	1	**
BIOL	4200		Clinical Micro.....	4	**
BIOL	5260		Prokaryotic Mol. Gene.....	3	**
BIOL		5521	Recombinant DNA Lab .....	**	2
			Electives .....		2
				<b>14</b>	<b>16</b>
<b>SR</b>					
			Core Philosophy .....	3	**
			Core Social Science Group I & II .....	3	3
BIOL	5250		Micro. Evo. & Diversity .....	4	**
BIOL	4950		Undergraduate Seminar .....	**	1
BIOL	5210		Microb. Phys .....	**	3
			MICR Electives .....	6	3
			MCMB Electives.....		6
UNIV		4AA0	SM1 Undergraduate Graduation .....	**	0
				<b>16</b>	<b>16</b>

**TOTAL HOURS - 122**

Students either pass the computer competency test or take COMP 1000 as one of their electives.

Biology Electives: See advisor for approved course listing.

College of Sciences and Mathematics

**Curriculum in Cell and Molecular Biology (MCCM)**

FR	F	S	F	S
BIOL	1020		Principles of Biology and Lab (1021)	4
BIOL		1030	Organismal Biology and Lab (1031)	**
ENGL	1100	1120	English Composition I & II	3
CHEM	1030	1040	Fundamentals of Chemistry I & II	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1
MATH	1610	1620	Calculus I & II	4
				<b>15</b>
<b>SO</b>				<b>15</b>
ENGL	2200	2210	World Literature I	3
PHYS	1500	1510	General Physics I & II	4
CHEM	2070	2080	Organic Chemistry I & II	3
CHEM	2071	2081	Organic Chemistry I & II Lab	1
BIOL	3000		Genetics	4
BIOL		3200	General Microbiology	**
				<b>15</b>
<b>JR</b>				<b>15</b>
			Core History I & II	3
			Core Fine Arts	**
BIOL	4100		Cell Biology	3
BIOL	4101		Cell Biology Lab	2
			CMBL Elective	**
BIOL		5220	Introduction to Molecular Genetics	**
BIOL		5521	Gene Expression & Rec DNA Lab	**
BCHE	5180	5190	Biochemistry I & II	3
BCHE	5181		Biochemistry I Lab	1
			Elective	2
				<b>15</b>
<b>SR</b>				<b>16</b>
			Social Science Core I & II	3
			Evolution Electives	3
			CMBL Electives	**
BIOL		4950	Undergraduate Seminar	1
			Biodiversity Electives	3
			Physiology Electives	**
			MCMB Electives	6
			Core Philosophy	3
UNIV		4AA0	SM1 Undergraduate Graduation	**
				<b>15</b>

**TOTAL HOURS - 122**

Biology Electives: see adviser for approved course listing.  
Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Physics**

Physics majors acquire a firm foundation for careers in physics and related fields and excellent preparation for further study. Through the judicious use of electives, this curriculum provides not only a thorough understanding of physics, but also the ability to solve problems in other fields of interest to the student.

**Curriculum in Physics (PHYS)**

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II	3
MATH	1610	1620	Calculus I & II OR	4
MATH	1710	1720	Calc Eng. Science I & II	4
PHYS	1600	1610	Engineering Physics I & II OR	4
PHYS	1607	1617	Honors Physics I & II	**
			Core Philosophy	3
			Fine Art	**
				<b>14</b>
<b>SO</b>				<b>14</b>
ENGL	2200	2210	World Literature I & II	3
COMM	1000		Public Speaking	**
			Core History I & II	3
MATH	2630/2730		Calculus III or Calc. Eng. Science III	**
MATH		2650	Differential Equations	**
PHYS	2200		Intro. Quantum Physics & Relativity	3
PHYS		2300	Physics Laboratory Skills	**
PHYS		2100	Intermediate Mechanics	**
				<b>16</b>
<b>JR</b>				<b>14</b>
			Core Social Science Group I & II	3
			Professional Elective*	**
PHYS	3100		Intermediate E & M	3
PHYS		3200	Statistical Thermodynamics	**
PHYS	4100		Fundamentals of Quantum Mech	3
			Sci Elective-Chem/Biology/Geol	4
			Electives	3
				<b>16</b>
<b>SR</b>				<b>16</b>
PHYS	4200		Fund Experiments in Physics	2
			Professional Elective *	**
			Physics Elective	3

UNIV	4AA0	Electives	9	6
		SM1 Undergraduate Graduation	**	0
			<b>14</b>	<b>16</b>

**TOTAL HOURS - 120**

\* See adviser for approved courses.

**Zoology**

This curriculum prepares students for graduate study and a variety of careers in animal biology. The student has the choice of several options depending on the student's particular interest.

**Curriculum in Zoology (ZOOL)**

FR	F	S	F	S
BIOL	1020		Principles of Biology and Lab (1021)	4
BIOL		1030	Organismal Biology and Lab (1031)	**
CHEM	1030	1040	Fundamentals of Chemistry I & II	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1
ENGL	1100	1120	English Composition I & II	3
			Core History I & II	3
				<b>14</b>
<b>SO</b>				<b>14</b>
MATH	1610	1620	Calculus I & II	4
ENGL	2200	2210	World Literature I & II	3
			Core Social Science, Group I	**
CHEM	2070	2080	Organic Chemistry I & II	3
CHEM	2071	2081	Organic Chemistry I & II Lab	1
BIOL	3000		Genetics	4
BIOL		3030	Evolution & Systematics	**
				<b>15</b>
<b>JR</b>				<b>17</b>
PHYS	1500	1510	General Physics I & II	4
			Core Social Science, Group II	**
			Core Fine Arts	**
COMM	1000		Public Speaking	3
BIOL	3060		Ecology	**
BIOL		4100	Cell Biology	**
BIOL		5240	Animal Physiology	**
BIOL			4010 or 4020	4
			Elective	**
				<b>18</b>
<b>SR</b>				<b>17</b>
			Core Philosophy	**
STAT	3010		Statistics for Engr. & Sci	**
			Biology Elective	11
UNIV		4AA0	SM1 Undergraduate Graduation	**
				<b>14</b>

**TOTAL HOURS - 123**

Biology Electives: see adviser for approved course listing.  
Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Zoology/Cellular Biology/Physiology Track (ZOOL, CBPS)**

FR	F	S	F	S
BIOL	1020		Principles of Biology and Lab (1021)	4
BIOL		1030	Organismal Biology and Lab (1031)	**
CHEM	1030	1040	Fundamentals of Chemistry I & II	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1
ENGL	1100	1120	English Composition I & II	3
			Core History I & II	3
			Core Philosophy	**
				<b>14</b>
<b>SO</b>				<b>17</b>
MATH	1610	1620	Calculus I & II	4
ENGL	2200	2210	World Literature I & II	3
			Core Social Science, Group I	**
CHEM	2070	2080	Organic Chemistry I & II	3
CHEM	2071	2081	Organic Chemistry I & II Lab	1
BIOL	3000		Genetics	4
BIOL		3030	Evolution & Systematics	**
				<b>15</b>
<b>JR</b>				<b>17</b>
PHYS	1500	1510	General Physics I & II	4
			Core Social Science	**
BIOL		3060	Ecology	**
BIOL	4100		Cell Biology	**
BIOL	4101		Cell Biology Lab	**
BIOL		4410	Vertebrate Development	5
BIOL			4010 or 4020	4
			Elective	**
				<b>16</b>
<b>SR</b>				<b>16</b>
			Core Fine Arts	**
COMM	1000		Public Speaking	**
STAT	3010		Statistics for Engr. & Sci	**
BIOL		5240	Animal Physiology	**
			Biology Elective	11
UNIV		4AA0	SM1 Undergraduate Graduation	**
				<b>14</b>

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**TOTAL HOURS - 123**

Biology Electives: see adviser for approved course listing.  
Students either pass the computer competency test or take COMP 1000 as one of their electives.

Anat/Cell Phys Elective .....	4	3
Diversity Elective .....	4	4
SM1 Undergraduate Graduation .....	**	0
	<b>14</b>	<b>15</b>

**Zoology/Conservation & Biodiversity Track (ZOOL, CONS)**

FR	F	S	F	S
BIOL	1020		Principles of Biology and Lab (1021) .....	4 **
BIOL		1030	Organismal Biology and Lab (1031) .....	** 4
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3 3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1 1
ENGL	1100	1120	English Composition I & II .....	3 3
MATH	1610		Calculus I .....	4 **
			Core History .....	** 3
			Core Social Science .....	** 3
				<b>15 17</b>
<b>SO</b>				
ENGL	2200	2210	World Literature I & II .....	3 3
			Core History .....	3 **
			Core Philosophy .....	** 3
			Core Social Science .....	** 3
			Core Fine Arts .....	3 **
BIOL		3000	Genetics .....	** 4
BIOL		3060	Ecology .....	** 4
CHEM	2070		Organic Chemistry I .....	3 **
PHYS		1500	General Physics .....	** 4
				<b>15 18</b>
<b>JR</b>				
BIOL	3030		Evolution & Systematics .....	** 3
BIOL	5090		Conservation Biology .....	3 **
BIOL	4010		Invert. Biodiversity .....	4 **
BIOL		5240	Animal Physiology .....	** 4
BIOL	4100		Cell Biology .....	** 3
			Diversity Elective .....	** 4
BIOL	4020		Vertebrate Biodiversity .....	4 **
			Elective .....	** 3
				<b>14 14</b>
<b>SR</b>				
BIOL		5120	Systematic Botany .....	** 4
WILD	3280		Principles of Wildlife Management .....	3 **
WILD	3281		Principles of Wildlife Management Lab .....	1 **
			Diversity Elective .....	4 4
			Ecology Elective .....	3 **
STAT		3010	Statistics for Engr & Sci .....	** 3
ENTM	3040		General Entomology .....	4 **
COMM		1000	Public Speaking .....	** 3
UNIV		4AA0	SM1 Undergraduate Graduation .....	** 0
				<b>15 14</b>

**TOTAL HOURS - 122**

Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Zoology/Ecology, Evolution & Behavior Track (ZOOL, ECEB)**

FR	F	S	F	S
BIOL	1020		Principles of Biology and Lab (1021) .....	4 **
BIOL		1030	Organismal Biology and Lab (1031) .....	** 4
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3 3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1 1
ENGL	1100	1120	English Composition I & II .....	3 3
MATH	1610	1620	Calculus I & II .....	4 4
			Core Social Science .....	** 3
				<b>15 18</b>
<b>SO</b>				
ENGL	2200	2210	World Literature I & II .....	3 3
			Core History .....	3 **
			Core Philosophy .....	** 3
			Core Social Science .....	3 **
			Core Fine Arts .....	3 **
BIOL		3000	Genetics .....	** 4
CHEM	2070		Organic Chemistry .....	3 **
STAT		3010	Stats for Eng. & Sci. .....	** 3
PHYS		1500	General Physics .....	** 4
				<b>15 17</b>
<b>JR</b>				
BIOL	4100		Cell Biology .....	3 **
COMM	1000		Public Speaking .....	3 **
STAT	3010		Statistics for Engr. & Sci. .....	3 **
BIOL		3030	Evolution & Systematics .....	** 3
BIOL	3060		General Ecology .....	** 4
BIOL	4020		Vertebrate Biodiversity .....	** 4
BIOL		5240	Animal Physiology .....	** 4
BIOL	4010		Invert Biodiversity .....	4 **
			Elective .....	** 3
				<b>17 14</b>
<b>SR</b>				
BIOL	5650		Core History .....	3 **
BIOL		5140	Ethology .....	** 4
			Plant Ecology .....	** 4
			Ecology Elective .....	3 **

**TOTAL HOURS - 122**

Anat/Cell/Phy Elective: see adviser for approved course listing.  
Diversity Elective: see adviser for approved course listing.  
Students either pass the computer competency test or take COMP 1000 as one of their electives.

**Curriculum in Marine Biology (MARB)**

FR	F	S	F	S
BIOL	1020		Principles of Biology and Lab (1021) .....	4 **
BIOL		1030	Organismal Biology and Lab (1031) .....	** 4
ENGL	1100	1120	English Composition I & II .....	3 3
			Core Social Science Group I .....	** 3
MATH	1610		Calculus I .....	4 **
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3 3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1 1
				<b>15 14</b>
<b>SO</b>				
BIOL		3040	Biology of Marine Systems .....	** 3
HIST			Core History I .....	3 **
PHYS	1500	1510	General Physics I & II .....	4 4
ENGL	2200		World Literature I .....	3 **
BIOL	3000		Genetics .....	4 **
BIOL		3060	Ecology .....	** 4
CHEM		2030	Survey of Organic Chem. .....	** 3
				<b>14 14</b>
			SUMMER MARINE LAB *** .....	8 **
<b>JR</b>				
HIST		1020	Core History II .....	** 3
BIOL	3030		Evolution & System .....	3 **
BIOL	4010		Invert. Biodiversity .....	4 **
BIOL		3200	General Microbiology .....	** 4
BIOL		4100	Cell Biology .....	** 3
STAT		2510	Statistics for Biol/Health .....	** 3
ENGL	2210		World Literature II .....	3 **
BCHE	3200		Prin. Of Biochemistry .....	3 **
				<b>13 13</b>
			SUMMER MARINE LAB .....	8 **
<b>SR</b>				
			Core Fine Arts .....	3 **
			Core Philosophy .....	3 **
			BIOL Physiology Elective .....	4 **
			BIOL Ecology & Evol. Elective .....	3 **
BIOL		4950	Undergraduate Seminar .....	** 1
			Biology Elective .....	** 3
			Molecular Biology Elective .....	** 3
			Core Group Social Science II .....	** 3
UNIV		4AA0	SM1 Undergraduate Graduation .....	** 0
				<b>13 10</b>

**TOTAL HOURS - 122**

Summer Marine Lab - see adviser for approved course listing.  
Biology Electives - see adviser for approved course listing.

**Curriculum in Biomedical Sciences**

FR	F	S	F	S
ENGL	1100	1120	English Composition I & II .....	3 3
MATH	1610		Calculus I .....	4 **
HIST		1010	World History I .....	** 3
CHEM	1110	1120	General Chemistry I & II .....	3 3
CHEM	1111	1121	General Chemistry I & II Lab .....	1 1
SCMH	1890		Prehealth Orientation .....	** 1
BIOL	1020		Principles of Biology and Lab (1021) .....	4 **
BIOL		1030	Organismal Biology and Lab (1031) .....	** 4
				<b>16 14</b>
<b>SO</b>				
PHYS	1500	1510	General Physics I & II .....	4 4
ENGL	2200	2210	World Literature I & II .....	3 3
HIST	1020		World History .....	3 **
CHEM	2070	2080	Organic Chemistry I & II .....	3 3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1 1
COMM	1000		Public Speaking .....	** 3
BIOL		3000	Genetics .....	** 4
				<b>17 15</b>
<b>JR</b>				
PHIL		1030	Ethics & the Health Sciences .....	** 3
PSYC	2010		Introduction to Psychology .....	3 **
			Core Fine Arts .....	3 **
			Core Social Science Group II .....	** 3
STAT	2510		Statistics for Biology & LS .....	3 **
BIOL	3200		Microbiology .....	4 **
BIOL		4100	Cell Biology .....	** 3
BIOL		4101	Cell Biology Lab .....	** 2

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BIOL	4410	Vertebrate Development.....	5	**			
		Professional Elective .....	**	4			
			<b>18</b>	<b>15</b>			
<b>SR</b>							
BCHE	5180	5190	Biochemistry I & II .....	3	3		
BIOL	3010		Comparative Anatomy OR BIOL 4000 Histology .....	4	**		
BIOL	5500		Immunology.....	3	**		
BIOL		5600	Mammalian Physiology .....	**	6		
BIOL	4980		Undergraduate Research .....	2	**		
			Electives .....	2	4		
UNIV		4AA0	SM1 Undergraduate Graduation.....	**	0		
				<b>14</b>	<b>13</b>		

**TOTAL HOURS - 122**

Student must either pass the computer competency test or take COMP 1000 as one of their electives.

**Pre-Health Professional Curricula**

Pre-health professional curricula are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-pharmacy and pre-veterinary medicine. Advisors are available to guide the students concerning admissions requirements to the professional schools. The department in which students major will advise them where applicable. Completion of these curricula does not assure admission to a professional school. Competition for admission to professional schools is keen; the number of qualified applicants exceeds the number of places available.

**Pre-Dentistry and Pre-Medicine**

These programs are designed to prepare students for medical and dental schools and lead to a bachelor of science in one of several majors offered through the college. The requirements are very exacting and demand high scholastic competence and performance.

Most American dental and medical schools recommend that applicants have two semesters of freshman biology, general chemistry, organic chemistry, and physics with labs; (2) breadth in the educational experience; and (3) in-depth experience in a single discipline. Auburn University students complete these recommendations by enrolling in a core of courses shown in the curriculum model below. Each student also declares a major; the most common majors selected by students in the College of Sciences and Mathematics are biomedical sciences, chemistry, microbiology, physics and zoology. Students should confer with the COSAM pre-health advisors for specific course requirements since these can vary from school to school. Students may choose to major in a curriculum in another college or school, but they should meet with the Director of Pre-Health Programs for assistance with preparing to apply.

Early in the junior year, students should attend the mandatory meetings concerning the application process that are conducted by the chairman of the Premedical Professions Advisory Committee (PPAC). Also, students in pre-dentistry or pre-medicine should take the Dental Admission Test or the Medical College Admission Test at least a year before the date of entry to professional school and submit applications to the professional schools of their choice at that time.

**Curriculum in Pre-Dentistry and Pre-Medicine**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1610		Calculus I.....	4	**
HIST		1010	World History I.....	**	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
SCMH	1890		Pre-Health Orientation .....	1	**
BIOL	1020		Principles of Biology and Lab (1021) .....	4	**
BIOL		1030	Organismal Biology and Lab (1031) .....	**	4
COMP		1000	Personal Computer Application .....	**	2
				<b>16</b>	<b>16</b>
<b>SO</b>					
PHYS	1500	1510	General Physics I & II .....	4	4
HIST	1020		World History II .....	3	**
ENGL	2200	2210	Core Literature I & II .....	3	3
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
COMM	1000		Public Speaking .....	3	**
BIOL		3000	Genetics .....	**	4
				<b>17</b>	<b>15</b>
<b>JR</b>					
PHIL		1030	Ethics & the Health Sciences .....	**	3
PSYC	2010		Introduction to Psychology .....	3	**
			Core Social Science Group II .....	**	3
			Core Fine Arts .....	**	3
STAT	2510		Statistics for Biology & Life Sciences.....	3	**
BIOL	3200		Microbiology.....	4	**
BIOL		4101	Cell Biology Lab .....	**	2

BIOL		4100	Cell Biology .....	**	3
BIOL	4410		Vertebrate Development.....	5	**
				<b>18</b>	<b>11</b>

At the end of the sophomore year, or in the fall of the junior year, the student must declare a major.

Student must either pass the computer competency test or take COMP 1000 as one of his/her electives.

**Pre-Optometry**

This program leads to a bachelor of science and prepares students for the rigorous demands of American optometry schools.

Students must select a major; the most common majors selected by students in the College of Sciences and Mathematics are biomedical sciences, chemistry, microbiology, physics and zoology. Students should confer with advisors in the college for specific course requirements since these can vary from school to school. Students may also choose to major in a curriculum in another college or school, but should work with the Director of Pre-Health Programs in COSAM for assistance with preparing to apply.

Pre-optometry students should review the websites of the optometry schools of their choice during the freshman year and determine any special admission requirements of those schools. The prerequisite courses for most U.S. optometry schools are listed in the curriculum model below, either as required courses or as electives. Early in the junior year, students should attend the mandatory meetings concerning the application process that are conducted by the chairman of the Premedical Professions Advisory Committee (PPAC). Students should take the Optometry Admission Test and complete an official application for admission to the optometry schools of their choice about a year in advance of the expected date of matriculation.

**Curriculum in Pre-Optometry (POPT)**

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II .....	3	3
MATH	1610		Calculus I.....	4	**
HIST		1010	World History I.....	**	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
SCMH	1890		Pre-Health Orientation .....	1	**
BIOL	1020		Principles of Biology and Lab (1021) .....	4	**
BIOL		1030	Organismal Biology and Lab (1031) .....	**	4
COMP		1000	Personal Computer Application .....	**	2
				<b>16</b>	<b>16</b>
<b>SO</b>					
PHYS	1500	1510	General Physics I & II .....	4	4
HIST	1020		World History II .....	3	**
ENGL	2200	2210	Core Literature I & II .....	3	3
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
COMM	1000		Public Speaking .....	3	**
BIOL		3000	Genetics .....	**	4
				<b>17</b>	<b>15</b>
<b>JR</b>					
PHIL		1030	Ethics & the Health Sciences .....	**	3
PSYC	2010		Introduction to Psychology .....	3	**
			Core Social Science Group II .....	**	3
			Core Fine Arts .....	**	3
STAT	2510		Statistics for Biology & Life Sciences.....	3	**
BIOL	3200		Microbiology.....	4	**
BIOL		4101	Cell Biology Lab .....	**	2
BIOL		4100	Cell Biology .....	**	3
BIOL	4410		Vertebrate Development.....	5	**
				<b>18</b>	<b>11</b>

At the end of the sophomore year, or in the fall of the junior year, the student must declare a major.

Student must either pass the computer competency test or take COMP 1000 as one of his/her electives.

**Pre-Physical Therapy**

This program prepares students applying to schools of physical therapy at the master's or doctoral level and leads to a bachelor's degree in one of the majors offered in the College of Sciences and Mathematics or another college. The most common majors selected by students in the College of Sciences and Mathematics are biomedical sciences, chemistry, microbiology, physics and zoology. Students should confer with the COSAM pre-health advisors for specific course requirements since these can vary from school to school. Students may also choose to major in a curriculum in another college or school, but they should meet with the Director of Pre-Health Programs in COSAM for information about the application process. Students should review the websites of the schools of their choice during the freshman year to determine any special admission requirements of those schools.



College of Sciences and Mathematics

Curriculum in Pre-Physical Therapy (PPHS)

FR	F	S		F	S
ENGL	1100	1120	English Composition I & II	3	3
MATH	1610		Calculus I	4	**
HIST		1010	World History I	**	3
CHEM	1030	1040	Fundamentals of Chemistry I & II	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1	1
SCMH	1890		Pre-Health Orientation	1	**
BIOL	1020		Principles of Biology	4	**
BIOL		1030	Organismal Biology	**	4
COMP		1000	Personal Computer Application	**	2
				<b>16</b>	<b>16</b>
<b>SO</b>					
PHYS	1500	1510	General Physics I & II	4	4
HIST	1020		World History II	3	**
ENGL	2200	2210	Core Literature I & II	3	3
PSYC		2010	Introduction to Psychology	**	3
			Core Social Science Group II	**	3
CHEM	2070		Organic Chemistry I	3	**
CHEM	2071		Organic Chemistry I Lab	1	**
COMM	1000		Public Speaking	3	**
BIOL		3000	Genetics	**	4
				<b>17</b>	<b>17</b>
<b>JR</b>					
PHIL		1030	Ethics & Health Sciences	**	3
			Core Fine Arts	3	**
STAT	2510		Statistics	3	**
PSYC	2120		Developmental Psychology	3	**
BIOL	2500	2510	Anatomy & Physiology I & II	4	4
BIOL	3200		Microbiology	4	**
			Psychology Elective	**	3
				<b>17</b>	<b>10</b>

At the end of the sophomore year, or in the fall of the junior year, the student must declare a major.

Student must either pass the computer competency test or take COMP 1000 as one of his/her electives.

Pre-Pharmacy

This program meets the requirements for admission to the Auburn University Harrison School of Pharmacy, which is fully accredited by the American Council on Pharmaceutical Education. Complete information about the professional curriculum in pharmacy may be found in the Harrison School of Pharmacy section of this bulletin.

To be considered for admission, the applicant must complete the course requirements listed in the curriculum model below and meet other admissions criteria set by the Harrison School of Pharmacy.

Although not required, students may want to complete an undergraduate degree before entering Pharmacy school since the majority of students admitted have a degree. Any major may be acceptable as long as the pre-pharmacy requirements are completed. The College of Sciences and Mathematics offers a major in biomedical sciences that is an excellent choice for students interested in this option. Students should confer with the COSAM pre-health advisors for specific course requirements.

Curriculum in Pre-Pharmacy (PPHR)

FR	F	S		F	S
HIST	1010		World History I	3	**
MATH	1610		Calculus I	4	**
ENGL	1100	1120	English Composition I & II	3	3
CHEM	1030	1040	Fundamentals of Chemistry I & II	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1	1
			Core Fine Arts	**	3
BIOL		1020	Principles of Biology and Lab (1021)	**	4
SCMH	1890		Pre-Health Orientation	1	**
				<b>15</b>	<b>14</b>
<b>SO</b>					
ENGL	2200	2210	Core Literature I & II	3	3
HIST	1020		World History II	3	**
CHEM	2070		Organic Chemistry I	3	**
CHEM	2071		Organic Chemistry I Lab	1	**
CHEM		2080	Organic Chem II	**	3
CHEM		2081	Organic Chem II Lab	**	1
BIOL	2500	2510	Anatomy/Physiology I & II	4	4
BIOL			Core Soc Sci Group II	**	3
				<b>14</b>	<b>14</b>
<b>SUMMER</b>					
BIOL	3200		Microbiology	4	**
STAT	2510		Statistics	3	**
				<b>7</b>	
<b>JR</b>					
BIOL	5600		Mammalian Physiology	6	**
			Core Social Science Group I	3	**
PHIL		1030	Ethics & the Health Sciences	**	3
PHYS	1500		General Physics I	4	**

BCHE	3200	Biochemistry	**	3
BIOL	3500	Perspectives in Immunology	**	3
BIOL	3020	Genomic Biology	**	4
			<b>13</b>	<b>13</b>

TOTAL HOURS - 90

Students are expected to demonstrate competency in computer skills; COMP 1000 is recommended if your computer skills need improvement.

This program contains the prerequisites for the Auburn University Harrison School of Pharmacy. It may not include prerequisites for other pharmacy schools.

Students entering HSOP beginning in Fall 2011 will be required to take BIOL 5600- Mammalian Physiology before starting Pharmacy School.

Pre-Veterinary Medicine

Students in the Pre-Veterinary Medicine (PVET) curriculum must select a major by the end of their sophomore year. Students in Sciences and Mathematics may select microbiology (MCMB, PVET) or zoology (ZOO, PVET) as majors. Pre-Veterinary options in the College of Agriculture include animal sciences (ANDS, PVET) and poultry science (POUL, PVET). A pre-vet option in wildlife (WILD, PVET) sciences also exists in the School of Forestry and Wildlife Sciences. The minimum requirements for admission to the College of Veterinary Medicine at Auburn University are incorporated into the curriculum models for all of these majors.

It is possible to gain admission to the College of Veterinary Medicine by completing only the minimum requirements listed. However, it is preferable to select a major and earn a baccalaureate degree. If a student is admitted to the College of Veterinary Medicine prior to completion of the full four years, he or she may obtain a BS degree by successfully completing the first three years of some of the Pre-Veterinary curricula and the first year of veterinary school. Students should consult their advisors regarding which curricula offer this option.

Application for admission to the College of Veterinary Medicine must be submitted to the dean of that college. A minimum grade-point average of 2.5 is required for application; D grades in required courses are unacceptable. All minimum requirements, including courses repeated due to time limitations, must be completed by the end of the spring term preceding the date of admission, and all advanced required courses in physical and biological sciences (organic chemistry and physics) must have been completed within six calendar years prior to the anticipated entrance date. Competition for admission to the professional schools is keen with the number of qualified applicants exceeding the number of places available. For additional information, see College of Veterinary Medicine section and the Pre-Veterinary Medicine curricula in the College of Agriculture.

Curriculum in Pre-Veterinary Medicine (PVET)

FR	F	S		F	S
MATH		1150	Pre-Calculus Algebra & Trigonometry	4	**
			Core History	**	3
ENGL	1110	1120	English Composition I & II	3	3
BIOL	1020		Principles of Biology and Lab (1021)	4	**
BIOL		1030	Organismal Biology and Lab (1031)	**	4
CHEM	1030	1040	Fundamentals of Chemistry I & II	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab	1	1
			Elective	**	3
				<b>15</b>	<b>17</b>
<b>SO</b>					
ENGL	2200	2210	Core Literature I & II	3	3
			Core History	3	**
			Core Philosophy	**	3
			Core Social Science	3	**
			Core Fine Arts	3	**
CHEM	2070	2080	Organic Chemistry I & II	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab	1	1
BIOL		3000	Genetics	**	4
				<b>16</b>	<b>14</b>
<b>JR</b>					
PHYS	1500	1510	General Physics I & II	4	4
			Core Social Science	**	3
BCHE	3200		Principles of Biochemistry	3	**
BIOL		3200	Microbiology	**	4
COMM	1000		Public Speaking	3	**
COMP		1000	Personal Computer Application	**	2
			Elective	3	**
ANSC	3400		Animal Nutrition	4	**
				<b>17</b>	<b>13</b>

TOTAL HOURS - 92

At the end of the sophomore year, or in the fall of the junior year, the student must declare a major.

A course in animal nutrition is now required. See advisor for details.

College of Sciences and Mathematics

**Curriculum in Microbiology/**

**Pre-Veterinary Medicine Option (MCMB, PVET)**

FR	F	S		F	S
BIOL	1020		Principles of Biology and Lab (1021) .....	4	**
BIOL		1030	Organismal Biology and Lab (1031) .....	**	4
ENGL	1100	1120	English Composition I & II.....	3	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
			Core History .....	**	3
MATH	1610		Calculus I.....	4	**
				<b>15</b>	<b>14</b>
<b>SO</b>					
ENGL	2200	2210	Core Literature I & II.....	3	3
PHYS	1500	1510	General Physics I & II .....	4	4
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
BIOL		3000	Genetics .....	4	**
BIOL		3200	General Microbiology .....	**	4
				<b>15</b>	<b>15</b>
<b>JR</b>					
			Core Social Science Group I & II .....	3	3
			Core Philosophy.....	**	3
			Core Fine Arts .....	**	3
			Core History .....	3	**
BIOL		4100	Cell Biology .....	**	3
BCHE	3200		Principles of Biochemistry.....	3	**
BIOL	4200		Clinical Microbiology .....	4	**
BIOL		5220	Introductory Molecular Genetics.....	*	3
BIOL	5210		Microbial Physiology .....	3	**
BIOL		4950	Undergraduate Seminar .....	**	1
				<b>16</b>	<b>16</b>
<b>SR</b>					
BCHE	5180	5190	Biochemistry I & II .....	3	3
BCHE	5181		Biochemistry I Lab .....	1	**
BIOL		5230	Virology.....	**	3
BIOL	5500		Immunology.....	3	**
BIOL	5501		Immunology Lab .....	2	**
			Biology Elective.....	3	3
			ROTC/Free Elective.....	4	4
UNIV		4AA0	SM1 Undergraduate Graduation.....	**	0
				<b>16</b>	<b>13</b>

Students who complete the above 6 semesters and successfully complete the first year of veterinary school may be awarded a BS in microbiology. In the event the first year Veterinary College alternative is not followed, the indicated senior year courses must be successfully completed to receive the BS in microbiology.

**TOTAL HOURS - 120**

Biology Electives - see advisor for approved course listing.  
 Student must either pass the computer competency test or take COMP 1000 as one of his/her electives.  
 A course in animal nutrition is now required. See advisor for details.

**Curriculum in Zoology/**

**Pre-Veterinary Medicine Option (ZOOL, PVET)**

FR	F	S		F	S
MATH	1610		Calculus I.....	4	**
ENGL	1100	1120	English Composition I & II.....	3	3
CHEM	1030	1040	Fundamentals of Chemistry I & II .....	3	3
CHEM	1031	1041	Fundamentals of Chemistry I & II Lab .....	1	1
			Core History .....	**	3
BIOL	1020		Principles of Biology and Lab (1021) .....	4	**
BIOL		1030	Organismal Biology and Lab (1031) .....	**	4
				<b>15</b>	<b>14</b>
<b>SO</b>					
ENGL	2200	2210	Core Literature I & II .....	3	3
PHYS	1500	1510	General Physics I & II .....	4	4
			Core Social Science Group I & II .....	3	3
CHEM	2070	2080	Organic Chemistry I & II .....	3	3
CHEM	2071	2081	Organic Chemistry I & II Lab .....	1	1
COMP	1000		Personal Computer Application .....	2	**
				<b>16</b>	<b>14</b>
<b>JR</b>					
			Core Fine Arts .....	**	3
			Core History .....	3	**
			Core Philosophy.....	**	3
BCHE	3200		Principles of Biochemistry.....	3	**
COMM	1000		Public Speaking .....	3	**
BIOL	3000		Genetics .....	4	**
BIOL		3030	Evolution and Systematics.....	**	3
BIOL			BIOL 4010 OR 4020 OR Vert BIOL .....	4	**
BIOL		3060	Ecology .....	**	4
			Elective.....	**	3
				<b>17</b>	<b>16</b>
<b>SR</b>					
STAT	3010		Stat for Engr. & Sci .....	3	**
BIOL	3200		Microbiology.....	4	**
BIOL	4100		Cell Biology .....	3	**
BIOL		5240	Animal Physiology .....	**	4
			Biology Elective.....	5	9
			Elective.....	**	3
UNIV		4AA0	SM1 Undergraduate Graduation .....	**	0
				<b>15</b>	<b>16</b>

Students who complete the above 6 semesters and successfully complete the first year of veterinary school may be awarded a BS in zoology. In the event the first year Veterinary College alternative is not followed, the indicated senior year courses must be successfully completed to receive the BS in zoology.

**TOTAL HOURS - 123**

Biology Elective - See advisor for approved course listing.  
 A course in animal nutrition is now required. Please see advisor for details.

# College of Veterinary Medicine

T.R. BOOSINGER, *Dean*

F.F. BARTOL, *Associate Dean, Research and Graduate Studies*

D.W. ANGARANO, *Associate Dean, Academic Affairs*

THE COLLEGE OF VETERINARY MEDICINE offers a fully accredited program of training leading to the degree of doctor of veterinary medicine. The degree requires four years in the professional curriculum after completion of a pre-professional curriculum which may take four years or more for the average applicant.

## Admission

Each year, approximately 120 students are admitted to the four-year program for the doctorate in veterinary medicine. Admitted students are residents of Alabama; residents of Kentucky or West Virginia, admitted by contract through the Southern Regional Education Board (SREB); or at-large residents (non-Alabama and non-contract students). Alabama and SREB students must have a minimum GPA of 2.5 on a 4.0 system on all course work attempted. A grade of D on any required course will not be accepted. At-large (non-Alabama and non-SREB) students must have a minimum GPA of 3.0 on a 4.0 scale. At-large applicants must be citizens of the United States and will be required to pay non-resident university fees. As part of the admissions process, the Committee on Admissions and Standards of the College of Veterinary Medicine may require a personal interview, a reading comprehension test or an examination on any required course. The College of Agriculture, the College of Sciences and Mathematics and the School of Forestry and Wildlife Sciences offer Pre-Veterinary curricula and are responsible for pre-veterinary counseling. In addition to academic requirements, candidates are expected to have animal experience and to have worked with a veterinarian.

All applicants must apply through the Veterinary Medical College Application Service (VMCAS). Additional information, including an electronic application, is available from the Association of American Veterinary Medical Colleges at <http://www.aavmc.org/>. Kentucky and West Virginia students must provide proof of residency from their college/university or from their state council on post-secondary education.

## Minimum Requirements for Pre-Veterinary Medicine

A bachelor's degree or completion of the Core Curriculum as stated in the General Information section in this bulletin.

**Specific Course Requirements:** Minimum pre-veterinary requirements for Alabama residents are those listed for the pre-veterinary curriculum in either the College of Agriculture, College of Sciences and Mathematics or the School of Forestry and Wildlife Sciences. Non-Alabama and SREB applicants must have acceptable equivalents which have been approved by the College of Veterinary Medicine. Individuals taking the pre-veterinary curriculum are expected to declare an academic major no later than their second year of enrollment.

All transfer courses must be equivalent in hours and content. Courses will not be waived on the basis of degrees or "practical experience." Pass-Fail or Satisfactory-Unsatisfactory grades are not acceptable in required courses. Consideration will not be extended to anyone with an overall GPA of less than 2.5 or anyone who is not a bona fide resident of Alabama, Kentucky, or West Virginia at the time of application (Non-resident/non-contract students must have a GPA of 3.0 or better).

**Time Limitation:** All required courses in the advanced physical and biological science categories must have been completed within six calendar years prior to the anticipated date of enrollment in the College of Veterinary Medicine.

**Standardized Examination:** Applicants must complete the Graduate Record Examination (verbal and quantitative) within six calendar years prior to the anticipated date of enrollment. Results of the GRE must be officially reported to the Office of Academic Affairs, College of Veterinary Medicine by November 1.

## Application Procedure

Admission to the College of Veterinary Medicine must be gained through formal application made by October 1 preceding the fall semester in which admission is desired. All applicants must be citizens of the United States.

The electronic application is available from the Association of American Veterinary Medical Colleges ([www.aavmc.org](http://www.aavmc.org)). A supplemental application and a processing fee of \$50 are required of all applicants. An additional \$40 is required of all who have not previously attended Auburn University.

The final selection of students is made by the Committee on Admissions and Standards of the College of Veterinary Medicine, Auburn University. The right is reserved to accept or reject any applicant.

Under the Regional Plan for Veterinary Training, the College of Veterinary Medicine currently serves Alabama, Kentucky, and West Virginia. The land-grant institution in each state participating under the SREB plan maintains counseling and guidance service for students desiring admission to the College of Veterinary Medicine. Students attending other institutions should contact the pre-health profession or land-grant school advisor in their state for information concerning admission requirements.

## Scholastic Requirements

All applicants and students in the professional program are subject to the academic and disciplinary regulations of the College of Veterinary Medicine in addition to those of Auburn University.

Any student who earns less than a 2.25 GPA for any term will be placed on academic probation. A student who fails to earn a 2.25 GPA in each of the succeeding two terms of enrollment will be dropped from the rolls of the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have a veterinary college cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

Any student who receives a D in any course will be placed on academic probation. If the student receives a second D in the same calendar year or academic year, they will be required to withdraw from the College of Veterinary Medicine.

A student will be removed from academic probation after two terms, assuming they have met the terms of probation.

A student who makes a grade of F on any course will be required to withdraw from the College of Veterinary Medicine. If a student who is dismissed for academic reasons is readmitted, they may be required to repeat additional courses as deemed necessary by the Admissions and Standards Committee.

Clinical courses are unique in that the art and skills developed in them can be acquired only through full participation in the laboratories. Attendance in these courses is required except in case of illness or other extenuating circumstances as may be judged by the involved instructor. Grading in these clinical laboratory courses is primarily by subjective evaluation. When a course involves student rotation through several disciplines or sections, the student must receive a passing grade in each area before a passing grade can be given for the course.

The responsibility for counseling is shared by the faculty of this College and the Department of Clinical Psychology.

## Non-Scholastic Requirements

Applications may receive provisional acceptance after they submit the application form and current academic documents. However, they must complete and return a medical examination report form provided by the university at least three weeks before the term opens.

**Health Insurance:** Students enrolled in the professional curriculum are required to provide evidence of health insurance coverage. Information about student insurance is available in the College of Veterinary Medicine, Office of Academic Affairs.

**Required Withdrawal**

The faculty of the College of Veterinary Medicine reserves the right to require the withdrawal at any time of any student who in the judgment of the admissions and standards committee is not profiting from the instruction offered, who is neglectful, irregular, dishonest or indifferent in the performance of required duties and studies or whose character or conduct is inconsistent with good order of the veterinary college or with the standard of the veterinary profession.

**Requirements for Graduation**

To be eligible for the DVM degree, candidates must complete all of the required courses in the order listed in the curriculum in veterinary medicine along with at least four hours of elective credit, with a minimum overall GPA of 2.25. In addition, each senior must participate in a clinicopathologic conference (CPC) to fulfill their oral communication requirement. Following completion of all academic work, each student is required to serve a preceptorship of eight weeks with an approved veterinarian. A certificate of satisfactory completion of a preceptorship is required for graduation.

A graduation fee must be paid at the beginning of the term of graduation and all indebtedness due the institution must be paid prior to graduation.

**Core Curriculum:** Auburn University has revised its core curriculum, effective Fall 2011. Students beginning college work Fall 2011 or after should consult an advisor for an updated curriculum model reflecting changes in core requirements

**Curriculum in Veterinary Medicine**

P1	F	S		F	S
VMED	5000		Orientation.....	0	**
VMED	5010		Veterinary Ethics.....	1	**
VMED	5012	5022	Problem Solve in Vet Med I & II.....	1	1
VMED	5110	5120	Physiology I & II.....	5	4
VMED	5111	5121	Veterinary Anatomy I & II.....	4	3
VMED	5130		Cell Physiology & Mole Genetics.....	2	**
VMED	5131		Basic Microanatomy of Dom Animals.....	3	**
VMED		5141	Organology of Domestic Animals.....	**	2
VMED		5150	Diagnostic Imaging.....	**	2
VMED		5151	Veterinary Neurosciences.....	**	5
VMED	5180		Veterinary Ethology.....	1	**
VMED	5200	5210	Veterinary Parasitology I & II.....	3	2
VMED		5301	Physical Diagnosis.....	**	2
			Electives.....	**	1-2
				<b>20</b>	<b>22-23</b>

P2					
VMED	5020	Veterinary Med and the Law.....	**	1	
VMED	5030	Public Health.....	**	4	
VMED	5032	Problem Solve in Vet Med III & IV.....	1	1	
VMED	5220	Principles of Vet Pathology.....	3	**	
VMED	5230	Vet Clinical Pathology.....	3	**	
VMED	5240	Principles of Vet Immunology.....	3	**	
VMED	5250	Principles of Vet Infectious Disease.....	4	**	
VMED	5260	Veterinary Pharmacology.....	3	**	
VMED		5310	Introduction to Surgery.....	1	
VMED		5510	Hemolymphatic/Integument Sys.....	4	
VMED		5520	Cardiovascular System.....	**	2
VMED		5530	Respiratory Sys.....	**	3
VMED		5540	Alimentary System.....	**	5
VMED		5910	Introd to Anesthesia.....	**	3
			Electives.....	1-3	1-3
				<b>22-24</b>	<b>21-23</b>

P3					
VMED	5052	Problem Solve Vet Med V.....	1	**	
VMED	5311	Surgery Practicum.....	2	**	
VMED		5320	Clinical Vet Nutrition.....	**	2
VMED		5330	Multispecies Medicine.....	3	**
VMED		5340	Emerg Med & Critical Care.....	**	2
VMED		5350	Veterinary Toxicology.....	**	3
VMED		5360	Production Medicine.....	**	3
VMED		5550	Urinary System.....	2	**
VMED		5560	Endocrine.....	2	**
VMED		5570	Reproductive System.....	5	**
VMED		5580	Nervous System.....	2	**
VMED		5590	Musculoskeletal System.....	3	**
VMED		5601	Clinical Rotations.....	**	3
VMED		5900	Special Senses System.....	**	1
VMED		5370	Oncology.....	**	1
			Electives.....	1-3	**
				<b>21-23</b>	<b>15</b>

SUMMER					
VMED	5601	Clinical Rotations.....	9		
P4					
VMED	5601	5601	Clinical Rotations.....	12	9
VMED		5611	Clinical Rotations Electives.....	**	3
VMED		5801	Preceptorship.....	**	3
VMED		5950	Clinicopathologic Cont.....	**	0
UNIV	4@@0	VM1 Graduation.....	**	0	0
				<b>12</b>	<b>15</b>

**TOTAL HOURS - 157**

Rotations will be set up in blocks of two 2-week rotations. There are 24 2-week rotations that each student must complete, 15 are required rotations and 9 are elective rotations that the student must select from an approved list.

# The Graduate School

GEORGE T. FLOWERS, *Dean*  
GEORGE CRANDELL, *Associate Dean*

## Points of Contact

The Graduate School is open 7:45-11:45 a.m. and 12:45-4:45 p.m., Monday through Friday.

Telephone: (334) 844-4700. Fax: (334) 844-4348.

E-mail: gradadm@auburn.edu

Web: www.grad.auburn.edu

Mailing Address: 106 Hargis Hall, Auburn, AL 36849-5122.

## General Regulations

Regulations governing the Graduate School equal or exceed the standards of the Conference of Southern Graduate Schools and the Commission on Colleges and Universities of the Southern Association of Colleges and Schools. Regulations listed here represent the minimums of the Graduate School. However, individual departments may impose more stringent requirements and students will be governed by them.

## Admission Requirements

Departments make admissions decisions based on the compatibility of the applicant's goals with departmental resources, the availability of spaces for new students, and a holistic evaluation of the applicant's potential for success in the program. Other considerations might typically include standardized test scores, grades and/or GPAs, letters of recommendation, writing samples, research or applied experience, and interviews.

To be considered for admission, the applicant must satisfy the following requirements:

1. The applicant must hold a bachelor's degree from an accredited U.S. institution or provide proof of equivalent training from a recognized academic institution outside the United States. Equivalency is determined by international evaluators in the Graduate School.
2. The applicant must be in academic good standing at the institution last attended.
3. The applicant must submit standardized examination scores (GRE, GMAT, TOEFL, and/or IELTS). Applicants with an earned doctorate (Professional, EdD, PhD) from an accredited institution whose instruction is in English may be exempted from this requirement.
4. The successful applicant normally will meet one of the following: a) a GPA of at least 2.75 on all undergraduate course work at an accredited United States institution in fulfillment of the requirements for a baccalaureate degree; b) a GPA of at least 3.0 on all graduate course work at an accredited United States institution in fulfillment of the requirements for a graduate degree; or c) an acceptable GRE or GMAT score as determined by the program to which the applicant applies.
5. Applicants whose native language is not English must submit either TOEFL scores of at least 550 on the written test (213 on the computer-based test), 79 on the Internet Based Test with at least 16 in each section, or IELTS overall band scores of at least 6.5.
6. The applicant must be recommended for admission by the graduate faculty in the applicant's area of study. Departments may (and frequently do) establish higher standards than those described here, and may require that applicants submit additional materials. Applicants should contact the department to which they seek admission for information about additional requirements.

Final evaluation of application files will not occur until all of the above requirements have been met. Applicants will be notified by the dean of the Graduate School when an admissions decision has been made. Some departments, operating with a limited number of spaces for students each year, make final decisions for the fall semester in early spring.

## Application for Admission

To apply for graduate study, submit to the Office of Graduate Admissions:

1. A formal application. Applications for admission are submitted online at www.grad.auburn.edu. Domestic applications must be accompanied by a fee of \$50; international applications must be accompanied by a fee of \$60. These fees may be paid online via credit cards or by checks or money orders (made payable to Auburn University).
2. One official transcript of all undergraduate- and graduate-level study from each school previously attended. An applicant who, because of current enrollment, cannot provide final transcripts at the time of

application, must submit transcripts of all completed study, as well as incomplete transcripts from the current institution. Applicants do not need to provide transcripts for credits earned at Auburn University.

3. Standardized Graduate Record Examinations (GRE) general test scores. Management, Finance, Marketing, Business Administration, and Accounting applicants must submit scores on the Graduate Management Admission Test (GMAT). Management will accept the GRE or GMAT. The master of business administration program will allow the substitution of the GRE for the GMAT under some circumstances. International applicants must also submit Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores. Applications and dates for these tests may be obtained at many colleges and universities; by writing the Educational Testing Service, P.O. Box 6000, Princeton, NJ 08541-6000; by telephoning (609) 771-7670 for the GRE, (609) 771-7330 for the GMAT, or (609) 771-7100 for the TOEFL; or by accessing the Educational Testing Service Web site at www.ets.org.
4. Additional Materials. Academic programs typically require additional materials in order to evaluate an applicant's potential for graduate study. Prospective students must also contact the department in which they wish to study to obtain information regarding additional admission requirements, such as writing samples and letters of recommendation. With the exception of the application, official transcripts, and standardized test scores, which should be sent to the Graduate School, materials requested by programs should be sent directly to the academic department.

Admission to any graduate degree program is granted by the dean of the Graduate School upon the recommendation of the department of proposed study. Applications and all other relevant material must be received by the Graduate School at least forty-five days before the first day of class of the semester in which the student wishes to begin graduate study. International applicants should submit all required materials at least ninety days before the first day of class of the semester in which the student wishes to begin graduate study. Deadlines set by the Graduate School are listed in the front of this bulletin. However, most academic units make admission decisions several months in advance. Thus, applicants should check with the department to which they seek admission to determine when materials should be submitted. Approval is valid for a maximum of twelve months beyond the entrance date given on the application. If the student does not register during this period, a new request for approval must be submitted. Application materials become the property of Auburn University and may not be returned to the applicant or forwarded to other institutions.

## Admission of Transient Graduate Students

A graduate student in good standing in an accredited college or university may be admitted as a transient when faculty and facilities are available. To be eligible, the student must submit a special Graduate Transient Form prior to the beginning of the semester for which transient status is requested. The form, available from the Graduate School or on the Web at www.grad.auburn.edu, must bear the signature of the student's department head and graduate dean or his/her designee. Transient status is granted for one semester only and does not constitute admission or matriculation as a degree candidate.

## Student Classifications

For administrative purposes, Auburn University students are assigned to a class level. Those that apply to graduate students are:

- MST - Students who hold full admission to master's programs.
- EDS - Students who hold full admission to Specialist in Education programs.
- PHD - Students who hold full admission to doctor of philosophy programs.
- GND - Students who hold a Bachelor's degree (or post-baccalaureate degree) may apply for admission to the Graduate School as a non-degree student for personal development, to obtain or renew certification, or to take a limited number of courses preliminary to enrolling in a graduate degree program. No more than 12 hours of credit earned while enrolled as a non-degree student may later be counted toward a graduate degree; however, students officially enrolled in an approved graduate certificate program may count up to the maximum number of credit hours allowed by the certificate program toward a

graduate degree. Non-degree students who later decide to pursue a graduate degree must re-apply for admission to the Graduate School and the graduate degree program.

GPR – Students who meet requirements for provisional admission except that they have not taken the GRE or GMAT or have not submitted all transcripts. This classification is for one semester only, and satisfactory scores and/or all transcripts must be submitted by the end of that semester. This classification cannot be used by international students, who must submit official transcripts and satisfactory scores on all required examinations before they are admitted.

### Undergraduate Courses, S/U Option and Auditing Courses

A graduate student may register for undergraduate courses (1000-4000-level). For students enrolled in Graduate School, grades earned in undergraduate courses will not be used in calculation of the GPA for either retention or graduation, but will appear on the graduate transcript. This policy took effect with the posting of grades fall 1998. For courses taken before fall 1998, grades earned in undergraduate courses may be used in calculation of the GPA for retention, but not for graduation. A graduate student may elect any course to be graded under the Satisfactory (S)-Unsatisfactory (U) option, if the major professor so recommends. Students are not allowed to select this option after the 15th class day. Courses listed on the Plan of Study must be graded A, B, C, D or F except for those designated as S/U. Similarly a graduate student may elect to audit any course not on the Plan of Study. The student may not change from audit to credit after classes begin, but may change from credit to audit before the 15th class day. All uses of the S/U and audit option require approval of the Graduate School.

### Graduate Curriculum Model Change

When a graduate curriculum model is changed, the changes apply only to students who matriculate after the approval of the changes and to currently enrolled students who voluntarily choose to complete the requirements of the new curriculum model. In no case, for students who are continuously enrolled, will the changed curriculum compel them to accumulate additional hours and grade points to graduate. Graduate students who have not been enrolled at Auburn University for two or more semesters and who are returning to the same curriculum may be subject to different university, college, school or departmental requirements than those which existed when continuous enrollment ceased.

### Graduate Program Option Definition

A graduate program option is a formally approved variation of an academic program by the offering department which meets objectives that may be more specifically focused. These additional objectives are integrated with the basic program. A formal graduate program option must preserve the integrity of the academic program of which it is a variant. Specifically, the formal program option must 1) be in a recognized sub-field of the discipline; and 2) share at least half of the total credits of the degree program. Only formally approved graduate program options are designated on the transcript. Other less formal variants, which may carry the name of "track," "concentration," "emphasis," or similar terms, are not designated on the transcript; however, all academic programs and designated variations (whether called "options," "tracks," "concentrations," "emphases" or some similar term) must be approved by the Alabama Commission on Higher Education (ACHE).

### Graduate Certificate Definition

**Graduate certificate programs** constitute an integrated curriculum, but not necessarily one aligned with a specific academic program. They may exist within programs, bridge programs or offer content widely useable across programs. Graduate certificate programs consist of a minimum of 9 and maximum of 21 hours of graduate-level course work. The course work may be graded or non-graded. A minimum GPA of 3.0 must be maintained on all graded course work in the certificate program.

Graduate certificate programs pertain to graduate students, whether degree seeking or non-degree seeking. A graduate certificate is distinguished from graduate minors in two primary ways. First, graduate minors are intended exclusively for degree seeking graduate students. Graduate certificates may be directed to both degree seeking and non-degree seeking students. Second, there are limits to the number of course credits taken in pursuit of graduate minors that may be applied

to a graduate degree (e.g., masters degrees require 21/30 hours to be in the major discipline). The limiting factor in the application of certificate course credits to graduate degrees is departmental policy or advisory committee recommendations. As an example, if a department developed a certificate program intended only for non-degree seeking students, that department could prevent those certificate courses from applying to a degree. However, in the absence of departmental policy, and with the approval of a student's advisory committee, both degree seeking and non-degree seeking students (if they later change status to degree seeking) may include all certificate-related courses toward degree requirements.

When new graduate certificates are proposed, they undergo the full process of curriculum review. This same process applies regardless of delivery method (i.e., on campus and distance). Special requirements for applicants may be negotiated between the certificate proposing program and the graduate school at the time the program is proposed. Consistent with Graduate School policy related to the Masters and Specialist degrees, all requirements for a graduate certificate must be accomplished within 6 years unless departmental criteria for the certificate necessitate a longer time. Certificate Programs that require an exception to this 6-year time limit must be approved by the Graduate Council. Not only must the content of the proposed certificate be appropriate, but the availability of a viable group of graduate faculty to teach the courses in the certificate must be documented. Proposals for graduate certificate programs must identify a specific person who will serve as coordinator. Certificates that bridge departments must have a home department to which all certificate applicants apply. But each affiliated department must also designate a coordinator. Students who fulfill all requirements for a graduate certificate will have the certificate noted on their transcript when the Graduate School receives a memo signed by the certificate coordinator documenting the successful completion of all certificate requirements.

**Graduate certificates** are to be differentiated from professional development certificates. No comprehensive definition of the latter is offered here, however, in brief, completion of a professional development certificate does not require admission to the Graduate School and is awarded based on participation in non-credit work. The definition of graduate certificate does not limit the ability of departments or other units from defining, implementing, or awarding professional development certificates. Professional development certificates are not subject to the Auburn University curriculum process, nor are their achievement noted on Auburn University transcripts.

### Two-Campus Studies

A student seeking a graduate degree at Auburn University, Auburn University at Montgomery, the University of Alabama, the University of Alabama at Birmingham, or the University of Alabama at Huntsville may take up to half the course work at another of these institutions. The courses taken must be approved in advance by the student's Advisory Committee and the respective graduate deans. All credit must be earned at the two institutions in which the student is working, and none may be transferred from another institution.

### Transfer to a Different Degree Program

For a student to transfer from one department to another requires **that the student be in good academic standing**, a new application for admission and the usual application fee. Changes in application status (master's to doctoral, doctoral to master's) or enrollment status (master's to doctoral or doctoral to master's) must be requested by the applicant/student involved and endorsed by the department head or chair, major professor, and advisory committee for enrolled students and approved by the dean of the Graduate School. Current international students must recertify full financial sponsorship for the issuance of a new 1-20 form.

### Non-Graduate Students and Graduate Work

An Auburn University undergraduate student may register for graduate courses provided that the following conditions are met: the student has at least a 3.0 GPA, is within 30 semester hours of graduating, has the written consent of the instructor of each graduate course, and obtains approval in advance from the Graduate School. A maximum of 12 semester hours of graduate course work taken in this option later may be applied toward a graduate degree at Auburn University with the approval of the student's advisory committee provided that appropriate arrangements are made in advance with the Graduate School and a grade of B or higher is achieved on all courses used for graduate credit. The total course load taken at the

time the undergraduate student is in a graduate course may not exceed 16 semester hours per semester. The same guidelines apply to undergraduate students taking graduate courses for undergraduate credit. A student may not use the same graduate course for both undergraduate and graduate credit. An exception is made for non-graduate students officially enrolled in an approved Accelerated Bachelor's / Master's Degree Plan (see Non-Graduate Students Enrolled in Accelerated Bachelor's / Master's Degree Plans below).

Any post-baccalaureate, non-degree student desiring enrollment in a graduate course must receive written consent of the instructor and approval of the Graduate dean in order to register for such a class.

### Non-Graduate Students Enrolled in Accelerated Bachelor's / Master's Degree Plans

An Auburn University undergraduate student officially admitted and enrolled in an approved Accelerated Bachelor's / Master's degree plan (ABM) may register for graduate courses that are listed as required or elective courses in the student's ABM plan. A maximum of nine hours (in a 30-hour master's program) or 12 hours (in a 36-hour or more master's program) may be counted towards *both* degrees, provided that a grade of B or higher is achieved on all courses used for graduate credit. No courses may be counted for both undergraduate and graduate credit in a program in which the double counting of courses is prohibited by an accrediting agency. The total course load taken at the time the undergraduate student is in a graduate course may not exceed 16 semester hours per semester.

### Graduate Study and University Employees

An Auburn University faculty member or employee may pursue a graduate degree with the approval of the head or chair of the employing department and the dean of the employing school or college. Inquiries should be made to the dean of the Graduate School.

### Graduate Assistantships

Graduate assistant appointments are temporary. Continuation depends upon availability of funds, level of enrollment, and research needs. Salaries are paid in accordance with the budget policies and payroll procedures of the university. The Board of Trustees is obligated to pay certain fixed charges against the institution and thereafter pay salaries in full insofar as funds are available. If for any reason beyond the control of the Board of Trustees funds are not available, salaries will be prorated.

Each graduate assistant must be in a degree-seeking program and registered in the classification of MST, EDS, PHD, or GPR. The student also must be registered for at least one course (during each academic term of the assistantship), must satisfy the minimum course load specifications of the individual departments and must be making satisfactory progress toward the degree.

Workloads for graduate assistants are defined on the basis of a normal teaching load or the equivalent time in other duties as determined by each department head and the dean of the school or college in which the assistant is employed. For example, a one-third workload is one-third of a normal teaching load. Graduate students may hold multiple assistantships and the assistantships may come from different units on campus, but together they cannot add up to more than a 100 percent appointment. Maximum course loads for graduate assistants are determined by individual departments. It is recommended that graduate students working more than half-time not carry a full academic load.

Requirements that graduate students register for hours not included in the plan of study as a condition of employment or to enhance credit hour production for administrative purposes are inappropriate. Similarly, requiring hours on the plan of study beyond the degree requirements established by the Graduate Faculty for such administrative purposes is also inappropriate unless the additional requirements are required by university policy.

International graduate students on F1 visas cannot hold a greater than 50 percent work appointment. International graduate students on F2 visas cannot hold a work appointment. Multiple assistantships for international graduate students cannot add up to more than a 50 percent work appointment.

International graduate teaching assistants who are assigned to scheduled lecture or laboratory sections must first be certified in spoken English proficiency. Certification may be attained through a minimum score of 50 on the Test of Spoken English (TSE) or a 23 on the speaking section of the Internet Based TOEFL offered by the Educational Testing Service or approval by the director of the English as a Second Language

Program (ESL). Applicants who hold a baccalaureate degree from an accredited institution whose instruction is in English may be exempted from this requirement.

### Multiple Graduate Assistantship Policy

Graduate students may hold assistantships from more than one department; however, approvals from **both** the home department and the hiring department are required for such appointments. A memo indicating such approvals should be submitted to the Graduate School prior to the beginning of the appointment.

### Tuition Waiver

Non-Alabama resident graduate assistants may receive a waiver of the out-of-state portion of their tuition if they are on at least a 25 percent graduate assistantship and are paid a minimum monthly stipend set each year by the provost. Such graduate assistants who have been on assistantship for consecutive fall and spring semesters will automatically have the out-of-state portion of their tuition waived for the summer semester whether or not they are on assistantship that semester. Students on assistantship for two consecutive semesters other than fall and spring must request the waiver from Student Financial Services.

### Graduate Fellowships

Auburn University provides in-state tuition fellowships to most of its students holding graduate assistantships. Though administered through the Graduate School, applicants should contact the specific academic departments concerning eligibility and availability.

### McNair Scholars

The Graduate School recognizes the achievement of students who have successfully completed a Ronald E. McNair Postbaccalaureate Achievement Program by waiving the Graduate School application fee.

### Institutions with Special Affiliations

By special arrangement with Florida A & M University, the Graduate School application fee is waived for students applying from this institution.

### Oak Ridge Associate Universities

Auburn University has been a sponsoring institution of the Oak Ridge Associated Universities (ORAU) since 1946. ORAU is a private, not-for-profit consortium of 82 colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) with principal offices located in Oak Ridge, Tennessee. Founded in 1946, ORAU provides and develops capabilities critical to the nation's technology infrastructure, particularly in energy, education, health and the environment. ORAU works with and for its member institutions to help faculty and students gain access to federal research facilities; to keep members informed about opportunities for fellowship, scholarship and research appointments; and to organize research alliances among our members in areas where their collective strengths can be focused on issues of national importance.

ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for DOE. ORISE is responsible for national and international programs in science and engineering education, training and management systems, energy and environment systems and medical sciences. ORISE's competitive programs bring students at all levels, K-12 through postgraduate, and university faculty members into federal and private laboratories. Other ORAU activities include the sponsorship of conferences and workshops, the Visiting Scholars program and the Junior Faculty Enhancement Awards. Contact Dr. Bryan A. Chin, (334) 844-4784, for more information about ORAU programs.

### Calendar

The university operates on the semester system. The Graduate School calendar at the beginning of this bulletin is also available at the Graduate School and contains the dates of various important deadlines. It should be followed carefully.

### Advisors

The dean of the Graduate School is the general counselor to all graduate students. A faculty advisor or major professor will be designated for each student in accordance with departmental policy. There also will

be an advisory committee for each student. The major professor generally serves as the chair of the advisory committee. In the case of co-chairs, at least one must be a member of the graduate faculty at the appropriate level at Auburn University. Some required forms and reports regarding the student's program must be approved by the major professor, advisory committee, department head or chair and the dean of the Graduate School. Students should ascertain which signatures must be obtained.

### Due Process

Each graduate student's progress toward a degree will be monitored by the student's advisory committee. If a graduate student is deemed not to be making satisfactory progress toward the degree, the student may be dropped from the Graduate School. Issues of professional and personal development may be considered in determining satisfactory progress toward the degree.

### Grades

To receive a graduate degree at Auburn University, a student must earn a cumulative GPA of 3.0 on a 4.0 scale on all courses carrying graduate credit. No more than nine hours beyond the student's Plan of Study is allowed in obtaining the cumulative graduate GPA (CGGPA). No grade below C (including unsatisfactory grades for courses taken under the S/U option) is acceptable for credit toward a graduate degree. Each graduate course in which a grade below C is received must be repeated at Auburn University whether or not it is listed on the student's Plan of Study. Both the original grade and the grade for the repeated course will be counted in calculating the CGGPA. Course credits transferred from another institution may not be used to satisfy this requirement. Courses retaken will not count against the nine-hour limit beyond the student's Plan of Study in obtaining the minimum CGGPA.

### Withdrawing from Courses

Courses may be dropped without academic penalty on or before mid-semester. A course may be dropped after mid-semester only under unusual conditions. When the Graduate dean approves dropping the course under such circumstances, a W will be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise a grade of WF (Withdrawn Failing) is assigned. A student dropping the only course or all courses for which the student is registered after the first class day must resign for the semester on a separate form obtained from the Graduate School.

### Academic Standing

Only grades in Auburn University courses approved for graduate credit will be used in determining the overall GPA for continuation in the Graduate School. If at the end of any semester the cumulative graduate GPA (CGGPA) falls below 3.0, the student will be placed on **academic probation**. If the CGGPA remains below 3.0 after the next nine credit hours of graduate enrollment (both graded and ungraded) or two consecutive terms (whichever comes first), the student will be placed on **academic suspension**. The student may be readmitted only after completion of a remediation plan recommended by the academic unit and approved by the dean of the Graduate School. Course work taken as part of the remediation plan must be completed within two consecutive semesters and may count toward both the student's degree and CGGPA with the recommendation of the department head and the approval of the graduate dean. Upon completion of the remediation plan, the student must have addressed academic deficiencies and have a CGGPA of 3.0 or above. Once approved by the graduate dean, remediation plans may not be amended or extended beyond the original deadline. If a student fails to complete the remediation plan as approved or if the student earns a grade of C or below while completing the remediation plan, the student will be dismissed from the Graduate School and the designation **ACADEMIC DISMISSAL** will be placed on the student's official record.

### Incompletes

A grade of "incomplete" must be removed within the following six months or it will be recorded permanently as an F and the course will have to be repeated. This applies regardless of the student's enrollment status. A student not enrolled during the following six months is not exempt from this rule. No student may graduate until "incomplete" and "no record"

grades are removed, and the removal must be completed at least three weeks before the date of graduation, regardless of whether the course is included on the Plan of Study.

### Transfer of Credit from Other Institutions

Graduate credit taken in residence at an international institution or at a regionally accredited U.S. institution may be transferred when recommended by the student's major professor, advisory committee, graduate coordinator, and when also approved by the dean of the Graduate School. Students seeking transfer credit must provide documentary evidence showing the relevance of the course to the student's plan of study and provide an official transcript showing credit earned for the course. No prior commitment is made concerning whether transfer credit will be accepted. A student must earn at least 24 semester hours, or half of the total hours required for a master's degree, whichever is greater, at Auburn University. A program that requires 30 hours of credit will be limited to 6 semester hours of transfer credit. Doctoral students may transfer up to 30 semester hours from a previously awarded master's degree with the approval of the advisory committee and the dean of the Graduate School; such transfer credit must fall within the time limits of the degree. For the doctoral degree, at least 21 semester hours must be earned as a graduate student at Auburn University. The credit must be acceptable to the student's advisory committee and be pertinent to the student's Plan of Study. In the case of graduate degree programs offered through joint, cooperative, or consortia agreements, the student must earn a majority of credits from the participating institutions. No transfer credit will be approved without an official transcript. No course on which a grade lower than B was earned may be transferred. Additionally, credit will not be allowed if the combined GPA on graduate work taken at other schools is less than 3.0 on a 4.0 scale, nor may transfer credit be used to improve the GPA on courses taken at Auburn University.

### Correspondence Work Unacceptable

Study by correspondence shall not be counted toward a graduate degree.

### Classified or Proprietary Research

No thesis or dissertation should be based exclusively on a proprietary or classified research project, nor should a thesis or dissertation include proprietary or classified information. Any graduate student and advisor engaged in such research should identify an alternative topic for the thesis or dissertation. Should a thesis or dissertation include such information, the document must be rewritten with offending material excised.

### Research Involving Humans

Auburn University established the Institutional Review Board for the Use of Human Subjects in Research (IRB) to evaluate research for compliance with the guidelines and policies of the U.S. Department of Health and Human Services, the Public Health Service, the Food and Drug Administration and other federal, state and local regulations. All research using human subjects – whether it is conducted by faculty, staff or students – must be approved in advance by the IRB, regardless of the source of funding, lack of funding or any other consideration. Research involving human subjects not approved in advance may be disallowed and may incur severe penalties for non-compliance with institutional policy. Information and review forms may be obtained from the Administrator for Special Programs, 307D Samford Hall, (334) 844-5966.

### Activities Involving Animals

Auburn University's Animal Resources Program requires compliance with the Animal Welfare Assurance negotiated with the Office of Protection from Research Risks/National Institutes of Health (OPRR/NIH). A major part of that Assurance involves the Institutional Animal Care and Use Committee (IACUC) that ensures compliance with the Assurance, the policies of the U.S. Department of Health and Human Services, the U.S. Department of Agriculture and all other federal, state and local regulations concerning care, treatment and use of animals. All activities, whether teaching, research, production or display of animals, and whether or not the activity is funded, must be approved in advance by the committee. The use of animals for any purpose that is not approved in advance by the IACUC may involve severe penalties for non-compliance with institutional



policy and could jeopardize the university's Animal Welfare Assurance filed with the OPRR and the NIH. Information may be obtained from the Director of Animal Resources, (334) 844-5667.

### Continuous Enrollment Policy

All full- and part-time degree-seeking graduate students must be continuously enrolled. Continuous enrollment is defined as registration in at least two semesters in a given academic year (fall, spring, summer) until the degree is awarded or status as a degree-seeking student is terminated through an official university withdrawal.\* Students must register for the term in which they take their examinations, defend their dissertations, and complete degree requirements (including summer term). Although the Graduate School and individual graduate programs will monitor the enrollment status of graduate students, it is ultimately the responsibility of graduate students to ensure that they are meeting the enrollment provisions of this policy.

\* Students who enroll for the first time during spring or summer semesters will not be declared inactive if they register in at least two semesters during their first full and subsequent academic years.

### Inactive Status

Students who fail to register for at least two semesters in a given academic year will be declared inactive. To be re-activated, students must apply for re-activation to the program in which they were enrolled and the Graduate School. Re-activation is not guaranteed. In order to fulfill the continuous registration requirement, students who are re-activated must register retroactively and pay the continuous enrollment fee for all semesters that have elapsed since they were last enrolled--up to a maximum of eight semesters.

### Leave of Absence

A student may be granted a leave of absence for medical reasons, family necessity or dependent care, military service, or other approved personal reasons. Students planning to discontinue enrollment for a semester or more must request approval for a leave of absence. Students may petition the Graduate School for a leave of absence for a maximum of two semesters during the entire program; however, the Graduate School may approve extensions to the maximum two semester leave of absence (e.g., for military service obligations extending beyond two semesters).

A petition for a leave of absence (or extension), signed by the Graduate Program Officer or head of the academic unit, must be approved by the Dean of the Graduate School. The Graduate School may request appropriate documentation. The request must be filed and approved before the anticipated absence. An approved leave of absence will enable students to re-enter their program without applying for re-activation or owing retroactive continuous enrollment fees.

A student on leave is not required to pay fees, but in turn may not use Auburn University faculty, facilities, resources, or services intended only for enrolled students; receive a graduate assistantship, fellowship or financial aid from the University or take any Auburn courses related to the plan of study.

### Exceptions to the Continuous Enrollment Policy

The Graduate School, if circumstances warrant, may grant exceptions to the Continuous Enrollment Policy. Appeals should be made directly to the Dean of the Graduate School.

### Registration and Graduation Requirements

Thesis and dissertation students needing thesis or dissertation final approval and submission and the final examination, or non-thesis graduate students needing to complete projects, would register for 7990 Research and Thesis, 8990 Research and Dissertation, or 7980 Project, as applicable. Non-thesis graduate students requiring only a final examination would register for GRAD 7000. Students may not register for GRAD 7000 for more than one semester. Students who have in a previous term completed all requirements for the degree, upon receipt of a "certificate of completion" form from the Graduate School, will not be required to register in a future term if their graduation is delayed or postponed.

To maintain continuous enrollment, students not enrolled in GRAD 7000, 7980 Project, 7990 Research and Thesis, 7990 Research and Dissertation, or any other course must register for GRAD 7890, Continuous Registration for Master's Students or GRAD 8890, or Continuous Registration for

Doctoral Students, and pay the requisite continuous enrollment fee. The continuous enrollment fee allows students to maintain active enrollment status and continuous advising services.

No student will be permitted to graduate who fails to submit a graduation check request to the Graduate School prior to the semester of expected graduation. Graduation day is the official last day of each semester and, therefore, is the deadline for approved plans of study and graduation checks for graduation the following semester. It is the responsibility of graduate students to check records for compliance with graduation requirements. Students who have completed a graduation check for a previous term must notify the Graduate School of pending graduation before the 15th class day of each subsequent semester. Graduate degrees are awarded at the end of each semester. Candidates wishing to graduate in absentia must inform the Registrar's Office.

A graduate student may carry a maximum course load of 16 hours per semester (14 in the summer term) including undergraduate courses. Graduate students must carry nine hours per semester or enroll in GRAD 7AA0/8AA0 with concurrent enrollment for a minimum of one hour of 7990/8990 to be classified as full-time students. Enrollment in GRAD 7AA0/8AA0 requires the completion of a certification available at the Graduate School or at [www.grad.auburn.edu](http://www.grad.auburn.edu).

### Exceptions to Graduate School Policies

Exceptions may be made to policies of the Graduate School under special circumstances. A person wishing to request an exception should write a letter to the dean of the Graduate School stating the nature of the request and the reasons for it. If a student is making the request, the letter should be submitted first to the major professor, who will write a letter of recommendation. Both letters go to the department head. If a member of the faculty is making the request, the letter goes to the department head, who will write a letter of recommendation. All letters go to the associated college/school dean for approval. Letters and comments then are forwarded to the dean of the Graduate School. A request for an extension of time to meet degree requirements must be justified. It must be accompanied by a proposed schedule for completion and assurance that the student is current in subjects included in the plan of study.

### The Master's Degree Program

The minimum requirements for most master's degrees can be satisfied in one academic year of two semesters or nine months. In practice, however, many students need three semesters or longer. Certain departments have special requirements as outlined in this bulletin. In addition, those students who hold assistantships or fellowships, those who engage in time-consuming work off-campus, or those with scholastic deficiencies of any sort cannot meet all requirements in the minimum time. Also, research is unpredictable and frequently requires more time than anticipated. Certain departments offer a master's degree under two plans, referred to as the Thesis Option and the Non-Thesis Option.

### Time Limit

All graduate work toward a master's degree must be completed within a period of six calendar years. The student's time to completion begins with the earliest completed course approved for inclusion in the Plan of Study.

### Advisory Committee

The student works under the direction of an advisory committee composed of three members recommended by the appropriate department head or chair. Two must be members of the graduate faculty. This committee will approve the student's program of study, conduct required examinations and direct the required field project or thesis. Students in a teaching field (e.g., music education, science education, foreign language education) work under a committee composed of at least two members from the College of Education and one member from a related academic field.

### Plan of Study

Early in the graduate program, each student should confer with the appropriate departmental advisor or major professor to select courses and discuss research interests. Then a Plan of Study should be prepared and submitted to the Graduate School. The Plan of Study form is available on the Web at [www.grad.auburn.edu](http://www.grad.auburn.edu). For full-time students,

the Plan of Study must be submitted no later than the end of the first semester in Graduate School. No student will be permitted to graduate who fails to submit a Plan of Study. For part-time students, the Plan of Study must be submitted before registration for the fourth course taken in Graduate School. Notification of all changes must be provided before the beginning of the final semester. One to three changes may be made by using the simplified "Change in Existing Plan of Study Form" available at the Graduate School or on the Web. Four or more changes require a new Plan of Study. The student is responsible for carrying out the planned program and for asking the major professor to make necessary changes.

### Language Requirement

Some departments require a reading knowledge of one foreign language. These requirements are outlined in the departmental statements later in this section. Arrangements to take the foreign language examination should be made with the student's major professor and the head or chair of the department. The student must apply at the Graduate School by the deadline for each semester listed in the calendar.

### Residency Requirement

Resident, on-campus study is the foundation for research-based graduate degree programs at Auburn University. Any graduate student enrolled in a degree program culminating in a thesis or dissertation must directly engage in research with the major professor, must have access to the research tools needed for the research activity, must be immersed in the culture of graduate education, must engage in the professional activities of the discipline, and must complete the research activity in a reasonable period of time. Graduation requires the major professor to certify compliance with these requirements.

### Summary of Procedures for Master's Degree Program

The student should:

1. Obtain application forms from the Graduate School and apply for admission by submitting completed forms and other required materials as outlined in this bulletin.
2. Apply for an assistantship, if pertinent, with the department involved.
3. Become familiar with requirements for the desired degree as outlined in this bulletin.
4. Consult with departmental advisor and become oriented to departmental procedures.
5. Plan schedule of study for the first semester with advisor.
6. Establish an advisory committee through the department head or chair and departmental advisor; usually done during the first semester of course work.
7. Prepare a proposed Plan of Study in consultation with the advisory committee. Submit a plan approved by the committee and department head to the Graduate School no later than the second semester.
8. Consult with the advisor on approval for the thesis plan, if pertinent, and become familiar with the *Electronic Thesis and Dissertation Guide*, on the Web ([www.grad.auburn.edu/etd\\_guide.html](http://www.grad.auburn.edu/etd_guide.html)).
9. Fulfill language requirements, if any.
10. Request graduation check in the Graduate School no later than the last day of the semester (graduation day) prior to the semester of graduation.
11. Register for at least one course the semester of graduation.
12. Prepare thesis manuscript, if pertinent.
13. Arrange for final oral examination with advisory committee.

### Master's Degree Options

The following general regulations are minimum requirements. The professor or committee in charge of a student's work may require more than the specified minimum in order to achieve a well-rounded program. All programs require a minimum of 30 semester hours of graduate courses, 6000-level or above.

### The Thesis Option

The master of arts, master of science and master of industrial design are offered under the thesis option. Thesis students register for 7990 Research and Thesis in semesters when working on the thesis, when submitting, defending or awaiting final approval of the thesis, and when taking final examinations.

**Major and minor subjects:** A student under the thesis option must earn a minimum of 30 semester hours, of which at least 21 semester hours must be in a major area of concentration. Depending on departmental

requirements or the wishes of the student's advisory committee, the remainder of the course work may be taken within the major field or in a separate but closely related area. Specific requirements are set forth in this bulletin.

If a student has not met all undergraduate pre-requisites in any field chosen for major or minor work, these should be scheduled as soon as possible, preferably before graduate work begins. The major professor will indicate these on the student's Plan of Study.

The topic selected for the thesis must be approved by the student's major professor and advisory committee. The student conducts the research and prepares the thesis under the direction of the major professor. The course, Research and Thesis, is number 7990 in all departments. The student must register for a minimum of four credit hours of this course but may register for as many hours as desired. No more than six hours may be counted toward meeting degree requirements. The student may register for one or more hours at a time. No grade is assigned for this course.

The Electronic Thesis and Dissertation Guide, which contains information about requirements for the thesis, is available on the Web at [www.grad.auburn.edu/etd\\_guide.html](http://www.grad.auburn.edu/etd_guide.html). Submission of a thesis is defined as the time at which the first complete draft of such is submitted to the major professor for review. The Graduate School accepts only theses prepared according to the Guide. Refer to the Approval Process section in the Guide to have a format check done. The Graduate School Calendar lists the deadline for acceptance of final approved theses by the Graduate School each semester. If the electronic thesis needs corrections, the student's graduation may be delayed at least one semester. Auburn University reserves the right to make copies of the thesis, but the student retains all publication rights. Effective Summer 2005, all theses must be published electronically through AUETD.

At the discretion of the program, students may be required to pass a comprehensive examination independent of the required thesis defense. If a program requires a comprehensive examination, the program will publish and submit to the Graduate School a description of the scope and form of the assessment (e.g., comprehensive oral or written examination) and the process for appeal or re-examination should the student should fail the examination.

The major professor will schedule the thesis defense not later than the deadline indicated in the Graduate School calendar. The thesis defense should be open to members of the Graduate Faculty as visitors. Successful completion of the thesis defense requires the unanimous support of all members of the advisory committee. If a student fails the thesis defense, one re-examination may be given on recommendation of the advisory committee and approval by the dean of the Graduate School. Further examinations will be allowed only under exceptional circumstances and with approval of the Graduate Council.

### The Non-Thesis Option

At the discretion of the program, students may be required to pass a comprehensive examination. If a program requires a comprehensive examination, the program will publish and submit to the Graduate School a description of the scope and form of the assessment (e.g., comprehensive oral or written examination) and the process for appeal or re-examination should the student fail the examination. Non-thesis graduate students who complete a special project must register for 7980 in semesters when working on the project. Non-thesis students requiring only a final examination register for GRAD 7000 in the semester when the exam is taken. Credit hours for 7990 Research and Thesis cannot be counted toward graduation requirements for non-thesis degree programs.

### The Master of Science

The master of science is offered in aerospace engineering, agricultural economics, animal sciences, biological sciences (botany, microbiology and zoology), biomedical sciences (thesis and non-thesis), chemical engineering, chemistry, civil engineering, communication disorders, community mental health, computer science and software engineering, consumer affairs (thesis and non-thesis option), curriculum and teaching, discrete and statistical sciences, early childhood, economics (thesis and non-thesis option), educational foundations leadership and technology, electrical and computer engineering, finance (thesis and non-thesis option), fisheries and allied aquacultures, forestry and wildlife sciences, geology (thesis and non-thesis option), health and human performance, horticulture, human development and family studies, industrial and systems engineering, management (thesis and non-thesis option), materials

engineering, mathematics, mechanical engineering, nutrition and food science (thesis and non-thesis option), pharmaceutical sciences, pharmacy care systems, physics (thesis and non-thesis option), plant sciences (agronomy and soils, entomology, and plant pathology), polymer and fiber engineering (thesis and non-thesis option), poultry science, rehabilitation, special education, and sociology (thesis and non-thesis option).

### The Master of Arts

The master of arts is offered in communication (thesis and non-thesis option), English (thesis and non-thesis option), history (thesis and non-thesis option), sociology (thesis and non-thesis option) and Spanish.

### Second Master's Degree

For a second master's degree, the student fulfills all major requirements applicable to any other master's degree, including the thesis, if appropriate. The student may, on recommendation of the advisory committee, transfer credit hours from the previous master's degree. The student must earn at least 24 semester hours, or half of the total hours required for the master's degree, whichever is greater, in the second master's program at Auburn University.

### Special or Professional Master's Degrees

These special or professional degrees are offered: master of accountancy, master of aerospace engineering, master of agriculture (agricultural economics, agronomy and soils, animal sciences, entomology, horticulture, plant pathology, and poultry science), master of applied mathematics, master of aquaculture, master of building construction, master of business administration, master of chemical engineering, master of civil engineering, master of communication disorders, master of community planning, master of design build, master of software engineering, master of education (curriculum and teaching, educational foundations leadership and technology, health and human performance, and special education, rehabilitation, and counseling school psychology), master of electrical engineering, master of forestry, master of Hispanic studies, master of industrial design (thesis and non-thesis option), master of industrial and systems engineering, master of landscape architecture, master of management information systems, master of materials engineering, master of mechanical engineering, master of probability and statistics, master of public administration, master of technical and professional communication, and master of biological studies.

### The Specialist in Education Degree

This degree is designed for professionals in education and human services areas who want increased competence in a field of specialization. Areas of specialization are offered in the various departments in the College of Education.

### Admission

Scholarship, interpersonal orientation and potential for leadership are considered in the screening procedure. Appropriate experience in teaching or a leadership position in education or a human services area is requisite. All work beyond the baccalaureate must have been of high quality with a GPA of at least 3.0 on a 4.0 scale. Students holding a master's degree from Auburn University are not required to resubmit GRE scores.

### Advisory Committee

The specialist student works under the direction of an advisory committee composed of three members recommended by the appropriate department head or chair. All must be members of the Graduate Faculty. This committee will approve the student's program of study, conduct required examinations and direct the required field project. Students in a teaching field (e.g., music education, science education, foreign language education) work under a committee composed of two members from the College of Education and one member from a related academic field.

### Requirements for Degree

A minimum of 30 semester hours beyond the master's degree must be taken in a program approved by the student's advisory committee. The Plan of Study should be submitted to the Graduate School no later than the second semester of study. Professional educators pursuing sixth-year certification are responsible for adapting their Plans of Study to

requirements in the states in which they will need advanced certification. A relevant field project, approved in advance by the student's committee, must be completed under the supervision of the major professor. A final written report on the field project will be submitted to the advisory committee by the student. The advisory committee will conduct a final examination on the area of specialization and the field project.

No student will be permitted to graduate who fails to submit a Plan of Study and graduation check to the Graduate School prior to the semester of expected graduation. Graduation day is the official last day of each semester and, therefore, is the deadline for submitting Plans of Study for graduation the following semester.

### Time Limit

All graduate work toward an Education Specialist degree must be completed within a period of six calendar years. The student's time to completion begins with the earliest completed course approved for inclusion in the plan of study.

### Doctoral Degrees

The doctor of philosophy is offered in aerospace engineering, animal sciences, biological sciences (botany, microbiology and zoology), chemical engineering, chemistry, civil engineering, computer science and software engineering, counselor education, counseling psychology, curriculum and teaching, discrete and statistical sciences, early childhood, educational psychology, electrical and computer engineering, English, fisheries and allied aquacultures, forestry and wildlife sciences, history, horticulture, human development and family studies, industrial and systems engineering, kinesiology, management, materials engineering, mathematics, mechanical engineering, nutrition and food science, physics, plant sciences (agronomy and soils, plant pathology, and entomology), poultry science, psychology, public administration and public policy, and rehabilitation, special education, plus interdepartmental programs in biomedical sciences (anatomy, physiology, and pharmacology; large animal surgery and medicine; pathobiology; radiology; and small animal surgery and medicine), economics (agricultural economics and forestry), integrated textile and apparel science (consumer affairs and polymer and fiber engineering), and pharmaceutical sciences (pharmaceutical sciences and pharmacy care systems).

### Admission

Prospective candidates for the degree of doctor of philosophy are admitted under the same procedures and requirements outlined in the general regulations elsewhere in this bulletin. A student must be admitted to a specific doctoral program, but admission does not mean admission to candidacy for the degree, which occurs only after satisfactory completion of the general oral examination.

### Advisory Committee and Plan of Study

After the student has enrolled in the doctoral program, an advisory committee should be selected by the student, major professor and department head or chair. The advisory committee is responsible for developing the student's Plan of Study and conducting the doctoral general and final examinations. It should consist of at least three members of the Graduate Faculty. At least two, including the major professor, must be members of the Graduate Faculty at Level Two. The formal appointment of the advisory committee occurs when the Plan of Study is approved by the Graduate School.

The Plan of Study should be prepared by the student and the advisory committee and filed with the Graduate School as soon as feasible. It should not be delayed beyond the second semester of doctoral work. The Graduate School recognizes that changes may be warranted, and a form is available for amendments as required by student needs, research interests and course availability.

### Residency Requirement

Resident, on-campus study is the foundation for research-based graduate degree programs at Auburn University. Any graduate student enrolled in a degree program culminating in a thesis or dissertation must directly engage in research with the major professor, must have access to the research tools needed for the research activity, must be immersed in the culture of graduate education, must engage in the professional activities of the discipline, and must complete the research activity in a

reasonable period of time. Graduation requires the major professor to certify compliance with these requirements.

### General Doctoral Examination

A general examination, often called the “preliminary examination,” is required of all applicants for the degree of doctor of philosophy. It consists of written and oral testing by the student’s advisory committee (or by an examination committee designated by the student’s academic program) in the student’s major and minor. The written portion of the examination does not require approval in advance by the Graduate School. The oral portion, however, does require such approval. Arrangements for the oral examination must be made by application to the Graduate School at least one week in advance of the examination. The primary purpose of the general examination is to assess the student’s understanding of the broad body of knowledge in a field of study. The examination also affords the advisory committee an opportunity to review the student’s proposed research and understanding of research methods and literature in the chosen field. If the general examination reveals deficiencies in any of these areas, the advisory committee may recommend remedial work, re-examination, or discontinuation of doctoral study.

The general oral examination should be conducted immediately after the successful completion of the written examination and well before the final examination. At least one complete semester (preferably more than one) must intervene between the general oral and final examinations. The two examinations thus cannot be taken either in the same semester or in consecutive semesters. Some departments have specific requirements for conducting these examinations, and the student should become familiar with these. Successful completion of the oral examination requires unanimous support of the student’s advisory committee. If the general oral examination is failed, a re-examination may be given on recommendation of the committee and approval by the dean of the Graduate School. Further examinations require exceptional circumstances and approval by the Graduate Council.

The student becomes a candidate for the degree on successful completion of the general examination.

### Time Limit

Programs and departments should conduct annual reviews of doctoral candidates to assess progress toward the completion of the degree. Students are expected to achieve candidacy within six years and to complete all requirements for the degree within ten years. Upon admission to candidacy, the student has four calendar years to complete all remaining requirements for the doctoral degree. The student’s time to completion begins with the earliest completed course approved for inclusion in the plan of study. If unable for any reason to complete the requirements on time, the student may petition, with the approval of the advisory committee, the dean of the Graduate School for a one year extension. Students failing to complete the degree in the allotted time revert to the status of an applicant and must petition, with the approval of the advisory committee, the dean of the Graduate School to retake the oral examination.

### Final Examination

After the dissertation has been completed (except for minor revisions) and has been approved by the student’s advisory committee, it is submitted to the Graduate School. A University Reader (representing the university’s graduate faculty and the Graduate School) will be appointed to review the dissertation. However, the student’s advisor may request appointment of the University Reader at any time rather than waiting until after the dissertation is drafted. When the Graduate School has approved the dissertation, the student may apply for the final examination on a form sent by the Graduate School. The application must be filed with the Graduate School at least one week in advance of the final examination. The examination is administered by the student’s advisory committee. The University Reader also attends and participates. The examination, which generally is oral but may be both oral and written, includes the major and minor fields and a defense of the dissertation. Successful completion requires unanimous support of all members of the committee, including the University Reader. Any member of the Graduate Faculty may attend.

If a student fails the examination, a re-examination may be given on recommendation of the advisory committee and approval by the dean of the Graduate School. Further examination requires exceptional circumstances and approval of the Graduate Council. In addition to

successful completion of all examinations, the final electronic copy of the dissertation must be submitted to the Graduate School before the degree is conferred (see Graduate School calendar for the deadline).

### Summary of Procedures for Doctoral Degree Programs

The student should:

1. Obtain application forms from the Graduate School and apply by submitting all required materials to the Graduate School by the deadlines published in this bulletin. The Graduate School forwards the application to the appropriate departmental screening committee. The department head or chair then makes a recommendation to the dean of the Graduate School, who sends a letter notifying the applicant of the decision.
2. Apply for an assistantship, if applicable, through the department involved.
3. Become familiar with the requirements for the doctoral degree as published in this bulletin.
4. Consult with the departmental advisor and become familiar with departmental procedures.
5. Plan a schedule of study for the first semester with advisor.
6. Submit a proposed schedule for fulfilling the residency requirements.
7. Acquire necessary forms at the Graduate School or on the Web at [www.grad.auburn.edu](http://www.grad.auburn.edu).
8. Establish an advisory committee through the major professor and department head or chair. Official appointment of the advisory committee occurs when the Plan of Study is approved by the Graduate School.
9. Prepare a Plan of Study approved by the advisory committee and department head or chair and submit to the Graduate School.
10. Complete course work, including language requirements, if any, as detailed in the Plan of Study.
11. Arrange for the general written and oral examinations through the advisory committee. After the written examination, schedule the general oral examination at least one week in advance using a form obtained from the Graduate School.
12. Submit the dissertation proposal for approval by the advisory committee and become familiar with *Electronic Thesis and Dissertation Guide*, available at [www.grad.auburn.edu/etd\\_guide.html](http://www.grad.auburn.edu/etd_guide.html).
13. Request graduation check in the Graduate School no later than the last day of the semester (graduation day) prior to the semester of graduation.
14. Register for at least one course the semester of graduation.
15. Prepare dissertation and submit a committee-approved first draft to the Graduate School for review and approval by the University Reader, who serves as the representative of the graduate faculty.
16. Study recommendations of the University Reader and make appropriate changes in the dissertation.
17. On approval of the dissertation by the dean of the Graduate School, arrange for final oral examination.
18. File an Academic Residency form.

### The Doctor of Philosophy Degree

The doctor of philosophy is conferred in recognition of the mastery of a special field of learning as shown by the satisfactory completion of a prescribed course of study and investigation, the successful passing of general examinations covering the major and minor fields, the preparation of an acceptable dissertation reflecting high achievement in scholarship and independent original investigation, and the passing of a final examination on the dissertation and related subjects. The degree is a research degree. It is not conferred merely upon fulfillment of technical requirements, but awarded in recognition of the ability to think and work independently, originally, and creatively in a chosen field. Some departments have special requirements for the degree, and the student will be governed by those, including the ones listed in departmental statements under Courses of Instruction elsewhere in this publication.

### Language Requirement

Language requirements for graduate degrees vary with departments. The Department of Foreign Languages offers proficiency courses in a number of languages. The department also offers reading proficiency examinations for those students who wish to demonstrate proficiency without taking a course. Such students must apply to the Graduate School for these examinations by the deadline listed in the Graduate School calendar at the beginning of this bulletin.

## Course Requirements

The Graduate School requires a minimum of 30 semester hours graded (e.g. A, B, C) graduate course work (6000-level and above) beyond the bachelor's degree, and at least 30 semester hours of additional course work which may include ungraded courses, 7990 and 8990. Students may transfer up to 30 hours from a previously awarded master's degree with the approval of the advisory committee and the dean of the Graduate School; such transfer credit must fall within the time limits of the degree. At least 21 semester hours must be completed as a graduate student at Auburn University. The minimum number of hours in a doctoral program is 60 semester hours beyond the bachelor's degree, but some departments require more, and requirements may vary according to a student's background and interests. A maximum of four hours of 7990 (Research and Thesis) from a completed master's program may be counted.

All doctoral students must complete a minimum of 10 hours of 8990. Enrollment in 8990 may take place at any time the student and the advisory committee deem appropriate. During any one semester, the number of hours of 8990 in which the student enrolls should reflect the amount of time being spent on the dissertation and the degree to which university resources are being utilized. Students may enroll, during any one semester, for as few as one hour or as many as 16 hours of 8990. Dissertation students submitting their dissertation, awaiting committee review and approval, or taking their final examination must register for 8990 Research and Dissertation in the semester(s) when these steps in the process take place. The requisite 10 hours of 8990 should be included in the Plan of Study. No grade is assigned.

The dean of the Graduate School is authorized to approve alternatives to these course work requirements in exceptional cases and on an individual basis.

## Dissertation

A dissertation is required of all candidates for the degree of doctor of philosophy. It shall constitute an original contribution to knowledge. The student conducts the research and prepares the dissertation under the direction of the major professor. Only dissertations prepared according to *Electronic Thesis and Dissertation Guide*, available on the Web at [www.grad.auburn.edu/etd\\_guide](http://www.grad.auburn.edu/etd_guide), are accepted by the Graduate School. Submission of a dissertation is defined as the time at which the first complete draft of such is submitted to the major professor for review. All dissertations must be published by ProQuest/UMI. The student is required to pay for this service. Auburn University reserves the right to make copies of the dissertation, but the student retains all publication rights. Effective summer 2005, all dissertations must be published electronically through AUETD.

## Graduate Degrees Offered

### Accountancy - MAc

The Master of Accountancy (MAc) is a professional non-thesis degree program. Criteria for admission and degree requirements are established by the School of Accountancy. This program is available to individuals with a four-year degree business degree from an accredited institution and a strong academic background in the fundamentals of business and accounting.

Requirements for the MAc include 30 semester hours of course work including a capstone course (ACCT 7980/7986) and a four and one-half day on-campus residency. The curriculum offers students the flexibility to tailor the program to meet their specific career objectives. Students take only four core courses and choose three accounting electives and three business electives. The MAc degree can be earned as a traditional, on-campus student or through the video-based outreach program.

Information concerning specific requirements may be obtained by visiting [www.mac.business.auburn.edu](http://www.mac.business.auburn.edu) or contacting the Office of Accounting Graduate Programs, at [mac@auburn.edu](mailto:mac@auburn.edu) or (334) 844-6207.

### Aerospace Engineering - MAE., MS, PhD

Graduate study in aerospace engineering leads to the degrees of master of science, master of aerospace engineering and the doctor of philosophy. The graduate program prepares students for careers in the aerospace industry, in government laboratories and in academia. Studies for the PhD also are designed to produce research scholars.

Applicants should have a bachelor's degree in aerospace engineering or its equivalent from an institution of recognized standing, plus

satisfactory GRE scores. Degrees in mathematics, physics and certain other engineering disciplines may also be appropriate for entrance into the graduate program. Applications must be approved by the department's committee on graduate study.

For the master of science, the student must complete an approved program of at least 30 credit hours in aerospace engineering or closely related supporting subjects at the 6000-level or above. The master of science degree requirements include the completion of a thesis under the supervision of a major professor and an advisory committee.

The master of aerospace engineering is a non-thesis degree for which the student must complete an approved program of at least 33 hours of course work at the 6000-level or above. A suitable project in aerospace engineering, culminating in a final written report approved by the student's advisory committee, may be substituted for three credit hours of course work. An oral presentation is also required for the MAE degree.

For both the MS and MAE degrees, at least half of the required credit hours must be completed in aerospace engineering courses.

For the doctor of philosophy degree, the student must complete a minimum of 60 credit hours beyond the bachelor's degree. A plan of study will be arranged on an individual basis and students may elect to specialize in the general areas of aerodynamics, computational fluid dynamics, control theory, flight dynamics, orbital mechanics, propulsion, structures or structural dynamics. A written qualifying examination and a general doctoral examination, with both written and oral parts, are required of all doctoral candidates. An oral defense of the doctoral dissertation is also required of each student.

There is no language requirement for the master's or PhD degrees.

### Agricultural Economics and Rural Sociology - MS, MAg Applied Economics - PhD

Graduate degrees in the Department of Agricultural Economics and Rural Sociology (DAERS) include the master of science (MS) and master of agriculture (MAg) in agricultural economics or rural sociology, as well as the PhD in applied economics. Admission to the masters program in agricultural economics requires a bachelors degree from an accredited institution with 15 semester hours in related courses including economics, sociology, statistics, or related subjects accepted by the Graduate Committee. Admission to the masters program in rural sociology is administered by a separate interdepartmental program.

The MS in agricultural economics (thesis option) requires a minimum of 30 semester hours of graduate credit with up to 6 hours of thesis research. Advanced Microeconomics I (ECON 6020), Mathematical Economics (ECON 7130), Econometrics I (AGEC 7590), and Research Methods (AGEC 7700) are required of all MS students. Course substitution for ECON 6020 will be allowed upon approval of the Graduate Program Officer. This is a total of 12 hours of required courses in a program of 24 course hours. The remaining 12 hours can be filled with any graduate-level courses approved by the major professor and thesis committee. At least one-half of all credit hours toward the minimum degree requirement must be earned in courses at the 7000-level or above.

There is a non-thesis MS option that requires 36 hours of course work. Twelve of these hours must be in core courses (ECON 6020, ECON 7130, AGEC 7590, and AGEC 7700). The remaining 24 hours can be filled with any graduate-level courses approved by the major professor and graduate committee. At least one-half of all credit hours toward the minimum degree requirement must be earned in courses at the 7000-level or above. The non-thesis option requires a "Plan B" paper that serves as the basis for the student's final oral exam.

Graduate study in rural sociology in either the MS or MA degree is available through the interdepartmental graduate program involving rural sociologists from DAERS as well as sociologists and anthropologists from the Department of Sociology, Anthropology, and Social Work and the Department of Sociology at AUM. More information can be found in the Interdepartmental Programs.

The master of agriculture (MAg) in either agricultural economics or rural sociology requires 32 graduate credit hours, 18 in the major, as approved by the advisory committee. A final oral examination is given by the advisory committee.

The MBA in agribusiness or natural resources and environmental management is offered in coordination with the College of Business. Requirements include 36 graduate credit hours with 24 hours in business and 12 hours in agricultural economics or a closely related area approved

by the director of the MBA program and the major professor in DAERS.

A PhD in Applied Economics is offered through the interdepartmental program in economics, which is administered jointly by the Department of Agricultural Economics and Rural Sociology and the School of Forestry and Wildlife Sciences. The PhD in Applied Economics requires a minimum of 42 credit hours beyond a masters degree or 60 hours beyond a bachelors degree, plus at least 10 hours of dissertation research. All students must take a two-course sequence in microeconomic theory (ECON 7110 and ECON 7120), one course in macroeconomic theory (ECON 7210 or ECON 7220), and four courses in econometrics (ECON 7310 or ECON 7320, AGECE 7590, AGECE 7690, and AGECE 8690). In addition, the following courses are required: Mathematical Economics (ECON 7130), Production Economics I (AGECE 7080), Resource Economics II (AGECE 7090), Economic Development (AGECE 7110), Research Methods (AGECE 7700), Research Paper (AGECE 7970), Demand and Market Analysis (AGECE 8060), Production Economics II (AGECE 8080), Food and Agricultural Policy (AGECE 8090). This is a total of 48 hours of coursework in a program of 60 (42) course hours beyond the bachelors (masters) degree. The remaining hours can be filled with any courses at the 6000-level or above approved by the major professor and thesis committee.

The PhD written preliminary examination requirement is satisfied by a Research Paper due July 31 after the first year of coursework. In addition, PhD students with a GPA below 3.5 In their first-year core courses must pass- written examinations in microeconomics and econometrics. There is an oral examination on the field and proposed dissertation research, and a final oral defense of the dissertation. PhD students are encouraged to consider a graduate minor in statistics, which requires 12 hours of coursework in statistics (see Statistics Department web site for details).

A Graduate Minor in Agricultural Economics (GMAE) is offered for non-majors wishing to obtain training in the application of economic principles to problems affecting rural communities and households. The GMAE requires 12 credit hours of graduate-level coursework in agricultural economics (6 hours must be at the 7000 level or above). The student's graduate committee must include a faculty member from the agricultural economics department, and the student must demonstrate competence in the application of economic principles to problems in research. The latter requirement is typically met via a chapter or section in the student's thesis or dissertation.

#### **Agronomy and Soils - MS, MAg, PhD**

Graduate training in this department enables outstanding students to achieve a high level of scholarly attainment in the soil, crop and environmental sciences. Within these broad areas, research training and experience may be gained in the specialized fields of soil fertility and plant nutrition; soil chemistry; soil genesis, morphology and classification; soil mineralogy; soil physics; soil microbiology; plant breeding and genetics; weed science; forage, fiber, bioenergy and grain crop production; crop ecology; environmental quality; and turf management.

There is no specific schedule of courses for graduate students in this department. Candidates for advanced degrees should have adequate training in basic sciences. The Graduate Studies Committee evaluates each applicant's record and determines prerequisite deficiencies. Qualified students lacking prerequisite subjects can be admitted, but will be required to complete course work to satisfy deficiencies. After clearing pre-requisites, the course of study is determined by the student and advisory committee. Students are encouraged to take courses offered by other departments, especially those offered in chemistry, entomology, plant pathology, plant physiology, physics, botany, statistics, zoology, and horticulture.

There is no foreign language requirement.

Three degrees are offered: 1) master of science (MS), earned only under the thesis option; 2) master of agriculture (MAg) earned under the non-thesis option; and 3) doctor of philosophy (PhD), which requires a dissertation.

Graduate students in a program requiring a thesis or a dissertation will register for at least one hour of AGRN 7990 or AGRN 8990 per semester. Research Associates and similar classifications who also are graduate students are exempt from this requirement but must complete 10 hours of 7990 in the master's program or 20 hours of 8990 if in a PhD program. Agronomy and Soils graduate student handbook can be viewed: <http://www.ag.auburn.edu/agrn/handbook.pdf>.

#### **Animal Sciences - MS, MAg, PhD**

Graduate study in animal sciences is directed toward the master's and doctoral degrees. The master of agriculture (MAg) is offered as a non-thesis degree and prepares students for careers in secondary education, Cooperative Extension and agribusiness. Graduate programs leading to the MS and PhD degrees provide advanced education and technical training in preparation for careers in public and private sectors related to animal science and technology, food science and technology, animal biotechnology, agribusiness and university-level research and education. Areas of specialization include animal nutrition, biochemistry and molecular biology, microbiology, behavior, growth biology, meat science and muscle biology, quantitative genetics and reproductive biology. Interdepartmental minor programs in cell and molecular biosciences, ecology and environmental sciences are also available.

The MAg degree requires successful completion of a minimum of 30 credit hours, 21 of which must be in the agricultural or related sciences. Additional courses may be required for individual students.

Admission to the MS degree program requires that student have the bachelor's degree or evidence of satisfactory progress toward attainment of the bachelor's degree in animal sciences or a related area. Applicants lacking suitable preparatory course work in the basic sciences will be required to correct deficiencies by satisfactorily completing additional courses. The MS requires a minimum of 30 credit hours of graduate work, including at least 21 credit hours in the major field of study. The remainder may be in a minor area selected by the student and upon approval by the advisory committee. A research-based thesis is required.

Admission to the PhD degree program usually requires that the student have a master's degree from a recognized graduate program. However, evidence of exemplary potential may be considered as a criterion for admission with a bachelor's degree. The doctoral program emphasizes original, scholarly research and includes significant advanced course work. The PhD degree requires a minimum of 60 credit hours beyond the bachelor's degree and a dissertation describing original research. There is no foreign language requirement, but knowledge of a foreign language may be recommended by the student's advisory committee.

All graduate students receiving departmental assistantships are expected to be engaged in service to the department's research and education programs as deemed appropriate by the academic advisor and department head. All MS and PhD students must register for at least one credit hour of thesis or dissertation research each term. Classified (FLSA-exempt) research associates holding full admission status in the Graduate School for work toward a graduate degree are exempt from this requirement, but must complete 10 hours of thesis research in a MS program or 20 hours of dissertation research in a PhD program following completion of a master's degree. A PhD degree program undertaken by classified (FLSA-exempt) research associates but not preceded by a master's degree must include 30 hours of dissertation research credit.

#### **Audiology Program - AuD**

The Department of Communication Disorders offers a first professional degree program of study, the doctor of audiology (AuD) degree. The program is a cooperative program with the Department of Communication Disorders at Auburn University Montgomery. The doctor of audiology (AuD) program is designed to provide students with academic and clinical practicum experiences that will meet or exceed the requirements of the American Speech-Language-Hearing Association (ASHA) for the Certificate of Clinical Competence in Audiology (CCCAUD).

The academic and clinical components of the doctor of audiology program interact in a logical manner as the curriculum progresses over a four year period. A total of 121 hours are required for the degree. The early portion of training is largely academic and the later portions involve mostly applied clinical work. Thus, as the program progresses, the balance of academic and clinical work changes substantially.

During the first two years of the program the emphasis is largely on academic preparation for clinical work. This begins with the bases of clinical audiology which includes courses in research methods, neurology, hearing science, and counseling. In the second year of the academic program the student is exposed to coursework in auditory disorders and clinical methods. Courses include hearing disorders, hearing instruments, aural rehabilitation, central auditory processing disorders, auditory brainstem response, electronystagmography and pediatric audiology. In the third year of the program, academic courses

are largely involved with advanced seminars on current issues in clinical practice and the completion of an applied clinical research project or "capstone experience." During this third year of the program students are engaged in a series of intensive clinical internships at local off-campus clinical settings. Students must intern at three different clinical settings during the third year and they return to campus to participate in seminars and work closely with their major professors on their capstone project.

In the final year of the program students will participate in a clinical residency during which they will work full-time for a period of nine months. Clinical residencies may be done at any facility in the United States where a certified audiologist agrees to supervise the student within ASHA guidelines.

#### **Biological Sciences - MS, PhD**

The Department of Biological Sciences offers graduate training leading to the MS and PhD degrees in biological sciences; a non-thesis master's degree is optional. Candidates for advanced degrees should have an undergraduate degree in an appropriate area from an accredited institution, with adequate training in biology, chemistry, physics and mathematics. Qualified students lacking pre-requisite subjects can be admitted, but may be required by the departmental graduate studies committee to make up the pre-requisites. A satisfactory score on the general GRE is required (suggested minimums of 500 on verbal and quantitative tests).

A major of at least 30 and 60 semester hours may be taken for the MS and PhD degrees, respectively. MS and PhD students must present at least one departmental seminar on their research during the semester of their oral or final examination. There is no foreign language requirement.

Interdisciplinary minors may be taken in biochemistry, cell/molecular biology, ecology, environmental studies and plant, animal, or microbial molecular biology.

#### **Biosystems Engineering - MS, PhD**

Graduate study in Biosystems Engineering leads to master of science or doctor of philosophy degrees. Instruction, research training, and experience are available in various specialized fields such as ecological engineering; bioenergy and bioproducts engineering; food engineering, biological process engineering; biosystems automation and off-highway vehicle engineering. Applicants are expected to have earned a baccalaureate degree in biosystems engineering or a closely related area. A thesis or dissertation is required of all candidates for the MS and PhD degrees, respectively. A minimum of 30 semester hours of graduate-level course work must be completed successfully for the MS degree. Candidates for the MS must pass a comprehensive examination covering the course work, research, and thesis. A minimum of 60 semester hours of graduate-level course work beyond the bachelor's degree must be completed for the PhD degree. Written and oral qualifying examinations and written and oral final examinations are required of all doctoral candidates. All applicants should provide a written statement of purpose for their graduate study, three letters of reference, and all other data required by Auburn University. Additional details about the requirements, assistantships, and policies for graduate study in the Department of Biosystems Engineering are available at [www.eng.auburn.edu/bio](http://www.eng.auburn.edu/bio).

#### **Building Science - MBC**

The McWhorter School of Building Science offers the master of building construction.

The McWhorter School of Building Science's non-thesis master of building construction program provides its students with an unparalleled educational experience. From conceptual idea to post-occupancy of buildings, the degree content offers a practical and industry-oriented study of the interdisciplinary and collaborative processes involved in the design, construction, financing and management of the built environment.

For students holding an accredited undergraduate degree in construction, the curriculum consists of 35 semester hours of academic credit, including a core of BSCI graduate courses, taken over a period of three academic terms beginning in the fall of each year.

Students with undergraduate degrees in areas other than construction will embark on their graduate careers here at Auburn beginning with a series of five foundation courses commencing the summer term prior to fall admission. Upon successful completion of these classes, their course of study will merge with the other graduate students during fall semester,

and may be completed in four academic terms, for a total of 50 hours.

Admission to the master of building construction is competitive, and enrollment is limited. The admissions committee considers GRE scores, undergraduate GPA, educational background, letters of recommendation, prior construction industry experience, and other relevant information.

#### **Business Administration - MBA, MS, PhD**

Graduate programs in Business are fully accredited by AACSB International – the Association to Advance Collegiate Schools of Business (AACSB) – and include the master of business administration, the master of science in business administration with concentrations in finance, and human resources management (currently discontinued), the master of accountancy, the master of science in management information systems, and the doctor of philosophy in management.

Application for admission to graduate programs in Business should be made directly to the Graduate School, with follow-up materials (including letters of recommendation and essays) as required to the specific program. The application should be accompanied by test scores on the Graduate Management Admission Test (GMAT). Supplemental application forms are also required for the MBA program.

#### **Chemical Engineering - MChE, MS, PhD**

The Chemical Engineering Department offers graduate programs leading to the degrees of master of science and doctor of philosophy. Specialized courses and research training are provided in a wide variety of specialties within chemical engineering or related interdisciplinary areas. Some of these specialties include: surface science, biochemical engineering, catalysis, pulp and paper engineering, environmental engineering, waste conversion, computer-aided process design and simulation, novel bioseparations systems, chemical kinetics and reactor design, biomedical engineering, process control and optimization, thermodynamics, advanced energy research, mass and energy transfer, electrochemical engineering, polymer engineering, interfacial phenomena, process synthesis, material science, nanotechnology, and space science. Additionally, individualized interdisciplinary programs which cross the traditional departmental boundaries are encouraged. These may include collaborative work in chemistry, engineering disciplines, physics, mathematics, agriculture, forestry, biology, microbiology, genetics and health sciences or other areas.

The applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing and must have the pre-requisite undergraduate experience in areas of study relevant to the proposed graduate program. If the applicant's undergraduate degree is other than chemical engineering, an individualized plan of study will be developed to impart the critical skills inherent in the bachelor's chemical engineering program. All applicants will be evaluated on an individual basis by the Chemical Engineering Graduate Committee.

The master of science may be earned only under the thesis option. There is no language requirement for this degree. A total of 30 semester hours of work is necessary, including formal courses, seminars and directed reading. Students select three of the following core courses: CHEN 7100, CHEN 7110, CHEN 7200 and CHEN 7250. Each student may include six hours of research and thesis as a part of the 30 hours.

The master of chemical engineering, a non-thesis degree oriented toward engineering design and practice, is also offered. It has no residency requirement and can be earned entirely through the Engineering Outreach Program. The degree requires 32 semester hours with a minimum of 16 at the 7000-level. In-depth understanding is provided through a minimum of 21 graduate course hours in the major, chemical engineering, plus eleven graduate course hours in technical electives from engineering, science, mathematics, or business which are tailored individually to the student's background and interests. There are three core courses: CHEN 7100, CHEN 7200 and CHEN 7250.

The doctor of philosophy provides for advanced course work and emphasizes original, creative research. A dissertation embodying the results of this research represents the major portion of the requirements for this degree. A minimum of 60 semester hours of graduate work past the bachelor's degree is necessary. Each student may include 10 hours of research and dissertation as a part of the 60 hours.

Four calendar years beyond the bachelor's degree or three past the master's degree usually are needed to complete the PhD.

The written General Examination is based on the evaluation of performance in core graduate courses: CHEN 7100, CHEN 7110, CHEN 7200, CHEN 7250.

There is no language requirement for the PhD.

#### **Chemistry and Biochemistry - MS, PhD**

Graduate study in chemistry leads to the M. S. and PhD degrees. Entering students must take four of the five required core courses: CHEM 7100, CHEM 7200, CHEM 7300, CHEM 7500 and BCHE 7200, with the consent of their advisor. By the end of the second semester, graduate students must submit a plan of study which details the courses which will be taken. This is done with the assistance of the major professor and with the consent of the student's advisory committee. For the MS the plan of study will consist of a minimum of 30 hours, including the core courses listed above (12 hours); CHEM 7990 (4 hours), CHEM 7750 (1 hour), CHEM 7950 (4 hours). For the PhD 60 hours of courses must be completed. These must include the core courses listed above (12 hours), CHEM 8990 (10 hours), CHEM 7750 (2 hours), CHEM 7950 (6 hours). The rest of the courses usually are taken in the major area. Directed Study, CHEM 7930, may be taken for a maximum of 15 hours. MS students must pass three cumulative examinations; PhD students must pass 6 cumulative exams and an oral general examination. All graduate students must orally present their research and defend their theses or dissertations in the final oral examination.

#### **Civil Engineering - MCE, MS, PhD**

The Department of Civil Engineering offers graduate-level instruction and research programs leading to the degrees of master of civil engineering, master of science and doctor of philosophy. The objectives of these programs are to provide qualified students opportunities for advanced training and specialization and to enable them to gain experience in conducting engineering research and in the interpretation and communication of their findings. The department offers programs in construction engineering and management, environmental engineering, geotechnical engineering, hydraulics/hydrology, pavements and materials, structural engineering and transportation engineering. Course work may be taken outside the department in supportive disciplines such as applied statistics, building science, computer science or mathematics, provided there is justification for doing so.

All applicants must have earned a baccalaureate degree in civil engineering - BCE, BS or BSCE - or a closely related area and must have completed such formal training as to warrant advanced study in the major and minor fields. There is no formal foreign language requirement.

A thesis is required of all candidates for the MS. A minimum of 30 semester hours of graduate-level course credit must be completed satisfactorily. At least six of the 30 hours must be in CIVL 7990 and at least 24 hours must be in graduate course work other than CIVL 7990. Candidates must pass a comprehensive examination covering the course work, research and thesis.

Admission requirements for the master of civil engineering are basically the same as those for the MS. The program consists of a minimum of 30 semester hours of graduate-level courses. At least three of the 30 hours must be in CIVL 7980 and at least 27 hours must be in graduate course work other than CIVL 7980. Candidates must pass a comprehensive examination covering the course work and the engineering project involved.

PhD program applicants must have earned the master's degree in civil engineering or a related area, or must have completed at least a year of study at the graduate level. Performance in either case must have been of such quality as to justify admission to the doctoral program.

The PhD is conferred in recognition of mastery of a specific field of knowledge and a contribution to that engineering discipline through the doctoral dissertation. The degree is a research degree, requiring not only completion of certain technical requirements but proof of the candidate's ability to work independently within an engineering research environment.

A doctoral student must complete a written comprehensive examination with a follow-up oral critique administered by the student's advisory committee. The examination may not be taken sooner than one year after the student begins doctoral course work. Additional course work may be prescribed to strengthen deficiencies where examination results indicate a lack of significant academic preparation or the student may be denied the right to continue in the program. One retake may be permitted but no

earlier than one year after initial failure. Upon successful completion of the examination, the student becomes a candidate for the PhD.

After successfully completing the comprehensive examination, the doctoral candidate will defend the selected dissertation topic, which must represent a significant contribution to state-of-the-art knowledge. This may be included in the oral critique of the comprehensive examination if the advisory committee agrees. Once the committee approves the research topic, the doctoral candidate may proceed with the research and dissertation. When it is completed, the candidate will defend the completed dissertation before the advisory committee and the outside reader appointed by the Graduate School.

#### **Communication - MA**

The graduate program offers the master of arts.

Applicants must hold bachelor's degrees from accredited institutions. The MA-thesis requires 31 hours beyond the bachelor's degree, including a thesis. The MA-non-thesis requires 30 hours beyond the bachelor's degree, including appropriate field experience, but does not require a thesis. Students entering either program without a bachelor's degree in communication must earn an additional 9 credit hours at the graduate level.

The Communication major requires 31 semester hours in Communication for the MA-thesis and 30 for the MA non-thesis, including COMM 7000, COMM 7010, and COMM 7020. Students must pass a written qualifying examination covering COMM 7000, COMM 7010, COMM 7020 at the completion of these three courses to continue their program. All students must pass comprehensive examinations.

There is no foreign language requirement.

#### **Communication Disorders - MCD, MS**

The Department of Communication Disorders offers a program in Speech-Language Pathology which is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA).

Two degree options are available; neither has a language requirement. The master of science (MS) requires a minimum of 41 hours of graduate course work, including CMDS 7990, Thesis. CMDS 7920, Field Experience, is optional, depending on clinical experience. The master of communication disorders (MCD) requires a minimum 43 hours of graduate course work and appropriate field experience. This is a non-thesis degree but it does require the passing of a comprehensive examination.

Master's-level candidates who enter the communication disorders programs having majored in another field at the undergraduate level must make up certain pre-requisites. This is to ensure an adequate background for the graduate-level courses and that the student will meet the academic requirements for ASHA certification and state licensure. Generally, 10 such courses are prescribed by the student's advisor.

Enough latitude exists that a plan of study may be designed according to the student's career interests; however, the curriculum planned must conform to academic and practicum requirements for ASHA certification and Alabama licensure. Students then are prepared for careers in school systems, clinics, hospital/rehabilitation centers, physicians' offices, private practice and for pursuing the doctoral degree.

#### **Community Planning - MCP**

Graduate study in the community planning degree program leads to the professionally accredited master of community planning (MCP). The program is devised to prepare students with diverse backgrounds for careers in the practice of community planning in both the public and private sectors. The field of community planning demands creativity, technical competence and procedural sensitivity in the search for better communities. Graduates must be skilled at describing and analyzing urban processes and conditions; at creating and evaluating alternatives to shape future growth and development; and at devising and recommending appropriate mechanisms for the implementation of their proposals.

The program offers joint degree options with architecture, landscape architecture and public administration (each of which requires a separate application). Students may complete a minor in Economic Development. Entering students must hold a degree from an accredited institution and have acceptable GRE scores. Students will normally complete the required work in two academic years. Studies include a core sequence of lecture and studio courses, seminars on focused topics within the field,



a comprehensive examination, and a capstone (or synthesis) project undertaken in studio during the final semester.

#### **Computer Science and Software Engineering - MSwE, MS, PhD**

Graduate study in the Department of Computer Science and Software Engineering (COMP) leads to the non-thesis master of software engineering (MSwE) or research oriented master of science (MS) and doctor of philosophy (PhD) degrees in computer science and software engineering. All applications are reviewed by the COMP Graduate Admissions Committee.

To enter the MS or the MSwE, the student must hold a bachelor's degree or its equivalent from an institution of recognized standing. The student also must have the pre-requisite undergraduate experience in areas of computer science and/or software engineering. If the student has deficiencies in the pre-requisites, he or she will be required to take appropriate undergraduate courses. All applicants must submit Graduate Record Examination scores for the general test.

The MS program requires 30 semester credit hours, including six credit hours for research and thesis. The MSwE program requires 33 semester credit hours, including three credit hours for the software engineering design project. There is no language requirement.

For the PhD program, the applicant must hold a master's degree or have successfully completed a minimum of one academic year of graduate study, from an institution of recognized standing in an area related to the proposed doctoral study. All applicants must submit GRE scores for the general test. The student will take a written qualifying examination soon after gaining admission to the program. Additional examinations, as described in the general Graduate School requirements, are given throughout the program, culminating with the defense of the dissertation. There is no language requirement for the PhD. The program typically includes at least one academic year of course work and one year of research beyond the master's level. The PhD program requires a minimum of 66 semester credit hours of course work beyond the bachelor's level, including 18 hours of research and dissertation.

#### **Consumer Affairs - MS, PhD**

Graduate study in the Department of Consumer Affairs, College of Human Sciences, leads to the master of science and the doctor of philosophy. Major focus areas are apparel design or merchandising, interiors, and consumer behavior. The department emphasizes integration of basic and applied knowledge from multiple fields to enhance professional skills for careers in textile and apparel product development and design; production management; retail management; merchandising in textile and apparel retail or design firms; design of interior spaces; quality control; and college teaching and research. A foreign language is not required. Entrants with limited undergraduate backgrounds in their chosen area may need to complete some undergraduate courses. Graduate teaching and research assistantships are available.

The MS in Consumer Affairs - Apparel or Interiors offers a Thesis and a Non-Thesis Option. Individually designed focus areas incorporate courses in Consumer Affairs and other departments. Designated specialization tracks include consumer behavior; forecasting; marketing; retail management; interior design; international retailing; design and product development; and entrepreneurship. Students are encouraged to complete an internship with industry. At least 21 semester hours must be in apparel, interiors, or consumer-related courses.

The Thesis Option requires a minimum of 30 semester hours, including at least four hours of CAHS 7990 Research and Thesis. Required courses include CAHS 7050, 7950, 7990 (2 hour minimum each semester during thesis research), and a course in statistics at the graduate level.

The Non-thesis CAHS Option requires a minimum of 36 semester hours, including CAHS 7050, 7950, 7980, and a course in statistics at the graduate level. A Final Comprehensive Written Exam is required.

A PhD in Integrated Textile and Apparel Science is offered through the Department of Consumer Affairs, College of Human Sciences. The focus is on the integration of science design and consumer behavior within a research based product management approach for application in the global economy.

The PhD in Integrated Textile and Apparel Science requires a minimum of 30 semester hours of graded graduate level courses at the 6000-level or above; at least 18 of these hours must be completed at Auburn University. At least 30 additional hours of graduate level course work (6000-level or

above) must be completed (may include ungraded 7990 and 8990). A ten-hour core is common to all PhD candidates. Courses include CAHS 8950, 8960, 8970 and 8990 Research and Dissertation (a minimum of 10 semester hours). Students must register for at least 2 semester hours of CAHS 8990 each semester they are working on dissertation research.

Students must pass a written and an oral General Examination after completing courses in the PhD core. A final oral defense of the dissertation is required.

A foreign language is not required. Entrants with limited undergraduate backgrounds in their chosen area may need to complete some undergraduate courses. Graduate teaching and research assistantships are available.

#### **Counselor Education, Counseling Psychology, and School Psychology - MEd, MS, PhD**

See Special Education, Rehabilitation, and Counseling - MEd, MS EdS, PhD.

#### **Curriculum and Teaching - MEd, MS, EdS, PhD**

Graduate programs in the Department of Curriculum and Teaching prepare teachers and leaders in early childhood, elementary, middle school, secondary, English for speakers of other languages, music, reading, and career and technical education. Secondary education teaching fields are English language arts, foreign languages, mathematics, science, and social science. Career and technical education teaching fields are agriscience and business/marketing education. Graduate study leads to master of education, master of science, specialist in education, and doctor of philosophy degrees. In addition, a graduate certificate is offered in TESL/TEFL.

Individuals completing State-approved graduate certification programs are eligible to apply for Alabama Class A (master's level) or Class AA (specialist level) certification. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application forms and requirements. Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). In addition, the State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of AU's graduates when they apply for certification in other states.

Admission to graduate programs in the Department of Curriculum and Teaching is competitive in respect to past achievement, scholarship potential, and professionalism. Those seeking admission to graduate programs must have a bachelor's or master's degree from an accredited college or university. Admission to doctoral programs requires competitive GRE scores, current resume, statement of purpose, letters of recommendation, and approval by the department. The typical combined GRE score at the doctoral level is above 1000 with a score of above 450 on each subtest. Admission to the specialist in education programs and the master's programs requires competitive GRE scores, letters of recommendation, current brief resume, and approval by the department. Typically, students admitted to the specialist in education degree programs and the master's programs have GRE Verbal Subtest scores above 400 and Quantitative Subtest scores above 400. Admission to traditional master's and specialist in education degrees requires documentation of appropriate teacher certification. Traditional master's degree programs leading to Alabama Class A certification require at least 30 semester hours of course work. MEd and MS options are available for most areas of specialization in the department. MS programs require a thesis; MEd programs do not.

Alternative master's certification programs offer qualified students who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree. These alternative routes to certification are currently offered in four secondary education teaching fields (English language arts, foreign languages, mathematics and science) and in two career and technical education fields (agriscience and business/marketing). To be eligible for admission to alternative master's programs, applicants must have earned a bachelor's or higher degree with a minimum GPA overall of 2.50, satisfy the State's teaching field admission requirements, and have competitive GRE verbal and quantitative subtest scores.

All alternative master's degree certification programs include courses in the teaching field, professional courses, and a full-time one-semester internship. Full-time graduate students should allow at least four semesters for completing alternative master's degree certification programs. Candidates in alternative master's certification programs are required to participate in the Alabama Prospective Teacher Testing Program including submitting a passing score on each of the Basic Skills Assessments (Applied Mathematics, Reading for Information, and Writing) and a passing score on the appropriate Praxis II subject assessment prior to internship. Graduation requirements for traditional master's programs in reading education and English for speakers of other languages include a passing score on the appropriate Praxis II subject assessment.

Specialist in education degree programs require at least 30 semester hours beyond the master's degree, including additional course work in professional education and the teaching field. Candidates must also complete a field project.

Doctor of philosophy programs are offered in career and technical education, early childhood, elementary, secondary English language arts, secondary mathematics, secondary science, secondary social science, music, and reading education. All doctoral programs require at least 80 semester hours beyond the bachelor's degree. Research methods and statistics and foundations of education courses are components of all doctoral programs. The remaining hours are divided between the area of specialization and approved support courses. Plans of study for students in secondary education fields must contain at least 30 semester hours of graduate courses in the appropriate teaching fields. Doctoral students must register for at least 10 semester hours of doctoral research while completing a dissertation.

#### **Design-Build - MDB**

The *Master of Design-Build* program at Auburn University is designed to prepare graduates for success in a new paradigm of integrated project delivery, and to prepare students who will be the professionals leading the future evolution of the design and construction industries. In the U.S., these industries are experiencing significant changes in the relationship between their respective professionals and the delivery systems they employ. Through a variety of models, these formerly fragmented professions are now crafting new ways of working together – and exploiting new collaboration technologies - to create more efficient, economical and sustainable projects in the built environment.

Historically, architecture and construction management students have been trained in separated academic environments that did not capitalize on opportunities to work collaboratively. The Master of Design-Build program at Auburn University seeks graduate students from the design, engineering and construction disciplines who will embrace teamwork, collaboration, and empathy between the differing roles and responsibilities of their counterparts. Commensurate with its mission, the degree will be offered through two tracks: one based on a studio teaching format and designed for graduates aiming for a design-based career path; the other grounded in construction management and designed for graduates interested in a construction-based career path. Each track includes significant collaborative opportunities in the design studio and classroom. Both tracks are three semesters (Fall-Spring-Summer), after which successful candidates would be awarded the *Master of Design-Build* degree.

The 36 credit-hour program features a refined focus that is unique; jointly housed in the School of Architecture and the McWhorter School of Building Science. Through current models of professional practice, it will deliver the development and study of high performance projects in the built environment via a dynamically collaborative and integrated framework. Among other tools, the program will capitalize on a new generation of digital resources such as BIM, parametric modeling, web-based shared work environments, and other innovations to facilitate collaboration.

See the program's Web site at [www.cadc.auburn.edu/design.build](http://www.cadc.auburn.edu/design.build); send inquiries to [design.build@auburn.edu](mailto:design.build@auburn.edu).

#### **Economics - MS**

Graduate study in economics leads to the MS degree. The graduate program prepares students for careers in business, teaching, government agencies and advanced study in economics at doctorate-granting institutions. The program permits flexibility to accommodate a range of student goals and concentration in specific areas of economics.

Students are required to complete at least 24 semester hours of course work in economics at the 6000-level or above, plus six hours of ECON 7990, Research and Thesis, plus the thesis. An oral defense of the thesis is required. There is no language requirement for the MS.

Applicants must hold a bachelor's degree or its equivalent from a recognized institution and present a minimum of 20 semester hours of undergraduate course work in economics, including Principles of Economics, Statistics and Intermediate Economic Theory. Students lacking pre-requisite courses may be required to take more than the 30 hours required for the MS degree. All applicants must submit Graduate Record Examinations scores. Admission to graduate work in Economics shall be determined by the department's Graduate Committee.

#### **Educational Foundations, Leadership and Technology – MEd, MS, EdS, PhD**

Those seeking full admission to graduate programs in the Department of Educational Foundations, Leadership and Technology must have a bachelor's or master's degree from an accredited college or university and submit Graduate Record Examination scores for verbal, quantitative, and writing subtests and the remaining admission requirements as identified by the department and Graduate School.

The department offers graduate degrees in the areas of administration of elementary and secondary education, administration of higher education, administration of supervision and curriculum, adult education, educational psychology and library media. In addition, the following graduate certificates are offered: college teaching and extension educator.

Master's level certification programs are offered in administration of elementary and secondary education and in library media. All State admission requirements including those pertaining to prior certification and teaching experience must be satisfied prior to admission. Graduation requirements for both programs include a passing score on the Alabama Prospective Teacher Testing Program's appropriate Praxis II subject assessment. Individuals completing these master's level certification programs are eligible to apply for Alabama Class A certification. The master's level program in administration of elementary and secondary education meets Alabama requirements for Class A instructional leadership. Specialist in education certification programs are offered in administration of elementary and secondary education and in library media. Individuals completing these programs are eligible to apply for Alabama Class AA (specialist level) certification.

Individuals seeking certification in educational administration or library media in states other than Alabama are responsible for contacting those state certification offices to obtain their application forms and requirements. Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). In addition, the State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of AU's graduates when they apply for certification in other states.

Master's level degrees are also offered in administration of higher education, administration of supervision and curriculum, and adult education. All master's degree programs require a minimum of 30-33 semester hours, including course work in foundations of education, electives (3-6 hours) and the area of specialization, including a practicum and/or internship. In addition, a specialist in education degree is offered in adult education. All specialist programs require a minimum of 30 hours beyond the master's degree, including a field project.

The department offers a doctorate in the areas of administration of elementary and secondary education, administration of higher education, administration of supervision and curriculum, adult education, and educational psychology. Research methods, statistics, and foundations of education are components of all doctoral programs. After coursework has been completed, doctoral students must register for at least 10 hours of dissertation credit while completing a dissertation.

#### **Electrical and Computer Engineering - MEE, MS, PhD**

Electrical and Computer Engineering (ECE) offers graduate programs of instruction and research leading to master and doctoral degrees. Instruction is offered and research facilities are available to support graduate study in control systems, digital signal processing and communications, wireless engineering, electromagnetics modeling and analysis, microelectronics, power systems, digital systems, and

computer engineering. Additionally, individualized programs that cross the traditional boundaries of engineering, mathematics and the sciences can be accommodated.

For admission at the master's level, the applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing. Master's degree programs are available to graduates of engineering curricula and, in cases of exceptional academic credentials, to graduates of mathematics and science curricula.

An applicant for admission to the PhD program must hold a master's degree, or have taken a minimum of one academic year of graduate study, from an institution of recognized standing in an area of study related to the proposed doctoral work. An applicant who holds a bachelor's degree in electrical or computer engineering and has exceptional academic credentials may apply for direct admission to the PhD program.

All applicants must submit Graduate Record Examination scores for the General Test, three recommendation letters, a statement of purpose, and a resume. International applicants must also submit scores for either the TOEFL or IELTS exam.

Applications for admission are reviewed by the departmental graduate faculty. Decisions are based upon the applicant's potential for success in advanced-level study as indicated by letters of reference, GRE scores and previous academic achievement.

The MS degree program of study (the thesis option) requires a minimum of 30 semester hours of work, including 4 to 6 semester hours of research and thesis. MS students must spend at least one semester of full-time study in residence. The MEE degree program (the non-thesis option) requires 33 semester hours of work, including a 3 semester hour project. Both masters programs must include courses in at least three of the major research areas in ECE, no more than 3 semester hours of independent study, and a final examination on either the thesis or the non-thesis project.

Students admitted to the doctoral program will take a written qualifying examination soon after entering, covering fundamental undergraduate material in ECE and first-year graduate material in the major area of study. Additional examinations are given throughout the program. The program generally consists of a minimum of 60 semester hours of course work beyond the bachelor's level, including at least 10 hours of research and dissertation. A minor of at least 9 semester hours in a closely related field outside of the major area of study, either within or outside of ECE, is required.

#### **English – MA, MTPC, PhD**

The Department of English offers programs leading to the master of arts, master of technical and professional communication, and the doctor of philosophy. The graduate program prepares students for careers in teaching and research, writing, editing, business, and other professions seeking broadly educated individuals skilled in analysis and communication. (In addition, individuals holding a teaching certificate may, with an additional graduate course in Communication, earn Alabama Class A or AA certification under a state-approved Strengthened Subject Matter Option program in English/Language Arts.)

MA — For admission to the MA program, the student must normally have a bachelor's degree from an accredited institution with the equivalent of 24 semester hours of credit in upper-division English courses and satisfactory scores on the general portion of the GRE. Applicants should also submit three letters of recommendation, a sample of their writing and a statement of purpose. Applicants lacking the required undergraduate courses must typically make up these deficiencies before they can be admitted to the degree program. For the MA, students may select one of the following three tracks: Literature, Composition and Rhetoric, or Creative Writing. Each track requires a minimum of 30 credit hours of coursework, a portfolio, and an oral examination in a major and minor area. The Literature track requires 3 major area courses (one pre-1800, one post-1800, 1 literary theory), 3 distribution courses (1 technical and professional communication, rhetoric and composition, linguistics, or creating writing; one comparative literature, genre, or author-based course; and one technology and culture, globalism, sustainability, or diversity course), 2 courses in a coordinated minor, and 2 elective courses (one of which must be ENGL 7040 for all GTAs). The Creative Writing track requires 3 major area courses (ENGL 7130 and ENGL 7140, with one repeated for a total of 3 creative writing courses), 3 distribution courses (1 pre-1800 literature course; 1 technical and professional communication, rhetoric and composition, or linguistics course; 1 technology and culture, globalism, sustainability, or diversity course), 2 courses in a coordinated

minor, and 2 elective courses (one of which must be ENGL 7040 for all GTAs). The Composition and Rhetoric track requires 3 major area courses (ENGL 7040, ENGL 7050, ENGL 7300), 3 distribution courses (1 technical and professional communication or linguistics course; 1 literature or creative writing course; 1 technology and culture, globalism, sustainability, or diversity course), 2 courses in a coordinated minor, and 2 elective courses. MA students must demonstrate a reading knowledge of one foreign language.

MTPC — For admission to the master of technical and professional communication program, the student must normally have a bachelor's degree from an accredited institution, satisfactory scores on the general portion of the GRE, and excellent writing skills. Undergraduate coursework in English is not required. Applicants should also submit three letters of recommendation, a sample of their writing and a statement of purpose. The MTPC requires a minimum of 30 credit hours, consisting of four required courses (ENGL 6000 Technical and Professional Editing, ENGL 6010 Document Design in Technical and Professional Communication, ENGL 6030 Topics in Technical and Professional Communication, and ENGL 7010 Technical and Professional Communication: Issues and Approaches), nine hours of elective courses in English approved by the student's advisory committee, and nine hours in a coordinated minor approved by the student's advisory committee. Students must compile a portfolio of work accepted by the student's advisory committee and pass an oral examination.

PhD — For admission to the PhD program, the student must normally have a master's degree in English and satisfactory scores on the GRE General Test. Applicants should also submit three letters of recommendation, a sample of their scholarly writing and a statement of purpose. The PhD requires a minimum of 60 credit hours beyond the BA, including 10 hours of dissertation credit. Students entering our program with an MA in English from Auburn or from another institution transfer in their coursework; in consultation with their Graduate Advisory Committee doctoral students then select additional courses towards a PhD in English with a concentration in Literature or Composition and Rhetoric. After completing course work, students take general doctoral examinations, both written and oral, over three related areas. These areas might include a literary period, a genre, an issue in composition or rhetorical studies, language and linguistics, or literary and cultural theory. After passing these examinations, students write and defend a dissertation. Doctoral students must demonstrate a reading knowledge of two foreign language or advanced proficiency in one foreign language.

The department offers financial aid in two forms, fellowships and assistantships. Graduate Teaching Assistantships are generally available for the most qualified students. Assistantships are renewable, provided that students teach satisfactorily and make adequate progress toward the degree. A few outstanding applicants also receive first-year fellowships. Review of applications for financial aid will begin on Jan. 15.

#### **Entomology - MS, MAg, PhD**

Graduate Degree Program study in entomology emphasizes basic and applied aspects of the science of entomology and leads to the degrees of master of science, master of agriculture and doctor of philosophy. Admission is based primarily on a combination of GPA and Graduate Record Examination scores. The graduate program prepares students for careers in teaching, research and extension with a variety of academic, governmental, state, private and industrial opportunities.

Master of science (MS) For a major in entomology at the MS level, the student should have a baccalaureate degree from a recognized institution with pre-requisite training in zoology, botany, chemistry, physics, and mathematics. Qualified students lacking mandatory courses may be admitted but will be required by the student's advisory committee to make up any deficiencies.

The MS program in entomology is available to qualified individuals who wish to pursue a master's level program that requires a thesis. Importance is placed on both classroom and research training. Students holding baccalaureate degrees in agriculture or the biological sciences may find this degree program helpful to their professional development and career goals. The educational goals and objectives of the MS degree program are to produce graduates who are fundamentally trained in the scientific principles and general knowledge of entomology and related sciences and who are able to apply these principles to successfully solve problems of an entomological nature or employ this knowledge at an advanced level of study.

The MS requires a minimum of 30 semester hours, including 14 core semester hours (ENTM 7200, Insect Physiology; ENTM 6440, Insect Morphology; and ENTM 6300, Systematic Entomology), ENTM 7950 (Seminar), and a thesis. A graduate-level course in statistics is also required. A minimum of 21 semester hours must be taken in entomology and a specialty area of at least 10 semester hours may be selected from related subject matter fields. There is no language requirement for the MS degree.

The master of agriculture (MAG) program with a specialization in entomology is available to qualified applicants who wish to pursue a master's level program that does not require a thesis. Emphasis is placed on both classroom and practical training with emphasis on a graduate internship that permits individual mentoring. Students holding baccalaureate degrees in agriculture, the biological sciences, and some aspects of business may find this degree program helpful to their professional development and career goals. The MAG with a specialization in entomology carries the same entrance requirements as the MS but is a non-thesis degree; an internship (ENTM 7920) and a course in statistics are strongly recommended. The MAG requires a minimum of 32 semester hours, 21 of which must be in entomology, including 14 core semester hours (ENTM 7200, Insect Physiology; ENTM 6440, Insect Morphology; and ENTM 6300, Systematic Entomology) and related courses with the remainder taken from a variety of subject areas determined in consultation with the student's advisory committee. A comprehensive examination is required after all courses are completed. There is no language requirement for the MAG degree.

The purpose of the PhD program in entomology is to produce graduates who are fundamentally trained in the scientific principles and general knowledge of entomology and related sciences and who are able to employ this knowledge at the advanced level of study and/or apply these principles to solve problems of an entomological nature. The PhD program requires 61 semester hours of course work, including 14 core semester hours (ENTM 7200, 6440, and 6300), ENTM 8950, and a dissertation based on the student's original research. A graduate-level course in statistics is also required. Of the 61 semester hours, 30 must be graded graduate courses 6000 and above, 20 of which must be completed under the 09 classification at Auburn University while registered in the PhD program. A doctoral student must also complete 30 hours of additional course work (may include ungraded courses and 7990, 8990). There is no language requirement for the PhD.

#### **Finance - MSBA**

The MSBA program offers specialized training to graduate students desiring a more intense background in the field relative to the general preparation provided by an MBA. The objective of the program is to prepare students for careers in their chosen profession or for further graduate work. The program has a thesis and non-thesis option (the non-thesis option requires additional course work). The program of study is determined by the student and the student's advisory committee based on the student's background and areas of interest.

#### **Fisheries and Allied Aquacultures - MAg, MS, PhD**

Graduate study in the Department of Fisheries and Allied Aquacultures leads to the degrees of master of aquaculture, master of science and doctor of philosophy. The program prepares students for productive careers in the private and public sectors in aquaculture, aquatic ecology, and fisheries biology and management.

Students desiring admission for graduate study should have a degree from a recognized institution and should have adequate course work in biology, zoology, botany, chemistry, physics, and mathematics. Qualified students lacking an adequate background in these areas may be admitted but may be required to correct deficiencies after they enroll at Auburn.

The non-thesis master of aquaculture degree is offered to students seeking broad practical training and preparing for a career in aquaculture management and extension work. The degree requires successful completion of a minimum of 42 40 semester credit hours beyond the bachelors' degree and includes a 3 to 5 - month internship. Included in the 40 hours are six core departmental courses (FISH 6210, 6220, 6240, 6250, 6410, & 7640; 20 hours) and several business-related courses (6 - 12 hours).

The master of science degree combines classroom study and an introduction to scientific research. A minimum of 30 semester credit hours are required. At least 9 hours must be taken in a separate but closely

related area of concentration. A minimum of 4 semester hours of FISH 7990 (Research and Thesis) are required but no more than 6 semester hours may be counted toward the degree.

Admission to the doctor of philosophy degree program usually requires that the student have a master's degree from a recognized graduate program. The doctoral program emphasizes original, scholarly research and includes significant advanced course work. The PhD requires a minimum of 60 semester credit hours beyond the bachelor's degree and a dissertation describing original research. A minimum of 30 hours must be graded graduate courses, 21 of which must be taken at Auburn University.

All graduate students are expected to be engaged in service to the department's research and education programs as deemed appropriate by the academic adviser and department head. All students receiving departmental assistantships must be registered as full-time students each semester, and all MS and PhD students must be registered for at least one credit hour of thesis and dissertation research each semester. All students receiving departmental assistantships must be registered for at least one course (anything carrying an Auburn University course number) during each academic term of the assistantship.

#### **Forestry - MNR, MS, PhD**

Graduate study in forestry leads to master of natural resources (MNR), master of science (MS), and doctor of philosophy (PhD) degrees. Three MNR options are available. One, for students with undergraduate degrees in forestry, involves primarily advanced course work and can be completed in one year. A second MNR option is for individuals with baccalaureate degrees in fields other than forestry that are interested in becoming Registered Foresters in Alabama. This option is a two-year program which begins with a 10 week summer Field Practicum. The third MNR option is for individuals with a biologically related baccalaureate degree that are interested in careers in the management and policy making for our natural resources. This option can be completed in 3-4 semesters depending upon coursework selected. The MS program, which involves research and a thesis, and normally requires two years for completion, can be tailored for students with degrees in forestry, the biological sciences, physical sciences, economics, engineering and business. MS and PhD degrees are offered in the fields of forest biology and ecology, forest measurements, forest management/economics, timber harvesting/forest operations and forest products. A PhD in economics is also offered through the interdepartmental program in economics which is administered jointly by the Department of Agricultural Economics and Rural Sociology and the School of Forestry and Wildlife Sciences. An urban forestry minor, administered in cooperation with the Department of Horticulture, is available for MNR, MS, and PhD degrees.

In addition to meeting admission requirements of the Graduate School, applicants are evaluated and recommended for admission by the graduate faculty of the School of Forestry and Wildlife Sciences on the basis of a holistic examination of their scores on the Graduate Record Examination (GRE), their previous academic record, experience, and recommendations. While the following are not absolutes, the faculty generally expects a minimum GPA of 3.0 in previous academic course work and minimum scores of 450 on the verbal and 550 on the quantitative element of the GRE. Applicants not holding a BS in forestry may be required to take necessary background courses. These needs are determined by the student's advisory committee and approved by the dean with due consideration for the student's previous training and experience. There is no foreign language requirement for any of the graduate degrees.

The MNR option for students with an undergraduate degree in forestry requires a minimum of 36 semester hours of graduate courses. The MNR option for students with a baccalaureate other than forestry and interested in becoming Registered Foresters requires a minimum of 70 semester hours (34 hours of specified undergraduate course work plus 36 hours of graduate course work). The MNR option for students with a biological baccalaureate requires a minimum of 36 semester hours of graduate courses. Requirements for all three MNR options include a MNR paper (FORY 7980), Graduate Seminar (FORY7950), and assist with one course during their degree in Practicum for College Teaching (FORY7910).

The MS degree program requires a minimum of 30 hours beyond the bachelor degree at the graduate level, 21 hours of which must be in the major. A minimum of 4 but not more than 6 hours in Research and Thesis (FORY7990) is required. All MS students are required to take Research

Methods (FOR7510), Seminar (FOR7950), and assist with one course during their degree in Practicum for College Teaching (FOR7910). A research proposal and thesis based on original research are major components of the MS degree.

The PhD degree requires 60 semester hours beyond the bachelor degree. There must be a minimum of 30 semester hours in graded coursework at the 7000-level or above. Of the remaining 30 semester hours, 10 hours must be Research and Dissertation (FOR8990) and 20 hours of 6000-level or above. While some these 60 hours can be from previous graduate work, such as a MS degree, a minimum of 18 hours of graded coursework at the 6000-level or above must be completed at Auburn. All PhD students are required to take Research Methods (FOR7510), Seminar (FOR7950), and Practicum for College Teaching (FOR7910). A research proposal and dissertation based on original research are required as major components of the PhD degree program.

More information on forestry graduate programs and degree requirements can be found at [www.sfws.auburn.edu/](http://www.sfws.auburn.edu/).

All MNR students are required to pass a comprehensive oral examination conducted by their Graduate Committee.

### Geography – MS

Graduate study in geography is directed toward the master of science degree. The MS degree provides an advanced understanding of key geographical concepts of space, scale, and distance in human and physical processes along with training in advanced geospatial analysis in preparation for employment in industry and government or further academic pursuits. The curriculum is oriented toward a broad applied geographic training with opportunity for specialization through electives, directed studies, and thesis or capstone research.

Admission into the master's program requires a bachelor's degree in geography or related discipline from an accredited institution, an acceptable undergraduate GPA, satisfactory scores on the Graduate Record Examination general test, and three letters of recommendation. Undergraduate course deficiencies may be required and can be made up during the student's first year in the degree program.

The thesis option MS degree requires a minimum of 30 semester hours and the successful completion of a thesis. The 30 hours include: 24 hours of graduate-level geography courses (including GEOG 6800 Geographic Thought, GEOG 6700 Quantitative Methods and Spatial Analysis, and 18 hours of graduate level electives of which 12 hours must come from geography). The non-thesis option requires a minimum of 39 semester hours and the successful completion of a comprehensive written and oral examination by the faculty committee. The 39 hours include: 6 hours of required courses (including GEOG 6800 Geographic Thought, GEOG 6700 Quantitative Methods and Spatial Analysis, and 33 hours of graduate level electives of which 18 hours must come from geography).

### Geology - MS

Graduate study in geology leads to the master of science. The graduate program is oriented toward providing a sound practical background in preparation for employment in industry or government service or further academic pursuits. The curriculum provides broad training in geology with the opportunity for specialization through electives, directed studies, and thesis or capstone research.

Admission into the master's program requires a bachelor's degree in geology (or related Earth science discipline) from an accredited institution with 40 semester hours in geology, an acceptable undergraduate GPA, satisfactory scores on the Graduate Record Examination general test, and three letters of recommendation. Undergraduate course deficiencies may be made up during the student's first year in the degree program.

The thesis option MS degree in geology requires a minimum of 30 semester hours and completion of a thesis. The 30 hours include: 21 hours of graduate-level geology courses (including GEOL 7100-Geocommunication); 3-5 hours of approved 6000- or 7000-level geology or supportive electives (no more than 3 hours of which can be GEOL 7930-Directed Study); and 4-6 hours of thesis. Students electing the non-thesis option must complete a minimum of 40 semester hours and a capstone project. The 40 hours include: 36 hours of graduate-level geology courses (including GEOL 7100- Geocommunication); and 4 hrs of approved 6000- or 7000-level geology or approved electives, all or a portion of which may be GEOL 7930-Directed Study or GEOL 7980-

Capstone Project. Both degree options require (1) satisfactory completion of a summer field course or comparable field experience prior to beginning the second year of residence and (2) demonstrated working knowledge of a computer language or computer-based geographic information system (G.I.S.) before graduation.

### History - MA, PhD

Graduate study in history leads to the degrees of master of arts and doctor of philosophy. Additionally, a graduate certificate in Public History is offered. The graduate program prepares students for careers in teaching, business, archival management, government, and research.

For admission to the MA program, the student must have a bachelor's degree from an accredited institution with 27 semester hours of history and a satisfactory GRE score. Applicants lacking course requirements must make up deficiencies before or after admission to the degree program. The MA requires a minimum of 31 hours (of which 21 must be in seminar courses, including HIST 7700) and a thesis. The MA program offers specializations in archival studies and public history, including practical training. The MA degree (non-thesis) is awarded to students in the doctoral program who have not previously earned the master's upon passing the General Examination for admission to candidacy for the PhD.

For admission to the PhD program, the bachelor's degree with 27 semester hours of history and a satisfactory GRE score are required. The program requires a minimum of 65 semester hours beyond the bachelor's degree (of which 43 must be at the 7000- or 8000-level exclusive of thesis or dissertation credit), including HIST 7700, 8700, 8710 and a dissertation. Candidates must demonstrate excellence in their major field of history and competence in two minor fields of history on their general examinations. In addition, students must take a minimum of 6 hours of course work outside their major and minor fields; the six may be taken in a discipline other than history. Major fields in history include (1) United States to 1865 (2) United States since 1865 (3) Europe 1500-1815 (4) Europe since 1789 (5) History of Technology. Minor fields and specializations are offered in all of the preceding, and additionally in Latin America, world history, public history, and archival studies.

There is no language requirement for the master's degree. The PhD requires a reading knowledge of at least one foreign language as determined by the student's doctoral committee. Language competency should be demonstrated before the student begins the second year of the doctoral program.

### Horticulture - MS, MAg, PhD

Graduate study in horticulture is directed toward the master of science and doctor of philosophy degrees. Graduates are prepared for careers in teaching, research, business, production, public service or extension. Master's-level programs are available to students with undergraduate degrees in horticulture and those from other fields seeking opportunities in horticulture-related careers. For the MS program, students must have a bachelor's degree in horticulture or a related area from an accredited university and have satisfactory GRE scores. Applicants from related areas will be required to correct any undergraduate course deficiencies. The MS requires a minimum of 30 credit hours of graduate work, including at least 21 credit hours in the major field of study. The student's plan of study is individually tailored by the student, major professor and advisory committee to meet the student's career goals. A thesis based on research by the student is required.

The master of agriculture is a non-thesis option which requires successful completion of 32 credit hours, 21 of which must be in agricultural sciences. Additional courses may be required for individual students and are determined by the major professor and advisory committee. There is no specific schedule of courses for MS or MAg students or a foreign language requirement for any graduate students in horticulture.

Graduate students in a program requiring a thesis or dissertation will register for at least one hour of HORT 7990 or 8990, respectively, per semester. Doctoral candidates must follow all Graduate School and departmental requirements concerning course work. However, the advisory committee may require additional course work. The doctoral program emphasizes original and creative research with a required dissertation.

### **Human Development and Family Studies - MS, PhD**

The Department of Human Development and Family Studies offers graduate instruction leading to the master of science with options in human development and family relations, and marriage and family therapy; and the doctor of philosophy with a focus on interpersonal competence and relationship dynamics within the context of the family. The department emphasizes the integration of knowledge from various fields for the purpose of understanding and developing professional skills for careers in college or university teaching and research, teaching and supervision in programs for young children, adolescents, parent education, marriage and family therapy, community service, Cooperative Extension, government, business and industry. To promote training and research, the Department operates the Auburn University Early Learning Center, Harris Early Learning Center of Birmingham and the Center for Marriage and Family Therapy. The marriage and family therapy option is accredited by the American Association for Marriage and Family Therapy Commission on Accreditation for Marriage and Family Therapy Education. Both the Auburn University Early Learning Center and Harris Early Learning Center of Birmingham are accredited by the National Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children.

For admission, a background in the social and behavioral sciences is highly desirable and should include course work in human development, family relations, anthropology, sociology, psychology and statistics. There is no language requirement for the MS or PhD degrees.

The MS requires a minimum of 30 semester hours in the human development and family studies concentration and 53 semester hours in the marriage and family therapy concentration, a thesis, and other fundamental work. See <http://www.humsci.auburn.edu/hdfs/grad-admissions.php> for specific requirements in these concentrations

The PhD program requires a minimum of 60 credit hours beyond the BS. This program requires course work with a theoretical and substantive emphasis in family and child relationships, a supporting emphasis that provides a multidisciplinary understanding of children and families, a research and statistics component, and an empirical dissertation.

Graduate research may focus on relationship studies at any stage of the life cycle, including parent-child, family, marital, non-marital, peer, friendship, and family-child care-work. Graduate assistantships are available to students who have achieved superior rank in their previous academic work.

### **Industrial Design - MID**

The department offers the master of industrial design degree accredited by the National Association of Schools of Art and Design (NASAD.) Applicants must have a bachelor's degree in industrial design or equivalent from an institution of recognized standing. Those with baccalaureate degrees from other disciplines may be admitted to the graduate program under condition that a minimum of 43 post baccalaureate credit hours in industrial design be completed at the undergraduate level with a 3.0 GPA. Students without an undergraduate Industrial Design degree are admitted during the summer semester and awarded a bachelor of science in environmental design (NASAD accredited) upon completion of the three-semester post baccalaureate program.

Upon admission to the master's program successful completion of 35 graduate level credit hours, including a thesis is required. A 40 credit hour non-thesis option is available. Credit for INDD 7990 Thesis may not exceed six hours. Course content beyond the 14 credit hour core curriculum will be structured to accommodate the student's area of interest. Completion of an industry collaboration studio (INDD 7910 Industry Practicum) is required. There is no language requirement. An external terminal document draft review and a 3.0 overall graduate GPA are required. Participation in department sponsored international travel programs may be used as credit towards graduation. Students are admitted only in the fall semester. Applications to the graduate program must be complete by 1 February 2012.

### **Industrial and Systems Engineering – MISE, MISE/MBA, MS, PhD**

The department offers the master of industrial and systems engineering, a joint program leading to both MISE and MBA degrees, the master of science and the doctor of philosophy. These programs are for students with undergraduate degrees in industrial engineering, other engineering disciplines, mathematics and sciences.

All applicants must submit Graduate Record Examination scores for the General Test except MISE/MBA applicants who may instead submit Graduate Management Admission Test scores.

Both the MISE and MS programs require 30 hours of course work. The MISE is oriented toward professional practice. MISE students must take 15 semester hours from a set of core courses, 12 hours of electives and either a three hour design project (project option) or an additional elective (coursework option). The MS requires the same 15 hours of core courses, nine to 11 hours of electives and a 4-6-hour thesis. Both degrees also require a minimum of one hour of seminar.

The MISE/MBA is a 54-hour program administered jointly by I.S.E. and the MBA program. It consists of 15 hours of I.S.E. core courses, 18 hours of MBA core courses, and a three-hour project jointly supervised by I.S.E. and MBA faculty or an additional I.S.E. elective and an MBA project. The remainder consists of 18 hours of electives if the student has more than two years work experience, or a six hour summer internship or international experience and nine hours of electives otherwise. Students must apply separately to each program (MISE and MBA).

Research involvement is the dominant element in the doctoral program. It provides a quality educational experience for selected individuals whose records indicate excellent potential not only for superior performance in course work, but also for the research and ensuing dissertation which is an original and scholarly contribution to the field. The PhD program requires at least 60 semester hours of coursework beyond the bachelors, including 15 semester hours of core courses. A minimum of one hour of seminar is also required. The student must demonstrate a high level of proficiency in a specific area of industrial and systems engineering as well as a competence in the entire field. The degree usually requires at least one calendar year of research.

### **Kinesiology - MEd, MS, PhD**

Graduate study in the Department of Kinesiology leads to the degrees of master of education (MEd), master of science (MS), and doctor of philosophy (PhD). The advanced programs prepare students for careers in teaching and research in educational settings, program management in clinical and corporate fitness settings, sport conditioning and management, as well as the fitness and sport-related industry.

For a major in kinesiology at the master's level, the student must have a bachelor's degree from an accredited institution and satisfactory Graduate Record Examination scores. Applicants without appropriate undergraduate degree preparation and course requirements may be asked to register in an appropriate undergraduate program before admission to the degree program or may be required to complete specific undergraduate courses prior to degree completion. Areas of specialization for the master's program include athletic training, biomechanics, exercise physiology, health promotion, motor development, motor learning, sport and exercise psychology, and pedagogy.

Master's-level certification programs are offered in physical education. Applicants for the traditional master's program must have bachelor's level certification in this area. The alternative master's certification program offers qualified students who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree. Applicants must have earned a bachelor's or higher degree with a minimum GPA overall of 2.50 and satisfy the State's teaching field admission requirements. Candidates in the alternative master's program are required to participate in the Alabama Prospective Teacher Testing Program including submitting a passing score on the Basic Skills Assessments (Applied Mathematics, Reading for Information, and Writing) and a passing score on the appropriate Praxis II subject assessment prior to internship.

Individuals completing the traditional master's or alternative master's programs in physical education are eligible to apply for Alabama certification at the Class A (master's) level. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application forms and requirements. Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). In addition, the State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of AU's graduates when they apply for certification in other states.

Graduate students interested in completing a minor in sports management must complete one course in each of the following

areas: sports studies, sports management, educational leadership and practicum. Six hours beyond the degree requirements are required for the sport management minor.

Requirements for the PhD program include the master's degree, satisfactory GRE scores, a statement of goals, and references. Areas include biomechanics, exercise physiology, motor behavior, and physical education pedagogy.

#### **Landscape Architecture - MLA**

Graduate study in landscape architecture leads to the graduate degree of master of landscape architecture (MLA). The MLA consists of 54 semester hours for those students entering with a design baccalaureate and 96 semester hours for students entering with a non-design baccalaureate.

The program is a studio design-based course of study that incorporates learning across disciplines of art, architecture, urban design, ecology, information technology, and the natural sciences. Extending the regional urban and rural context through the relationships between human dwelling and natural systems, the graduate will be prepared to take action in rebuilding human communities, reconnecting fractured ecosystems, and regenerating diverse habitats. In their final year of study, students are required to engage in either an individual design research thesis or a terminal studio that extends their design skills in a complex project. Joint degree options between the MLA, bachelor of architecture and the master of community planning are facilitated by a joint thesis option.

To enter the program, a student must have an undergraduate degree, meet the requirements for admission to the Graduate School and complete a statement that describes the candidate's personal interest and professional goals. Applicants to the MLA who have a design degree must submit a portfolio of work illustrating their design capabilities. All applicants must submit GRE scores before enrolling in 6000/7000-level classes. Students who have a design background enter the program in the Spring semester, those who have a non-design background enter in the Summer semester.

#### **Management - MSBA, MSIS., PhD**

The department offers graduate study leading to the master of science and the doctor of philosophy degrees in management. Applicants to each program must hold a bachelor's degree from a recognized institution. Additionally, students must complete a common body of knowledge curriculum comprising core courses in business. Graduates of business schools will likely have met this requirement; graduates of other programs may be required to complete additional courses to compensate for deficiencies.

The MSBA - HRMN program (currently discontinued) offers specialized training to graduate students desiring an intense background in human resource management. The objective of the program is to prepare students for careers in Human Resource Management or for further graduate work. The program has a thesis and non-thesis option. The program of study is determined by the student and the student's advisory committee based on the student's background and areas of interest.

The MSIS Program is a non-thesis program that emphasizes practical application of management information systems to managerial problem solving and decision making. Students are required to complete a final project. The program is designed to provide students the opportunity to develop an expertise in a chosen area of management. Applicants to the masters program must have completed an undergraduate degree and a common body of knowledge consisting of core courses in business is required. The MSIS program is offered as a traditional, on-campus program and as a distance learning program.

The PhD program prepares graduates to conduct high-quality research in universities, colleges government and business. Doctoral students choose one of two areas of concentration: organization studies, strategy and change, or management of information technology and innovation. Individual flexibility is provided in a program of study that develops the conceptual and methodological skills that graduates need to establish a leadership position in their chosen fields. Objectives of the program are accomplished through the completion of a formal program of study, successful completion of a statistics core, preparation and completion of two examination manuscripts, and dissertation research. Students with assistantships may also be required to teach. Students are expected to have a fulltime presence on campus. Applications to the PhD program

must complete a departmental application and an Auburn University Graduate School application. For full consideration, applications must be received no later than February 1, prior to the fall term.

#### **Materials Engineering - MME, MS, PhD**

Materials Engineering offers graduate programs of instruction and research leading to the degrees of master of materials engineering (MME), master of science (MS) and doctor of philosophy (PhD). All applicants must submit GRE scores for the General Test. Students completing all degree programs are expected to have knowledge in the following areas: mechanical properties; materials structure; materials thermodynamics; kinetics; and electrical, optical and magnetic properties of materials. There are no foreign language or minor requirements for Materials Engineering graduate degrees. All students must submit an approved plan of study within one year of matriculating in the program.

The MME is intended for those who expect to enter the engineering profession at an advanced level or are practicing engineers wishing to gain additional fundamental knowledge in the field of materials. Those students lacking the necessary background may be required to take additional course work. The requirements for the degree are 33 credit hours including a final engineering report. The topic of the report will be agreed upon by the student and the advisory committee. Applicants must have a baccalaureate degree in engineering or science from an institution of recognized standing. Students must pass a qualifying examination prior to taking the final general comprehensive examination required by the Graduate School.

The MS is intended for those who seek advanced knowledge in materials science or engineering for a career in research or other professional practice. The applicant must have a baccalaureate degree or its equivalent in an engineering or scientific discipline from an institution of recognized standing. Those lacking the necessary background will be required to take additional course work to ensure the continuity of their educational and professional experience. The MS program consists of 30 credit hours selected from areas of study appropriate to the objectives of the applicant and includes a thesis. Students must pass a qualifying examination prior to taking the final comprehensive examination required by the Graduate School. The PhD program requires that students pass qualifying examinations (oral and written) with a greater proficiency than master's students prior to taking the comprehensive examinations. The program is arranged on an individual basis with the student's advisory committee and in accordance with Graduate School guidelines. Students admitted to the doctoral program are required to take the general comprehensive examination based on a research proposal developed by the student within two years after entering the program. The student should be prepared to be examined in all areas of materials engineering.

#### **Mathematics and Statistics - MS, MAM, MPS, PhD**

The Department of Mathematics and Statistics offers programs leading to the master of science and doctor of philosophy in both pure and applied mathematics and statistics, the non-thesis master of applied mathematics, and the master of probability and statistics (also see Statistics). In addition, the department regularly offers actuarial science courses that are approved by both the Society of Actuaries and the Casualty Actuarial Society; they are designed to provide the background and material covered in the first three actuarial exams.

The master of applied mathematics gives students a strong foundation in one of several fundamental areas of applied mathematics. It is a flexible degree with courses being chosen in conjunction with the advisory committee, some of which may be relevant courses offered by other departments. The master of probability and statistics and the master of science in statistics degrees provide a solid foundation for careers involving applications of statistics. The master of science degree in mathematics develops both content knowledge of the student through coursework, and provides the opportunity to delve deeper into an area of mathematics through the writing of a thesis. The PhD is designed to give students a thorough understanding of a broad body of knowledge related to their field of study, as well as to develop their research capabilities. PhD students are required to pass one oral and three written preliminary examinations. A statistics concentration is available for the PhD degree (see Statistics).

The internationally known faculty of around 50 professors works in areas of algebra, analysis, applied mathematics, discrete mathematics, geometry, linear algebra, logic, numerical analysis, partial differential

equations, probability, set theory, statistics and topology. Some professors maintain applied research programs associated with several government and industrial laboratories, and one holds the Associate of the Society of Actuaries designation.

Admission to the program is based on a student's undergraduate record, three letters of recommendation from former teachers, GRE scores and graduate GPA (for doctoral students). The GRE subject test is not required. A bachelor's degree in mathematics is not required, but students without such a background may be expected to take additional courses to make up deficiencies. The department follows the guidelines for graduate degrees set forth in this bulletin. Doctoral students must satisfy the departmental preliminary examination requirement to continue their teaching assistantship. Course work in mathematics may be transferred from other institutions, subject to university limitations. (See <http://www.math.auburn.edu/>.)

Most students in the program are supported financially during their studies through Graduate Teaching Assistantships and through tuition waivers given to all teaching assistants (with some restrictions). The Baskervill, Fitzpatrick, and Haynesworth Fellowships (around \$5,000 each) are awarded annually to qualified students in the Department of Mathematics and Statistics. The department occasionally has Graduate Research Assistantships available in conjunction with departmental contractual research programs. The department requires that all international GTAs who have responsibility for teaching a class be proficient in English, passing the test of spoken English.

### **Statistics - MS, MPS**

The Department of Mathematics and Statistics offers degree programs leading to a master of science in statistics and a non-thesis master of probability and statistics. The master of science is designed to provide a suitable mix of theoretical and applied background for students interested in a career in statistics. The curriculum provides students with the necessary technical, analytical and interpretive skills required of professional statisticians while concentrating on education in the fundamentals of statistics and its interdisciplinary nature. Course offerings are structured to give students a variety of choices of specialization in order to pursue a career in academia, government or industry and/or further their pursuit of a PhD degree in statistics. For the MS degree the student must complete and defend a thesis and obtain a passing score on the related oral examination. The master of probability and statistics (MPS) is the non-thesis option in which students are required to complete a project that may involve statistical consulting, programming and/or data analysis. A PhD degree in mathematics with concentration in statistics is also available (see mathematics).

For those students whose graduate research includes a substantial amount of statistical methodology or data analysis, but who do not wish to pursue a degree, a graduate minor in statistics is available (see "Statistics" under "Graduate Minors").

### **Mechanical Engineering - MS, MME, PhD**

The Mechanical Engineering Department offers graduate programs of instruction and research leading to the degrees of master of mechanical engineering, master of materials engineering (see separate listing of graduate program in materials engineering), master of science, and doctor of philosophy. Educational and research facilities are available to support graduate study in solid mechanics, experimental mechanics, electronic packaging and reliability, fracture and failure mechanics, robotics, vibrations, controls, dynamical systems, engineering design, manufacturing, friction-lubrication-wear, engineering acoustics, computer-aided design, fluid dynamics, transportation systems, conventional and renewable energy systems, thermal/fluid sciences and nanotechnology applications. The applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing. If the applicant's undergraduate degree is other than mechanical engineering, an individualized plan of study will be developed to impart the critical skills inherent in the bachelor's mechanical engineering program. All applicants must submit Graduate Record Examination scores for the General Test and will be evaluated on an individual basis by the Mechanical Engineering Graduate Committee.

Non-Thesis Option: The MME is intended for those who expect to enter the engineering profession at an advanced level. Emphasis is placed on professional development. Requirements for the degree consist of

completing 30 credit hours of 6000-7000 level courses. A total of 21 credit hours of graded course work should be in mechanical engineering. There is a required faculty supervised project culminating in a final comprehensive oral examination by a committee of at least three faculty members including the major professor.

Thesis Option: The MS applicant must have a baccalaureate or its equivalent in an engineering or scientific discipline from an institute of recognized standing. The degree requires 30 credit hours of 6000-7000 level courses including 6 credit hours of MECH 7990. A minimum of 21 credit hours of graded course work should be in mechanical engineering courses. Substitution of courses from other engineering/science disciplines is permitted when appropriate courses are unavailable in mechanical engineering. All candidates must pass an oral defense of their written thesis including a comprehensive examination covering the major courses. A committee of at least three faculty including the major professor will take part in the thesis defense.

The doctor of philosophy provides for advanced coursework and emphasizes original, creative research. A dissertation embodying the results of this research represents a major portion of the requirements for this degree. The PhD program will consist of a minimum of 60 credit hours, including dissertation, beyond the BS degree. PhD students will select their major courses from those at the 7000-8000-level unless there are special requirements for more basic courses. A minimum of 21 credit hours of graded course work should be in mechanical engineering courses. This amount could include up to 4 credit hours of MECH 7990 or equivalent. Substitution of courses from other engineering/science disciplines is permitted when appropriate courses are unavailable in mechanical engineering. The PhD also requires a coordinated minor of at least 9 credit hours of graded coursework in a closely related field such as mathematics, physics, chemistry, or other engineering disciplines. A minimum of 10 credit hours of MECH 8990: Dissertation & Research is also required. There is no language requirement for the PhD.

The General Doctoral Examination (Preliminary Examination) must be taken by those seeking a PhD. This examination, administered by the major professor in coordination with members of a committee of at least four faculty (including the major professor) consists of two parts: (1) a written Qualifying Examination based upon knowledge acquired from coursework, taken within four semesters from the date of entry, and (2) an oral examination which includes questions on knowledge acquired from coursework as well as a detailed presentation and defense by the student of his/her proposed dissertation research. All PhD candidates must also pass a Final Examination consisting of an oral defense of their written dissertation. A maximum of two attempts each is allowed for passing the General Doctoral Examination and the Final Examination.

### **Nursing - MSN**

The School of Nursing offers a MSN program jointly with Auburn University Montgomery. This program focuses on the teaching/learning process as it relates to nursing students, patients and their families, and health care providers. Graduates of this program will possess advanced knowledge of educational principles for diverse populations and the roles of the clinical nurse specialist in the area of pediatrics, geriatrics or adult health.

The MSN program consists of 43-51 semester hours. These include major, support, and elective courses. The curriculum is offered via a hybrid web-enhanced courses and online courses. Classes that meet vary meeting place between AU and the AUM campus. Students will choose a thesis or an evidence-based practice project as a capstone experience.

Admission to the program is competitive and enrollment is limited. Minimum requirements include:

- A bachelor of science in nursing from an accredited college or university
- Good academic standing from the last university attended
- Successful completion (C or better) of an undergraduate statistics course
- Overall GPA of 3.0
- Unencumbered Alabama license as a registered nurse. Students finishing a BSN program during the semester of application must request a waiver of the admission committee in order for the application to be considered complete.
- Submission of GRE scores
- Three letters of professional reference
- Current resume/CV
- Essay on the reason for seeking the MSN



- Full-time students are admitted in the summer or fall semesters and part-time students are admitted each semester.

Application deadlines are: (1) spring semester Nov. 1, (2) summer semester March 1, and (3) fall semester April 1. If you are interested in applying and have missed the application deadline please speak to the program director since admission may still be possible. Full-time study can be completed in approximately 4 semesters and a summer term. Courses are offered only one time per each academic year so switches from full to part-time or part-time to full-time may impact graduation dates. To be considered for full-time study, students must have practiced full-time as a registered nurse for a minimum of 6 months. Students with less than 6 months of practice may be admitted as part-time students, contingent on continued part-time employment as a registered nurse.

#### **Nutrition and Food Science - MS, PhD**

The Department of Nutrition, Dietetics and Hospitality Management offers graduate study leading to the master of science (MS) and the doctor of philosophy (PhD) degrees with emphasis in nutrition or hospitality management. The combination of these areas within a single department facilitates integrative studies addressing normal and clinical nutrition, food and health issues, food service, as well as hospitality management. For the MS degree, the student may specialize in general, community, clinical or sports nutrition, food service management, or hospitality management. The department emphasizes the integration of knowledge from various fields for the purpose of understanding and developing professional skills for careers in higher education, government, and food, healthcare and hospitality industries.

For admission to the MS or PhD programs, the student must have a bachelor's degree from an accredited institution, a satisfactory GPA, and a satisfactory GRE score (a GMAT score may substitute for the GRE score for the hospitality emphasis), and acceptable undergraduate academic preparation. Applicants lacking background requirements must make up deficiencies. The MS degree with a thesis option requires a minimum of 30 semester hours and a thesis. The MS degree with the nonthesis option requires a minimum of 33 semester hours and a scholarly research project. Required courses for an emphasis in nutrition include NTRI 7500, 7510, 7520, 7050, 7850, and 19 hours of supporting courses. Required courses for the thesis option with an emphasis in hotel and restaurant management include NTRI 7050, 7850, and HRMT 6530, 6570, 7000, 7010, 8860 and 12 hours of supporting courses. The non-thesis option in the hospitality management emphasis is available through both distance education and on campus. Required courses for the non-thesis option with an emphasis in hotel and restaurant management include NTRI 7050/7056 and HRMT 6530/6536, 6570/6576, 7000/7006, 7010/7016, 8860/8866, and 16 hours of supporting courses. The PhD degree requires a minimum of 60 semester hours beyond the bachelor's degree and a dissertation describing original research in the area of nutrition or hotel and restaurant management. Course requirements for the PhD degree are the same as for the corresponding master's degree or an equivalent course from another institution plus NTRI 8970, 8850, and in the case of an emphasis in nutrition NTRI 7280. Laboratories are available for human, animal, chemical, and physical research. Supporting courses to strengthen the nutrition major may be in, but not limited to, biochemistry, physiology, chemistry, animal science, kinesiology, education, and biostatistics. The hotel and restaurant management emphasis may take supporting courses in such areas as management, marketing, communications, economics, and education. Course requirements for becoming a registered dietitian may be met during the graduate program by enrolling in additional required courses. Teaching, research, and extension assistantships are awarded competitively to qualified students.

#### **Pharmaceutical Sciences - MS, PhD**

Graduate study in pharmaceutical sciences leads to the degree of master of science. A doctor of philosophy in pharmaceutical sciences is offered through an interdepartmental program by the departments of Pharmaceutical Sciences and Pharmacy Care Systems.

The graduate program prepares students for teaching or research careers in academia, the pharmaceutical industry, as well as public and private research institutes. Students are expected to select one of the following areas of specialization: medicinal chemistry, pharmaceuticals, or pharmacology/toxicology.

For the MS program, students must have a degree in pharmacy or a bachelor's in an allied discipline such as biology, biochemistry or

chemistry and satisfactory scores on the Graduate Record Examination. Requirements include completion of 30 semester hours and a thesis.

For the PhD program, applicants must have a degree in pharmacy or a bachelor's or master's in an allied discipline and satisfactory scores on the Graduate Record Examination. Students are expected to select one of the following areas of specialization: medicinal chemistry, pharmaceuticals, or pharmacology/ toxicology. The student pursuing the PhD will be expected to complete a minimum of 60 semester hours of course work. In addition, general examinations and a dissertation are required.

#### **Pharmacy Care Systems - MS, PhD**

The department offers graduate course work at the master's level in the fields of pharmacy care systems and health systems pharmacy. A doctor of philosophy in pharmaceutical sciences is offered through an interdepartmental program by the departments of Pharmaceutical Sciences and Pharmacy Care Systems.

The student pursuing the MS is expected to select either pharmacy care systems or health systems pharmacy. At least half of the student's work will be completed in the chosen field, including a thesis. The remainder may be selected in other pharmacy fields or may be taken in a related area outside of the James Harrison School of Pharmacy such as accounting and finance, computer sciences, economics, education, industrial engineering, industrial design, architecture, management, psychology, sociology and communication. The MS requires a minimum of 30 semester hours and a thesis. The thesis may be counted toward part of the semester hour requirement. A student may earn a maximum of six credit hours for the thesis.

The student pursuing the PhD will be expected to complete a minimum of 60 semester hours of course work in the chosen field of study. In addition, general examinations and a dissertation are required. A student must earn a minimum of 10 hours credit for the dissertation.

A bachelor's degree from an accredited college or university and satisfactory scores on the Graduate Record Examination are required. A pharmacy degree is preferred. There is no additional language requirement beyond verbal and written fluency in English.

#### **Physics - MS, PhD**

The Department of Physics offers the doctor of philosophy degree to students who have achieved a mastery of the fundamental laws of nature and demonstrated the ability to complete a research project that results in new knowledge in physics. All students complete the basic graduate level courses in Classical Mechanics, Electricity and Magnetism, Quantum Mechanics and Statistical Physics. They demonstrate their mastery of these subjects by passing a General Doctoral Examination that has both a written and an oral component. To increase their knowledge of a broad range of advanced physics topics and to develop expertise in their chosen area of focus, students complete at least 12 additional hours of graded course work with a minimum of nine at the 8000-level. The research project is usually undertaken in one of the research focuses of the Department - plasma physics, condensed matter and surface physics, atomic and molecular physics, space physics, and computational physics. It is completed with the defense of the student's dissertation. Students are also expected to publish their research in a refereed journal and/or present it at an appropriate professional meeting.

The master of science is also offered. Successful students complete the same basic graduate level courses as PhD students. Students electing the non-thesis option complete an additional 12 hours of graduate level course work. Students electing the thesis option complete at least an additional 6 hours of graduate level course work and at least 4 hours of thesis work. In addition to defending their thesis, they are encouraged to publish their results in a refereed journal or present them at a scientific meeting.

#### **Plant Pathology - MAg, MS, PhD**

Graduate study in plant pathology leads to the MAg, MS or PhD degrees. Applicants must have earned a BS from an accredited institution with course work in agronomy, botany, horticulture, microbiology, or closely related areas. Satisfactory scores on the GRE and (if an international student) TOEFL tests are also required. All graduate students must complete core courses in plant pathology. For the MAg or MS, 30 semester credits are required beyond the BS; for the PhD, 60 credits are required. MS students must conduct research for the thesis and pass a

final oral examination. PhD students must conduct independent research for a dissertation and successfully pass two examinations. The "prelim" includes written and oral examinations and is typically taken upon completion of coursework. The final oral defense examination is taken upon completion of the dissertation research. No foreign languages are required.

#### **Polymer and Fiber Engineering - MPFEN, MS, PhD**

Graduate study in the Department of Polymer and Fiber Engineering leads to a master of polymer and fiber engineering, master of science, and doctor of philosophy degrees. GRE and (if an international student) TOEFL scores of all applicants are reviewed by the departmental Graduate Committee. Applicants must hold a bachelor's degree in a polymer engineering, fiber engineering, materials engineering/science, chemical engineering or related subject area. Students in the MS program enroll in course work covering core courses in polymer chemistry, polymer processing, structure and properties of polymers, and polymer characterization. They further enroll in specialized courses beneficial to their research, such as mechanics of flexible structures, composite materials, biopolymers, and fiber and film formation. Both thesis and non-thesis options are offered. The MS degree requires a minimum of 30 hours of graduate courses with thesis, 36 graduate credit hours and a graduate project for the non-thesis option.

The PhD in integrated textile and apparel science is offered jointly with the Department of Consumer Affairs in the College of Human Sciences. The PhD in polymer and fiber engineering requires a minimum of 60 hours of graduate courses including a minimum of 10 hours of ITAS 8990 Research and Dissertation. The student must enroll in a set of core courses and pass a written qualifying exam. After successfully presenting a dissertation research proposal to the student's graduate committee, the student becomes a candidate for the doctor of philosophy degree and may proceed with the dissertation research. Graduate teaching and research assistantships are available. There is no language requirement for the MS or PhD.

#### **Poultry Science - MAg, MS, PhD**

The Department of Poultry Science offers graduate programs in Poultry Science and Food Science. Students who pursue graduate studies in Poultry Science can earn Master of Agriculture, Master of Science, and Doctor of Philosophy degrees. These degrees are designed to prepare outstanding students for careers in the commercial poultry industry, allied industries, and academia. Research training and experience can be acquired in the specialized areas of food safety, immunology, management, microbiology, nutrition, parasitology, pathology, physiology, processing and product technology and virology.

An option in Food Science, leading to Master of Agriculture, Master of Science, and Doctor of Philosophy degrees, is also available. This degree option is designed to prepare outstanding students for careers in the food industry, government, and academia. Research training and experience can be acquired in food chemistry, food microbiology, food safety, food quality, and food processing.

When applying, students must indicate whether they wish to pursue graduate studies in Poultry Science or Food Science. All applications are reviewed by the departmental Graduate Committee. Satisfactory grade point averages and GRE scores are required, in addition to TOEFL scores for international students. For graduate studies in Poultry Science, applicants must have a bachelor's degree in agricultural, biological or allied sciences from a recognized institution. For graduate studies in Food Science, applicants must have a bachelor's degree in food science, nutrition, engineering, the biological sciences, the physical sciences, or agricultural sciences from a recognized institution. The course of study, developed by the student and the advisory committee, may include additional courses to address specific needs or course work deficiencies. There is no foreign language requirement. The Master of Science degree is earned only with a thesis option. The Master of Agriculture requires a research project. Both degrees require a minimum of 30 semester hours of course work and a comprehensive final oral examination. For the PhD degree, a minimum of 30 semester hours of coursework beyond the MS, or 60 hours beyond the bachelor's degree, is required. In addition, the successful completion of written and oral defense examinations, and a dissertation based on an independent research project are required to earn a PhD degree. Additional information about the departmental

requirements, policies and availability of financial support can be obtained via: <http://www.ag.auburn.edu/poul/>.

#### **Psychology - MS, PhD**

The Psychology Department offers doctoral degrees in three fields\* - Clinical, Experimental, and Industrial/Organizational Psychology - and a master's degree option in Applied Behavior Analysis in Development Disabilities. (Note: Graduate degrees in Counseling, Counseling Psychology, Educational Psychology and School Psychology are offered through departments in the College of Education rather than through the Department of Psychology).

The Clinical Psychology program utilizes a scientist-practitioner training model that blends basic and applied research with clinical practice. Typically, the program requires five years at Auburn in practicum experiences, course work, and individualized research. In addition, a one-year internship at an APA-approved program is required. The Experimental program provides a firm foundation in cognitive and behavioral sciences. The Industrial/Organizational program prepares students for academic, research and/or applied settings. Electives allow students flexibility in developing their own areas of specialization. Practicum placements provide opportunities to gain research and applied experience.

Students enrolled in the doctoral programs complete a sequence of departmental core courses providing a foundation in psychology on which specialization is based. In doctoral study, students are expected to write and defend an empirically-based master's thesis. Admission to doctoral candidacy is contingent upon the successful completion of the general doctoral examination. Students must also write and defend a research dissertation. The total number of semester credit hours of graduate work leading to the PhD ranges from 60 to 92.

The Master's Option in Applied Behavior Analysis in Developmental Disabilities is a full-time non-thesis program requiring three consecutive semesters (12 months) of full-time coursework (25 semester hours) and practicum training (up to 18 semester hours). Students are trained to provide clinical and educational services to individuals with mental retardation and autism spectrum disorders, typically-developing children in school settings, and families. Degree requirements focus on integrating course work with practicum training, and both components are approved by the Behavior Analyst Certification Board, Inc.

Admissions: Holders of the bachelor's degree in any discipline from an accredited institution will be considered for graduate work in psychology. Students are admitted to all programs fall term only. Applicants should visit the department's Web page ([www.auburn.edu/psychology](http://www.auburn.edu/psychology)), email [bryangt@auburn.edu](mailto:bryangt@auburn.edu) or call (334) 844-6471 for application and program information. To ensure consideration, the application process should be completed by December 1st for the Clinical doctoral program, January 15th for the Industrial/Organizational and Experimental doctoral programs, and February 15th for the master's option in Applied Behavior Analysis.

\* Although an MS degree is conferred upon students in the doctoral programs when they have fulfilled intermediate requirements for the PhD, the department does not offer terminal master's degrees in these fields.

#### **Public Administration and Public Policy - MPA, PhD**

The Department of Political Science offers the master of public administration. It is a professional degree program for leadership in public service at all levels of government. The program is accredited by the National Association of Schools of Public Affairs and Administration. Highly qualified students may pursue concurrently the master of community planning through a special arrangement that includes a separate application.

Applicants for the MPA must have a bachelor's degree or its equivalent from an accredited college or university. The General Test of the Graduate Record Examination is required. The admissions committee will evaluate the undergraduate record, GRE scores, letters of recommendation, a writing sample and any experience in government. The program is not limited to political science majors, but successful applicants who have little background in government institutions and processes may be required to take additional courses.

The program requires 42 semester hours, plus a comprehensive examination. Eight core courses for a total of 24 hours credit are required of all students. Students take an additional 12 hours of electives in either public administration, broadly conceived, or an approved concentration in a related administrative field or policy area. The final six credit hours consist of either an administrative internship in a governmental agency

or participation in a governmental research project. Students without substantial governmental experience will complete an internship, while those who have prior experience will complete a research project and paper.

**MPA Degree Requirements**

**A. Pre-requisites**

<b>Competency</b>	<b>Measure</b>
English .....	Verbal GRE of at least 450, writing sample or a course in advanced composition
Math.....	Quantitative GRE of at least 450 or course in college mathematics
U.S. Government .....	Undergraduate course or experience
Economics .....	Undergraduate course
Microcomputer applications .....	Undergraduate course or demonstrated competence

Students who have not satisfied these competencies before they enter the program may take them concurrently with MPA courses. It is important to complete the pre-requisites as soon as possible to gain full benefit of the regular MPA courses.

- B. The Core Curriculum - POLI 7000, 7140, 7150, 7260, 7330, 7350, 7360, and 7520. All classes are three hours.
- C. Electives - The student must take 12 hours of electives chosen in consultation with the director of the MPA Program. If the option for a concurrent degree with community planning is chosen, the electives for public administration will be fulfilled by the core courses of community planning.
- D. The Practical Experience - The remaining six hours of study required by the curriculum are fulfilled in one of two ways. Students without significant prior governmental experience take an internship. Students with direct government experience normally complete an approved research project, although they may take an internship with the approval of the MPA director.
- E. Portfolio - The Portfolio will include written assignments from all eight Core seminars demonstrating that our students have mastered the specific competencies defined in our re-accreditation Self-Study. These competencies are:
  - To lead and manage in public governance
  - To participate in and contribute to the public policy process
  - To analyze, synthesize, think critically, solve problems, and make decisions
  - To articulate and apply a public service perspective
  - To communicate and interact productively with a diverse and changing workforce and citizenry

In addition, the student must prepare a five-page integrative essay that demonstrates his or her public service philosophy. The integrative essay must reference each of the five core competencies.

**PhD in Public Administration and Public Policy**

The PhD in Public Administration and Public Policy is offered jointly by the Auburn University Department of Political Science and the Auburn University at Montgomery Department of Political Science and Public Administration. The curriculum includes core seminars, a methodology sequence, and two track options.

Only students with master's degrees from accredited universities or colleges will be considered for the AU and AUM PhD program. Applicants having an insufficient background in public administration and public policy may be asked to take prerequisite courses by the admissions committee. All applicants must take the GRE. Normally, a combined score of 900 is required for admission

**PhD Degree Requirements**

- A. Core Courses – All students must take seminars in: Public Administration, Public Policy, and Research Methodology.
- B. Tracks and Electives - The PhD program has two tracks, Public Administration and Public Policy. In addition to the core courses, students are required to take three courses within the track they have chosen. In addition to the core courses and the three track courses, students must take courses in an additional area of expertise, selected in consultation with the student's committee.
- C. Minimum Credit Requirements
  - Hours of formal PhD course work: ..... 39
  - Minimum hours of formal coursework at each campus: ..... 9
  - Minimum hours of graduate coursework:..... 75
- D. Examinations - Upon completion of course work, students must take a general written examination. Students must pass all parts of the written examination before scheduling the preliminary oral examination/

prospectus defense. After completion of the dissertation the student must pass a final oral examination defending the dissertation.

**Real Estate Development - MRED**

The Auburn University Executive Master of Real Estate Development (AUMRED) program is an executive graduate degree offered jointly by the College of Architecture, Design and Construction and the College of Business. The program emphasizes best development practices related to environmental sustainability, economic resilience, social responsibility, financial feasibility and design excellence. It provides a targeted understanding of multiple disciplines that puts students at an advantage in their real estate development careers. The program is entrepreneurially and industry focused, designed for practicing professionals with a minimum of three to five years in real estate development or related fields (real estate or mortgage brokerage, architecture, landscape architecture, community planning and building construction, for example). It combines short, intense on-campus residencies with distance modules and four-day field trips to nationally and internationally significant cities and development projects each semester. The curriculum consists of 39 credit hours that are delivered over a two-year/ six semester period.

**Rehabilitation and Special Education - MEd, MS, PhD**

See Special Education, Rehabilitation, and Counseling - MEd, MS, PhD

**Spanish - MA, MHS**

Graduate studies in Spanish lead to the master of arts (MA) or the master of Hispanic studies (MHS). The graduate program in Spanish prepares students for careers in education, government, and business, as well as for doctoral studies.

Candidates wishing to pursue the MA in Spanish or the MHS must have a bachelor's degree from an accredited institution, with at least 38 semester hours of undergraduate Spanish above the freshman level and satisfactory scores on the Graduate Record Examination. International students also must have acceptable scores on the TOEFL. Applicants lacking course requirements need to make up deficiencies before admission to the graduate program.

The MA requires at least 30 semester hours including 4 credits for thesis. The MHS requires at least 36 semester hours but no thesis. All degrees require satisfactory performance on the comprehensive examinations.

Candidates for the MHS must earn a minimum of 30 semester hours in their major. All master's degree candidates who are graduate assistants in Spanish are required to take FLSP 7090 every semester when they hold a teaching assistantship or equivalent. Credit from this course does not count toward the degree. For more information, check the Student Handbook available from the department.

A concentration consisting of 6 semester hours of graduate-level courses in a related field or fields may be earned as part of the MHS degree offered by the department.

A reading knowledge of one other foreign language is required. This knowledge may be demonstrated by examination by earning a passing score on the Foreign Language proficiency test, or by completion of the first-year sequence (or equivalent) of a Foreign Language with a grade of B or better.

Teaching assistantships are available to qualified students. For more information, please contact the department.

**Special Education, Rehabilitation, and Counseling – MEd, MS, PhD**

This department was created in the fall semester, 2008, when the Department of Rehabilitation and Special Education and the Department of Counselor Education, Counseling Psychology, and School Psychology were merged.

**Programs in Rehabilitation and Special Education – MEd, MS, PhD**

Graduate study in Rehabilitation and Special Education leads to the degrees of master of education, master of science, and the doctor of philosophy. Acceptance into these programs is competitive, based on past achievement, scholarship potential, and professionalism. Admission to the master's degree program requires competitive undergraduate GPA and Graduate Record Examination (GRE) scores, completed application forms, 3 letters of recommendation, and approval of department. Admission to the PhD program requires competitive graduate GPA and

GRE scores, completed application forms, 3 letters of recommendation, a current resume, a professional mission statement, and approval of department. Stipends and fellowships are typically available at both the masters and PhD level for highly qualified students.

Students pursuing a master's degree in the special education program are required to complete a minimum of 30 semester hours. Specializations include early childhood special education (ages birth to 9) and collaborative teacher (K-6 and/or 6-12). Alternative master's certification programs for non-education majors are available in these specialized areas. The special education program requires three 120-hour practica. Additionally, alternative master's students complete a semester-long, full-time internship in a public school setting. They also are required to participate in the Alabama Prospective Teacher Testing Program, with a passing score on each of the Basic Skills Assessments (Applied Mathematics, Reading for Information, and Writing) and, if applicable, a passing score on the appropriate Praxis II subject assessment prior to internship. Graduate students in master's programs that add a new area of certification to an existing certification must pass, if applicable, the appropriate Praxis II subject assessment(s) as a prerequisite for graduation. Special education students may select a thesis (MS) or non-thesis (MEd) program.

The master's level special education programs are approved by the Alabama State Board of Education. Individuals completing these programs are eligible to apply for Alabama Class A certification. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application forms and requirements. Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). In addition, the State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of AU's graduates when they apply for certification in other states.

The master's rehabilitation program is accredited by the Council on Rehabilitation Education and provides students with the necessary academic course work and clinical experiences to sit for the Certified Rehabilitation Counselor (CRC) examination. The program provides the opportunity through elective course work to specialize in vocational evaluation. The rehabilitation program requires a 100 hour practicum taken early in the program and 600 hours of supervised clinical practice generally taken at the end of the program. Rehabilitation students may select a thesis (MS) or non-thesis (MEd) program. The thesis option requires 64 semester hours of course work while the non-thesis program is 60 semester hours and requires the student to successfully pass a written comprehensive examination.

The PhD program is offered in rehabilitation and special education. Students are required to take 15 hours of research courses and 9 hours of educational foundations (e.g., historical, psychological, philosophical, sociological). The remaining course work is made up of doctoral "core" and support area course work. A minimum of 48 semester hours beyond the master's degree, excluding the dissertation hours, is needed to complete the program. Prior to submitting a research proposal for the dissertation, all doctoral students must satisfactorily complete a qualifying paper and a written and oral comprehensive examination. Typically, the program takes a minimum of three years to complete (two years of course work and one year of independent research).

#### **Programs in Counselor Education and, Counseling Psychology - MEd, MS, PhD**

Areas of specialization are offered in school counseling, community agency counseling, counselor education, and counseling psychology.

Master's degree programs prepare students for entry-level professional positions as counselors in a variety of human service agencies such as public schools, community mental health centers, drug and alcohol treatment programs and university counseling centers.

The doctoral degree programs provide advanced preparation in the delivery of counseling and psychological services and prepare students for education, supervisory and leadership roles in schools, universities, and human service agencies. The doctoral programs also require that students demonstrate skills to independently conduct research through the dissertation.

Students in all programs must pass a comprehensive oral examination and complete other assigned work and/or examinations designed to evaluate students' skills in areas related to program goals. All programs

require extensive extramural internships in placements related to the area of professional preparation.

The master's degree programs in school counseling and community agency counseling and the PhD program in counselor education are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The master's degree program in school counseling is approved by the Alabama State Board of Education. The counseling psychology program, accredited by the American Psychological Association, is a doctoral program culminating in the PhD degree.

To be considered for admission into any of the programs, an applicant must submit an application directly to the Graduate School (<http://www.grad.auburn.edu/>). Applicants must also submit a program application which is accessible at: [http://education.auburn.edu/academic\\_departments/coun/index.html](http://education.auburn.edu/academic_departments/coun/index.html). Provided that general Graduate School admission requirements are met, program admissions committees consider all submitted materials and, for doctoral programs, determine whether to issue an invitation for an admissions interview. No interview is required for admission to masters' programs. All admissions decisions for programs occur in the spring semester; initial enrollment for departmental programs usually only occurs in the fall semester. Consult individual program sites for specific application deadline dates, as these vary by program.

Credit hour requirements for degree programs typically exceed the Graduate School minimum. Graduation requirements for the master's degree in school counseling include a passing score on the Alabama Prospective Teacher Testing Program's appropriate Praxis II subject assessment.

For questions not answered by program links, contact the Department of Special Education, Rehabilitation, and Counseling.

#### **Statistics**

(See Mathematics and Statistics)

#### **Wildlife Sciences - MS, PhD**

Wildlife Sciences graduate programs are available for both MS and PhD degrees. Admission requirements parallel those for Forestry graduate programs.

The MS degree program requires a minimum of 30 hours beyond the bachelor degree at the graduate level, 21 hours of which must be in the major. A minimum of 4 but not more than 6 hours in Research and Thesis (WILD7990) is required. All MS students are required to take Research Methods (FOR7510) and Graduate Seminar (WILD7950). A research proposal and thesis based on original research are major components of the MS degree.

The PhD degree requires 60 semester hours beyond the bachelor degree. There must be a minimum of 30 semester hours in graded coursework at the 7000-level or above. Of the remaining 30 semester hours, 10 hours must be Research and Dissertation (WILD8990) and 20 hours of 6000-level or above. While some these 60 hours can be from previous graduate work, such as a MS degree, a minimum of 18 hours of graded coursework at the 6000-level or above must be completed at Auburn. All PhD students are required to take Research Methods (FOR7510) and Graduate Seminar (WILD7950). A research proposal and dissertation based on original research are required as major components of the PhD degree program.

Additional information on wildlife graduate programs and degree requirements can be found at [www.sfw.s.auburn.edu/](http://www.sfw.s.auburn.edu/).

#### **Zoology**

(See Biological Sciences)

#### **Interdepartmental Program**

##### **Anatomy, Physiology and Pharmacology**

(See Biomedical Sciences)

##### **Biomedical Sciences - MS, PhD**

All graduate faculty of the College of Veterinary Medicine participate in a college-wide graduate program leading to the master of science and the doctor of philosophy degrees in Biomedical Sciences (BMS or VBMS for curriculum descriptions). Participating departments are: Anatomy,

Physiology and Pharmacology (APP); Clinical Sciences (DCS); and Pathobiology (PATHO).

Applicants to the program are required to meet entrance standards established by the College's Graduate Program Committee, the Graduate School, and their intended area of study. Either a baccalaureate degree or the Doctor of Veterinary Medicine (DVM) degree or equivalent is required for admission.

The three departmental programs represent the gateway to areas of concentration. The ten BMS concentrations (MS and PhD programs unless otherwise stated): Anatomy (APP), Animal Genetic Disease (PATHO), Animal Parasitology (PATHO), Clinical Sciences (including all DCS Residency Programs, MS only), Infectious Disease (PATHO), Molecular Oncology (multidisciplinary through PATHO), Pathology (Anatomic and Clinical; PATHO), Pharmacology (APP), Physiology (APP), and Veterinary Sports Medicine (DCS, MS only). The BMS program offers specific enrichment activities including seminars and journal clubs, training in grant writing, participation in scientific meetings, and opportunities to present results of research at national and international meetings.

A graduate student advisory committee is appointed by the Dean of the Graduate School for each student upon recommendation of the college's Associate Dean for Research and Graduate Studies. The student's faculty adviser usually serves as the chair of this committee, and the remaining members, selected from the graduate faculty, should have expertise relevant to the student's area of study. The advisory committee develops a plan of study which must be submitted to the college's Associate Dean for Research and Graduate Studies for approval and then to the dean of the Graduate School. Study programs are designed to meet the student's needs and interests while featuring research training and assuring a strong background in biochemistry, biophysics and/or molecular biology. Original research is required for all BMS graduates. Courses must be selected in conformity with the regulations of the college's BMS Graduate Program Committee and the Graduate School. For additional information, visit: [www.vetmed.auburn.edu/index.pl/graduate\\_studies](http://www.vetmed.auburn.edu/index.pl/graduate_studies).

A dual degree program (DDP) allows students to pursue DVM and graduate degrees simultaneously in a time-and content-integrated manner. Graduates, particularly DVM/PhD graduates, will have strong backgrounds both in veterinary medicine and research so as to be well prepared for successful careers in academia, industry and/or specialty clinics. For the DDP program, students must be admitted into the College of Veterinary Medicine program via application to the Auburn University College of Veterinary Medicine and to the graduate program via application to the Auburn University Graduate School. Students already admitted to the Graduate School may apply for admission to the DVM program in order to gain entry to the combined degree program. Such students must meet specific criteria to be allowed to pursue this course of study ([www.vetmed.auburn.edu/index.pl/graduate\\_studies](http://www.vetmed.auburn.edu/index.pl/graduate_studies)).

#### **Economics - PhD**

This is an interdepartmental program administered through the Department of Agricultural Economics and Rural Sociology and the School of Forestry and Wildlife Sciences. Information is available from the respective graduate program officers.

#### **Pharmaceutical Sciences - PhD**

The graduate program in pharmaceutical sciences offers the terminal degree of doctor of philosophy. The primary purpose of the program is to establish a functionally integrated research degree program leading to the doctor of philosophy with a major in the pharmaceutical sciences and specialization in one of the following disciplines: medicinal chemistry, pharmaceuticals, pharmacology-toxicology or pharmacy care systems. The interdepartmental program is administered jointly through the Departments of Pharmacal Sciences and Pharmacy Care Systems.

#### **Sociology - MS, MA**

The interdepartmental graduate program in Sociology offers study and research leading to the degrees of master of arts and master of science. Anthropologists, social work faculty, rural sociologists and sociologists make up the faculty. The program is administered by a three-member coordinating committee from the Department of Agricultural Economics and Rural Sociology, the Department of Sociology, and the Department of Sociology, Anthropology and Social Work, and the Department of Sociology at Auburn University Montgomery.

Both thesis and non-thesis options are available. These two degree options are designed to serve the needs of differing types of students. The thesis option is recommended for students who might be interested in pursuing advanced graduate work and who are interested in gaining research experience. The non-thesis option is designed for individuals who are in mid-career, who wish to learn new skills in order to be more productive professionally, and have no intent on pursuing a more advanced graduate degree.

All students must take SOCY 7000, 7100, RSOC 7700. Students taking the thesis option are required to complete a total of 30 hours. Additionally, a thesis is also required. Students may apply up to six hours of Research and Thesis (SOCY 7990) toward the 30-hour requirement. Students taking the non-thesis option will be required complete a total of 36 hours. Additionally, a major paper is required.

#### **Veterinary Clinical Sciences**

(See Biomedical Sciences)

#### **Graduate Minors**

##### **Biochemistry and Cell/Molecular Biology**

Auburn University offers a graduate minor in Cell and Molecular Biosciences, administered by the Graduate School with faculty from the Cell and Molecular Biosciences Program. The CMB minor requires a suitable background in biochemistry (BCHE 7200, 7210 or equivalent) and the successful completion of at least nine credits from the CMB graduate curriculum. The minor offers in-depth instruction in animal, microbial and plant and cell and molecular biology, and is specifically designed for MS/PhD students in life sciences and allied fields whose thesis or dissertation research will benefit from a broader perspective of cell and molecular biology and bioinformatics. See [www.auburn.edu/cmb](http://www.auburn.edu/cmb) for more information.

##### **Community Planning**

The Community Planning minor is open to graduate students in Building Science and Landscape Architecture, and to others only by permission. This minor affords students with interests in planning, development and urban design the opportunity to explore the discipline. Students must complete 9 credit hours of Community Planning coursework and notify CADC Student Services that they are completing the Planning minor.

##### **Ecology**

Ecology is an academic minor administered by the Graduate School in cooperation with faculty and departments that participate in the Auburn University Ecology Group (<http://www.auburn.edu/academic/ecology>). The Ecology minor is open to graduate students whose thesis or dissertation research will benefit from a broader and enriched perspective in the fundamentals and applications of the ecological sciences. For more information, students should contact any of the following coordinators.

Agronomy and Soils, Wes Wood .....	Funchess 202
Animal Sciences, Russ Muntifering .....	Upchurch 108
Biological Sciences, Nanette Chadwick .....	Funchess 331
Entomology and Plant Pathology, Kira Bowen .....	Rouse 209
Fisheries and Allied Aquacultures, Dennis DeVries.....	Swingle 311
Forestry and Wildlife Sciences, Ed Loewenstein .....	F&WS 4431

##### **Economic Development**

The economic development graduate minor provides a specialization in the theories and practice of economic development, primarily within the U.S and Alabama. It is an interdisciplinary minor offered by the faculty of participating departments (Agricultural Economics and Rural Sociology, Community Planning, Economics, and Political Science) and is administered by the Economic and Community Development Institute.

Students may attach the economic development graduate minor to their degrees in agricultural economics (MS and PhD), business administration (MBA), community planning (MCP), economics (MS), public administration (MPA), public administration and public policy (PhD), and rural sociology (MS). To earn the graduate minor, students must complete the program's basic course, Economic Development and Competition (POLI 7700), two elective courses selected from an approved list, and a one week non-credit economic development training course sponsored by the Economic and Community Development Institute. Contact the

Economic and Community Development Institute for more information

**Environmental Studies**

This is an interdisciplinary academic minor administered by the Graduate School in cooperation with participating departments. It is open to any graduate student whose thesis or dissertation is in the environmental area. Participating departments include Aerospace Engineering, Agricultural Economics, Biosystems Engineering, Agronomy and Soils, Animal Sciences, Architecture, Biological Sciences, Chemical Engineering, Civil Engineering, Entomology, Fisheries and Allied Aquacultures, Forestry, Geography, Geology, Horticulture, Landscape Architecture, Pathobiology, Pharmacal Sciences, Physiology and Pharmacology, Plant Pathology, Psychology and Sociology.

Basic guidelines are:

- 1 The minor is open to any graduate student whose thesis or dissertation is environmentally oriented.
- 2 The student's department retains primary control over the student's program.
- 3 One committee member must be from outside the student's department and this member must be involved in environmental research.
- 4 Each student must take BIOL 3060, or the equivalent and RSOC 7650 (Natural Resources and the Environment) or an equivalent.
- 5 Each student must take at least three hours of environmental-related course work from outside the student's "broad group discipline."
- 6 Each student must take at least three hours of environmental-related course work from outside of the student's home department but with-in the student's "broad group discipline."
- 7 Each student must meet the degree requirements of the student's home department.
- 8 At the discretion of the student's advisory committee, graduate-level courses required for this program also may be counted towards the completion of other degree requirements.

For more information, contact Dr. Joe Touchton, Department of Agronomy and Soils, 202 Funchess Hall.

**Golf Course Design**

The graduate minor in Golf Course Design is open to graduate students in Landscape Architecture, Agronomy and Soils, and Landscape Horticulture, or others with permission. This minor provides students with additional coursework and field experience in landscape form and function for golf course construction. Specifically, the minor requires 19 credit hours in Landscape Architecture and Agronomy, including courses in Soil Resources and Conservation, Advanced Turfgrass Management, Landscape Construction, and Landscape Ecology. The minor is administered through the Department of Agronomy and Soils. For specific information students should contact Dr. Beth Guertal in Agronomy and Soils, [eguertal@acesag.auburn.edu](mailto:eguertal@acesag.auburn.edu).

**Pathobiology - MS, PhD**

(See Biomedical Sciences)

**Plant Molecular Biology**

Auburn University offers an academic minor in plant molecular biology administered by the Graduate School in cooperation with the participating Molecular and Cellular Biology faculty housed in the two departments listed below. The minor is open to graduate students enrolled in these departments whose thesis/dissertation research addresses related studies and who will benefit from broader training in molecular biology. For more information, contact the following department coordinators

- Narendra Singh ..... Biological Sciences
- Fenny Dane ..... Horticulture

**Sport Management**

The purpose of the sport management minor is to provide master's degree students with the specialized knowledge of the sport industry and to prepare those students to work in sport organizations as administrators and managers. The minor is administered by the Graduate School. Participating departments include Kinesiology and Educational Foundations, Leadership and Technology. Students selecting the minor must satisfy the degree requirements for the master's degree programs in Kinesiology and Educational Foundations, Leadership and Technology. The Sport Management Minor Committee oversees the program and certifies completion. Minimum requirements are 12 semester hours of graduate course work in sport management, as identified by the Committee, 6 of which must be beyond the minimum hour requirements for the master's degree. At least 6 hours must be approved coursework in sports studies. The student must also complete a minimum of 3 semester hours of work-related experience in sport management (e.g., a practicum course). For additional information, please contact the department head of the participating units.

**Statistics**

Auburn University offers a graduate academic minor in Statistics administered by the Graduate School in cooperation with the Statistics Coordinating Committee and the Department of Mathematics and Statistics. The objective of the minor is to provide education and training for students whose graduate research includes a substantial amount of statistical methodology and/or data analysis. Students are required to complete 12 hours of graduate level statistics course work (selected from 6110, 6620, 7000, 7010, 7020, 7030, 7040, 7600, 7616, 7700, 7780, 7840, 7850, and 7860) and demonstrate the ability to apply statistical methodology to problems in research. Participants are required to have one committee member from outside the department who is a member of the Statistics Faculty. For more information, contact Dr. Mark Carpenter, Department of Mathematics and Statistics.

**Urban Forestry**

The Department of Horticulture (HORT) and the School of Forestry and Wildlife Sciences (SFWS) offer an Urban Forestry minor for graduate students. Urban Forestry is the design, establishment and maintenance of urban forests to enhance the economic value of cities and to provide a healthier environment for people. The minor promotes interdisciplinary studies and trains students for employment in the urban forestry arena. Auburn University, with its strengths in Horticulture, Forestry, Landscape Architecture, Community Planning and Agriculture and its proximity to major urban centers such as Atlanta, Birmingham, Columbus and Montgomery, offers a unique opportunity for urban forestry research and education.

To be eligible for the minor, students must be enrolled in the master of natural resources, master of agriculture, master of science or PhD degree program in HORT or SFWS. To complete the minor, students must:

1. Develop an advisory committee including faculty from both SFWS and HORT;
2. Complete a thesis/dissertation research project that pertains to urban forestry, or in the case of master of natural resources and master of agriculture degrees, complete an approved three-credit hour directed study in urban forestry;
3. Complete FORY 6650, HORT/FORY 7850 and at least one undergraduate or graduate course in tree identification.
4. Complete at least nine semester hours from a list of approved core courses, at least one of which must be outside of the home department or school.

For more information, contact the graduate program officer at the Department of Horticulture or the School of Forestry and Wildlife Sciences.

# Reserve Officers' Training Corps

## Department of Air Force Aerospace Studies

LIEUTENANT COLONEL JOSEPH T. FETSCH  
*Commander and Professor of Aerospace Studies*

The Air Force Reserve Officer Training Corps (ROTC) is an educational program designed to give men and women the opportunity to become an Air Force officer while completing a degree. The Air Force ROTC program is designed to teach the necessary skills needed to accept the challenging opportunities encountered in the Air Force. Air Force ROTC offers a pathway from college to many exciting career possibilities as an Air Force officer: flying, engineering, intelligence, computer systems, aircraft maintenance, management, etc. Interested students should contact the Air Force ROTC department. AFROTC is now an approved minor.

### Four-Year Program

The General Military Course (GMC) is the first half of the Four-Year Program and is taken during the freshman and sophomore years. This program allows the student to try out Air Force ROTC without obligation (unless the student is on an Air Force ROTC scholarship). During the first two years, the student will learn basics about the Air Force and the historical development of airpower. GMC student may be eligible for a scholarship totaling \$18,000 a year for tuition, fees, and books plus receive a non-taxable monthly allowance. During the spring semester of the sophomore year, the student will compete for the opportunity to attend a four-week Field Training encampment (see Field Training section below for in-depth information). Successful completion of field training is mandatory for entrance into the Professional Officer Course (POC), the junior and senior year of the Four-Year Program. As a junior, the student will learn about various leadership roles and management techniques needed to become an effective Air Force officer. During the senior year, students will learn about foreign policy and national security while preparing them for entrance into active duty.

#### Curriculum in the General Military Course

AIRF 1010/1020 Foundations of the Air Force  
AIRF 2010/2020 The Evolution of Aerospace Studies

### Leadership Laboratory

As an Air Force ROTC cadet, each student will be required to attend an additional two-hour class period each Thursday known as Leadership Laboratory. Although it is not part of the academic class requirement, it is an essential part of officer training. Leadership Laboratory is a cadet-centered program where the student will learn such things as military customs and courtesies, drill and ceremonies, and proper wear of uniform. On other occasions, the student will have the opportunity to hear excellent guest speakers discuss a variety of interesting and stimulating topics. Those interested in a commission must sign up for Leadership Laboratory. AIRF 1011/1021 AFROTC Leadership Lab, AIRF 2011/2021 AFROTC Leadership Lab, AIRF 3011/3021 and 4011/4021 AFROTC Leadership Lab.

### Air Force ROTC Scholarships

Air Force ROTC offers scholarships on a competitive basis to high school seniors and college students. These scholarships can be offered in selected scientific and technical areas as well as in non-technical areas. Contact the Air Force ROTC detachment for the latest on scholarship opportunities. You may visit [www.afrotc.com](http://www.afrotc.com)

### Professional Officer Course (POC)

The Professional Officer Course consists of a four semester course series normally taken during the junior and senior years. Three classroom hours of instruction and a two hour Leadership Laboratory is taken each week. Six credit hours may be applied toward graduation. At present, all non-scholarship POC cadets who meet POC eligibility criteria receive a monthly tax free stipend.

### Field Training (FT)

Cadets completing the General Military Course attend four weeks of FT during the summer at Maxwell AFB. This rigorous program of leadership training, physical conditioning and academics assesses the cadet's potential to be an Air Force officer. Lastly, cadets also receive survival and firearms training, career information and a military aircraft orientation flight. Cadets receive travel pay and daily pay for attending FT.

## Department of Military Science

LIEUTENANT COLONEL RICHARD J. HOERNER  
*Commander and Professor of Military Science*

The purpose of the Army ROTC program is to select, train and motivate the future leadership of the active Army, Army National Guard and Army Reserve. The curriculum is available to both men and women and prepares students to become effective leaders and managers in a variety of challenging fields.

The Army ROTC curriculum is divided into two courses: a General Military Course open to all students and an Officer Development Course for qualified juniors, seniors and graduate students. The General Course serves to acquaint Auburn students with the Army and its role in our society; The Officer Development course prepares students for service as commissioned officers. Successful completion of both courses and award of a bachelor's degree constitute the normal progression to earning a commission as a Second Lieutenant. Students undecided about pursuit of a commission may participate in the General Military Course. This affords freshman and sophomore students the opportunity to make an informed decision on the advantages of an officer's commission while incurring no military obligation.

### General Military Course (The Basic Course)

The Basic Course consists of a four-semester block of instruction normally taken during the freshman and sophomore years. Successful completion of MILS 1010, 1020, 2010 and 2020 together with the associated labs (MILS 1011, 1021, 2011 and 2021) satisfies the academic requirements for progression to the Officer Development Course. Two credit hours per semester are earned for the lecture and lab. Subject to departmental approval, students may complete all four courses in one academic year.

### Curriculum in the General Military Course

The basic military science courses provide unique classroom and hands-on instruction in orienteering, small unit tactics, first aid, physical fitness, and leadership skills. They introduce the student to the Army as a profession, lay the foundation of value-based, ethical decision-making, illuminate the Army's place in society and lay the foundation for the Officer Development Course that follows. The Professor of Military Science may admit the student to the Advanced Program upon completion of these courses.

Courses are offered in the fall and spring semesters and credits earned may be applied as elective credits toward degree requirements in all schools of the university.

### Optional Leadership Training Course

Otherwise qualified students who are unable to complete the Basic Course during their freshman and sophomore years may qualify for admission to the Advanced Course by successfully completing the Leadership Training Course at Fort Knox, Kentucky.

The Leaders' Training Course consists of approximately four weeks of training conducted during the summer months. Students desiring to exercise this option are required to submit a formal application and pass a general physical. Students who participate in the Leadership Training Course will receive approximately \$700 in addition to travel expenses to and from Fort Knox. Uniforms, housing, medical care and meals are furnished by the government during training.

Interested students are strongly encouraged to enroll in a military science course and laboratory during the spring semester. Deadline for applications is March 15, all applicants must contact the Military Science Department no later than March 1.

### Officer Development Course (The Advanced Course)

Successful completion of the General Military Course or approved alternative training, a minimum 2.0 grade-point average and medical qualifications are pre-requisites for enrollment in the Officer Development Course. Service veterans, transfer students from junior or military colleges, members of the National Guard or Army Reserve, and former military academy cadets may qualify for direct entry into the Officer Development Course two academic years before their projected graduation.

The Advanced Course is designed to develop a candidate's leadership and management potential, physical stamina, and poise, as well as the character traits desired of an Army Officer. The program's objective is to produce the highest caliber junior officer, fully capable of accepting command in the modern Army, exercising management responsibilities and serving the broader community.

The Advanced Course consists of a four-semester block of instruction taken during the junior and senior years (MILS 3010, 3020, 4010 and 4020). Successful completion of the courses, together with a leadership laboratory (MILS 3011, 3021, 4011 and 4021) each semester fulfills military science academic requirements for award of an officer's commission. Three credit hours per semester are earned for the lecture and laboratory. Students currently receive a tax-free subsistence allowance of \$450 (juniors) and \$500 (seniors) while enrolled.

Students enrolled in the Officer Development Course are required to successfully complete approximately four weeks of leadership training at Fort Lewis, Washington, during the summer to become eligible for commissioning. Attendance at the Leadership Development Assessment Course normally occurs in the summer following the junior year. The purpose of the course is to provide each candidate hands-on experience in leadership development as well as extensive training in military tactics, techniques and related subjects vital to success as a junior officer. Students attending the Leadership Development Assessment Course receive approximately \$700 in addition to travel expenses to and from Fort Lewis. Uniforms, housing, medical care and meals are furnished by the government during the training.

Additional voluntary training at one or more of a variety of active Army service schools is available to select students each summer. Students may apply for attendance at Airborne School, Air Assault School, The Northern Warfare Training Center and Cadet Troop Leadership Training. Students who successfully complete the appropriate course are authorized to wear the Parachutist, Air Assault or other applicable skill badge.

Students who successfully complete the Army ROTC curriculum, and earn a bachelor's degree, serve on active duty or with the Army National Guard or Army Reserve. Active duty is for a period of three or four years with the opportunity for qualified officers to apply for extended service. Current salary and allowances for a single Second Lieutenant exceed \$42,000. Medical and other benefits are also provided at no cost.

### Professional Military Education Requirements

All Army ROTC cadets seeking a commission are required to pass a Written Communication Skills course (currently fulfilled by the University Core Curriculum) and World Military History (HIST 3640). An alternate military history course may be substituted with the approval of the Professor of Military Science.

### Simultaneous Membership Program

Second, third and fourth year students are eligible to participate in the Simultaneous Membership Program with the Army National Guard or Army Reserve. Students participating in this program affiliate with an Army unit as a student officer, thus affording them the opportunity for enhanced leadership development. Students in this program receive a salary, additional tax-free benefits and GI Bill educational benefits (if otherwise qualified).

### Military Science Minor

The Department of Military Science offers a minor under the following conditions. Fourteen semester hours in Military Science [MILS] are required, including 12 at the 3000/4000-level, and a three-hour 3000-level Military History course. (See p. 16 on limits.)

### Scholarship Programs

Each year the Army offers a limited number of four-year, three-year and two-year scholarships to those young men and women who have demonstrated outstanding scholastic, athletic and leadership potential. Scholarships are available on a campus competitive basis and pay most or all of the cost of tuition, textbooks, supplies and fees for both resident and non-resident students. Additionally, scholarship students receive a \$300 to \$500 a month tax-free allowance.

### Army Nurse Corps Option

Students enrolled in the School of Nursing curriculum leading to the degree of bachelor of science in nursing may simultaneously pursue commissions as Second Lieutenants in the Army Nurse Corps.

Nursing students qualify for entry into the Officer Development Course by the same methods as other candidates and participate in the same summer Leadership Development Assessment Course as well. Nursing students may also receive practical and leadership experience during an additional nursing training program in a clinical setting at an Army hospital. The focus is to provide nursing cadets an experience that integrates clinical, interpersonal, and leadership knowledge and skills. Emphasis is on practical experience under the direct supervision of an Army Nurse Corps Officer who acts as the cadet's preceptor throughout the training period.

Nursing students compete for scholarships only against other nursing students and are eligible to compete for fully funded advanced schooling after serving an initial tour (three to four years) of active duty. Nurse Corps officers selected for advanced degree programs draw their regular salary and benefits while pursuing a specialized degree at Army expense. Participants in this program incur an additional active duty service obligation.

### Department of Naval Science

CAPTAIN D. W. EPPERSON

*Commanding Officer and Professor of Naval Science*

The mission of the Naval ROTC is to develop NROTC students mentally, morally, and physically and to imbue them with the highest ideals of duty, honor, and loyalty; to commission college graduates as naval officers who possess a basic professional background, are motivated toward careers in the naval service, and have a potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship, and government. All NROTC programs are open to qualified applicants. All Naval Science courses of one or more credits are open to all Auburn students regardless of affiliation with the NROTC Program.

To be eligible for enrollment as a midshipman, an applicant must be a United States citizen; have no moral obligations or personal convictions that will prevent bearing of arms, and supporting and defending the Constitution of the United States against all enemies, foreign and domestic; meet age requirements of at least 17 years on or before 1 September of the year of enrollment and less than 27 years on 30 June of the year an applicant expects to graduate; meet physical requirements for the NROTC Program; and be accepted for admission as a full-time student at Auburn University. Applicants with prior or current active duty in the U.S. Armed Forces may be granted age waivers equal to the number of months served, not to exceed 36 months. Those granted the maximum age waiver must be less than 30 years of age on 30 June of the year they expect to graduate.

### NROTC Programs

**Four-Year NROTC Navy-Marine Corps Scholarship** - Entrance into the Navy-Marine Corps Scholarship Program is via nationwide competition. Applicants typically apply during their senior year of high school, but anyone who meets eligibility requirements and has completed less than 30 semester hours of college credit may apply. Qualifications for enrollment, applications, and information bulletins are available at <https://www.nrotc.navy.mil>, high schools, colleges, recruiting stations, and the Auburn NROTC Unit, located on the second floor of W. F. Nichols Center. The Department of the Navy pays tuition, fees, \$375 per semester for textbooks, and provides a monthly stipend. Freshmen on scholarship receive \$250, sophomores \$300, juniors \$350, and seniors \$400 per month. Active duty pay for summer training is approximately \$560 per month with living quarters and meals provided. The NROTC program divides degrees into three Tiers with Tier I containing engineering majors, Tier II remaining



technical majors and Tier III liberal arts (for a complete list, see the Auburn NROTC home page). Although the program emphasizes engineering and science majors, students may enroll in any Auburn University major leading to a baccalaureate degree. In addition to the requirements of their major, scholarship students must complete 24 semester hours of Naval Science courses, calculus I and II, calculus-based physics I and II, a military history/national security policy course and a world cultures course. Summer activities include two at-sea training cruises and one summer period of career orientation lasting for about four weeks. Marine Option students participate in a six-week orientation course at Quantico, VA in lieu of the second at-sea training cruise. Scholarship students may resign without obligation anytime prior to the beginning of their second year in the program. Successful completion of the ROTC program leads to a commission as an Ensign, U.S. Navy, or Second Lieutenant, U.S. Marine Corps.

**Two-Year NROTC Navy-Marine Scholarship** - Selections for this program are made on a national basis from nominations submitted by NROTC units or officer recruiters from around the country. Selected applicants attend the Naval Science Institute (NSI) in Newport, RI, for six weeks during the summer prior to their junior year. Successful NSI completion qualifies students for enrollment in the advanced course (junior year) of the NROTC Program. The two-year scholarship covers the final two years of college; provides tuition, fees, \$375 per semester for textbooks, and subsistence stipend for a maximum of 20 months. The program is open to college students who have completed their sophomore year or third year in a five-year curriculum. The deadline for application is 15 March of the applicant's sophomore year. Upon graduation students are commissioned as Ensigns, U.S. Navy, or Second Lieutenants, U.S. Marine Corps.

**College Program** - The College Program is a non-scholarship option that offers a two- or four-year program. There is no calculus or physics requirement and no preference for technical majors. Interested students should apply directly to the Auburn NROTC Unit during the fall of their freshman year for the four-year program or prior to the spring of their sophomore year for the two-year program. The program pays for uniforms and instructional fees for Naval Science courses. College Program students selected for advanced standing prior to their junior year receive a stipend for a maximum of 20 months. Advance standing is only available starting the junior year of college. Stipend per academic month is \$350 junior year and \$400 senior year. College Program students will complete Naval Science and other university courses, a few specific university courses, and attend one summer training session at sea for Navy Option midshipmen or Quantico, VA, for Marine Option midshipmen. When accepted, two-year applicants will attend the six-and-a-half week Naval Science Institute program in Newport, RI, during the summer between their sophomore and junior years. Upon graduation, two- and four-year College Program midshipmen may be commissioned Ensigns, U.S. Navy, or Second Lieutenants, U.S. Marine Corps.

**Navy Nurse Corps NROTC Scholarship** - The Navy pays tuition, fees, \$375 per semester for textbooks, all equipment, and uniform items within the BSN degree curriculum. Subsistence pay and active duty pay for summer training is equivalent to the pay provided by the Navy-Marine Corps Scholarship Programs. Students must major in a nursing program leading to a BSN degree. Naval Science course requirements for Nurse Option students consist of 12 semester hours of Naval Science courses and a world cultures course. Summer activities include one at-sea training cruise and one shore-based hospital training period. Nurse Corps NROTC scholarship eligibility and selection procedures are the same as regular four-year NROTC Scholarship Program requirements. Upon graduation, Nurse Corps NROTC Scholarship midshipmen are commissioned as Ensigns, U.S. Navy Nurse Corps.

**Tweeddale Scholarship** - The Professor of Naval Science (PNS) is allowed to award two Tweeddale Scholarships each year. The program focuses on students majoring in specific technical fields (e.g. Engineering, Mathematics, Computer Science, Chemistry, or Physics). A strong math/science background in high school and a B or better in calculus, if completed, is desired. Candidates will be interviewed by

the PNS and must comply with Navy standards regarding leadership potential and military/physical fitness. As part of the application process, the candidate will submit a revised degree plan for review by the PNS. The degree plan must be verified by the students faculty advisor and must demonstrate that the student will be able to complete all Naval Science requirements and still graduate on time with his/her assigned class year group. Candidates must have completed at least one but no more than four academic terms with a cumulative GPA above peer mean or 3.0, whichever is higher. Transcripts must reflect a grade of C or better in all courses attempted. Candidates must have completed one academic term of college level math or science. Upon acceptance, the student is required to complete NAVS 1010 as soon as possible. The Navy pays tuition, fees, \$375 per semester for textbooks, and provides a monthly stipend the same as the four-year scholarship.

**Naval Service Training Command (NSTC) Officer Development (OD) Controlled Scholarships** - NSTC OD Controlled Scholarships, including Nurse Corps option, are awarded annually by NSTC OD. The Navy pays tuition, fees, \$375 per semester for textbooks, and provides a monthly stipend the same as the four-year scholarship. This program provides an avenue for the PNS to nominate College Program midshipmen who have demonstrated solid academic and professional performance and indicate potential for program completion and future commissioned service. The NSTC OD Controlled Scholarship Board meets twice per year to select scholarship nominees. NROTC College Program students must have received academic and aptitude marks in Naval Science for a period of at least one academic term prior to nomination. Students enrolled in Naval Science courses, but not members of the NROTC, who have received academic marks for a period of at least one academic term, may be nominated, provided they enroll in the NROTC College Program prior to their nomination. Nominees should have a cumulative grade point average at least equal to the average of all students in the same college or degree program. However, all nominees with a cumulative GPA equal to or above 2.5 will be considered.

**Uniforms**, Naval Science textbooks, and equipment necessary for the NROTC Program are furnished in all programs.

### Active Duty Service Requirements upon Graduation

Active duty service requirements for scholarship midshipmen vary depending on the warfare area they enter. The basic requirement is eight years, five of which must be on active duty. The remaining three years may be completed on active duty or in the reserves. Specific requirements per warfare community are as follows:

- Surface and Submarine Warfare - 8 years total, at least 5 on active duty
- Naval Aviator (Navy and Marine pilot) - 8 years active duty after qualification as a Naval Aviator
- Naval Flight Officer (Navy and Marine non-pilot aviators) - 6 years active duty after qualification as a Naval Flight Officer
- Marines and Nurse Corps - 8 years total, at least 4 on active duty

### Curriculum

The Naval Science curriculum consists of one 3-credit class per semester for eight semesters. In addition, all NROTC students attend two 0-credit Naval Science laboratory class periods and two one-hour physical training sessions per week. Naval Science subjects are listed in this bulletin. Naval Science course hours are considered part of the normal load, which is defined as 15 to 18 credits per semester. Six hours of Naval Science may be used as electives in any major.

### Naval Science Minor

The Department of Naval Science offers a minor to any student, regardless of NROTC affiliation, who completes 15 semester hours of Naval Science, 9 of which must be courses numbered 3000 or above. The following courses qualify:

NAVS 1010	NAVS 1020	NAVS 2010	NAVS 2060
NAVS 3030	NAVS 3050	NAVS 3060	NAVS 4020
NAVS 4030	NAVS 4050		

# Courses of Instruction

This section lists and describes all undergraduate and graduate courses taught by the departments of the university. The courses are presented by subject area and arranged in departmental order, alphabetically. The subject name (the heading in large type) is followed by the subject area code in parentheses.

The subject name (subject area) together with the course number constitutes the official designation for the course for purposes of registration and official records. The specific course title appears following the course number. The figures in parentheses denote the number of hours of semester credit for the course. Following the credit hours are listed contact hours, the estimate of the actual hours per week a student should expect to be in class. If none are listed, the course will meet each week the number of hours that equals the number of course credit hours. Next appear the pre-requisites (required courses to be taken prior to) and co-requisites (required courses to be taken simultaneously with), if applicable.

Courses are numbered according to the following system:

- 1XXX — Undergraduate courses primarily for freshmen.
- 2XXX — Undergraduate courses primarily for sophomores.
- 3XXX — Undergraduate courses primarily for juniors.
- 4XXX — Undergraduate courses primarily for seniors.
- 5XXX — Professional school courses and courses for advanced undergraduates (junior or senior standing required).
- 6XXX — Graduate courses that are paired with parallel 5000-level course.
- 7XXX — Graduate courses. Not available to undergraduates.
- 8XXX — Graduate courses. Not available to undergraduates.
- XXX3 — Undergraduate and Professional Distance Education courses (Graded Option)
- XXX6 — Graduate outreach courses.

## SUBJECT AREA INDEX

(Subject area codes in parentheses)

For departmental curricula and general information, see the index.

For schedule of courses, see the World Wide Web at [www.auburn.edu/academic/au\\_academic.html](http://www.auburn.edu/academic/au_academic.html) and click "Course Schedule."

Accountancy (ACCT).....	147	Electrical and Computer Engineering (ELEC).....	199	Mechanical Engineering (MECH).....	242
Adult Education (ADED).....	195	Elementary Education (CTEE).....	190	Middle School Education (CTMD).....	191
Aerospace Engineering (AERO).....	147	Engineering, Interdepartmental (ENGR).....	205	Military Science (MILS).....	245
Aerospace Studies (AIRF).....	153	English (ENGL).....	202	Music (MUSI).....	250
Africana Studies (AFRI).....	149	English For Speakers of Other Languages (CTES).....	191	Music Education (CTMU).....	191
Agricultural Economics (AGEC).....	149	Entomology (ENTM).....	205	Naval Science (NAVS).....	253
Agriculture (AGRI).....	151	Entrepreneurship and Family Business (ENFB).....	247	Nursing (NURS).....	254
Agronomy and Soils (AGRN).....	151	Environmental Design (ENVD).....	156	Nutrition (NTRI).....	253
Animal Sciences (ANSC).....	153	Environmental Science (ENVI).....	206	Pharmaceutical Sciences (PYPS).....	269
Applied Music (MUAP).....	250	Finance (FINC).....	206	Pharmacy Care Systems (PYPC).....	268
Architecture (ARCH).....	155	Fisheries and Allied Aquacultures (FISH).....	207	Pharmacy Doctorate (PYDI).....	267
Arts (ARTS).....	158	Food Science (FDSC).....	264	Pharmacy Practice, Clinical (PYPP).....	268
Asian (FLAS).....	209	Foreign Language (FLNG).....	212	Philosophy (PHIL).....	257
Aviation and Supply Chain Management (AVSC).....	160	Foreign Languages and Literatures (FLNG).....	209	Physical Education (PHED).....	234
Aviation Management (AVMG).....	160	Forest Engineering (FOEN).....	214	Physics (PHYS).....	258
Biochemistry (BCHE).....	161	Forestry (FORY).....	215	Plant Pathology (PLPA).....	259
Biological Sciences (BIOL).....	162	Forestry and Wildlife Sciences (FOWS).....	217	Political Science (POLI).....	260
Biomedical Sciences (VBMS).....	281	Forestry Products (FOPR).....	215	Polymer and Fiber Engineering (PFEN).....	256
Biosystems Engineering (BSEN).....	168	French (FLFR).....	210	Poultry Science (POUL).....	264
Building Science (BSCI).....	166	Geography (GEOG).....	218	Professional Flight Management (AVMF).....	160
Business Administration (BUSI).....	169	Geology (GEOL).....	219	Psychology (PSYC).....	265
Career and Technical Education.....	188	Geology and Geography.....	218	Public Relations (PRCM).....	183
Cell and Molecular Biology (CMBL).....	179	German (FLGR).....	211	Radio/TV/Film (RTVF).....	184
Chemical Engineering (CHEN).....	173	Graduate School (GRAD).....	221	Reading Education (CTRD).....	192
Chemistry (CHEM).....	172	Graphic Design (GDES).....	229	Rehabilitation and Special Education (RSED).....	274
Chinese (FLCN).....	209	Greek (FLGK).....	211	Religious Studies (RELG).....	258
Civil Engineering (CIVL).....	176	Health Administration (HADM).....	260	Rural Sociology (RSOC).....	150
Communication (COMM).....	182	History (HIST).....	223	Russian (FLRU).....	213
Communication Disorders (CMDS).....	180	Honors College (HONR).....	226	Sciences and Mathematics, Interdepartmental (SCMH).....	270
Community and Civic Engagement (CCEN).....	171	Horticulture (HORT).....	226	Secondary Education (CTSE).....	192
Community Planning (CPLN).....	156	Hotel and Restaurant Management (HRMT).....	228	Social Work (SOWO).....	272
Computer Science and Software Engineering (COMP).....	184	Human Development and Family Studies (HDFS).....	221	Sociology (SOCY).....	270
Consumer Affairs (CAHS).....	170	Human Resource Management (HRMN).....	247	Spanish (FLSP).....	213
Cooperative Education (COOP).....	188	Human Sciences (HUSC).....	228	Special Education, Rehabilitation, Counseling/School Psychology (SERC).....	273
Counselor Education, Counseling Psychology, and School Psychology (COUN).....	273	Industrial and Systems Engineering (INSY).....	230	Statistics (STAT).....	276
Cultural Foundations (FOUN).....	198	Industrial Design (INDD).....	229	Supply Chain Management (SCMN).....	161
Curriculum and Teaching (CTCH).....	188	Information Systems Management (ISMN).....	248	Sustainability Studies (SUST).....	280
Design and Construction Process (DBLD).....	167	Integrated Textile and Apparel Science (ITAS).....	232	Textile Chemistry (TXCH).....	256
Early Childhood Education (CTEC).....	189	Interior Architecture (ARIA).....	156	Textile Management (TXMT).....	280
Economics (ECON).....	193	Italian (FLIT).....	212	Textile Management (TXTN).....	280
Education (EDUC).....	195	Japanese (FLJP).....	212	Theatre (THEA).....	278
Educational Foundations, Leadership and Technology (EFLT).....	195	Journalism (JRNL).....	183	University Courses (UNIV).....	280
Educational Leadership (EDLD).....	196	Kinesiology (KINE).....	232	Veterinary Medicine (VMED).....	281
Educational Media (EDMD).....	197	Laboratory Technology (LABT).....	173	Wildlife Sciences (WILD).....	217
Educational Psychology (EPSY).....	197	Landscape Architecture (LAND).....	157	Women's Studies (WMST).....	285
Educational Research, Measurement and Analysis (ERMA).....	198	Latin (FLLN).....	212		
		Management (MNGT).....	246		
		Marketing (MKTG).....	245		
		Materials Engineering (MATL).....	241		
		Mathematics (MATH).....	235		

**Accountancy (ACCT)**

Dr. Norman Godwin - 844-6225

**ACCT 2110 PRINCIPLES OF FINANCIAL ACCOUNTING (3).** LEC. 3. Basic accounting principles with focus on preparation and use of financial statements. Credit will not be given for both ACCT 2110 and 2810. Sophomore standing.

**ACCT 2117 HONORS PRINCIPLES OF FINANCIAL ACCOUNTING (3).** LEC. 3. Pr., Honors College. Basic accounting principles with focus on preparation and use of financial statements. Sophomore standing.

**ACCT 2210 PRINCIPLES OF MANAGERIAL ACCOUNTING (3).** LEC. 3. Pr., ACCT 2110 or ACCT 2117. Emphasis on cost accounting, budgeting, and decision making using managerial accounting information. Sophomore standing.

**ACCT 2217 HONORS PRINCIPLES OF MANAGERIAL ACCOUNTING (3).** LEC. 3. Pr., Honors College. ACCT 2117 Emphasis on cost accounting, budgeting, and decision-making using managerial accounting information. Spring. Sophomore standing.

**ACCT 2810 FUNDAMENTALS OF ACCOUNTING (3).** LEC. 3. Principles of financial and managerial accounting. Not open to undergraduates majoring in Business. Credit will not be given for both ACCT 2110 and 2810.

**ACCT 2990 BUSINESS LAW (3).** LEC. 3. Introduction to contracts, sales, torts, ethics and the judicial system. Focus is on the business environment.

**ACCT 3110/3113 INTERMEDIATE ACCOUNTING I (3).** LEC. 3. Pr., ACCT 2110 or ACCT 2117. Accounting principles and theory including accounting for current assets, liabilities, and investments.

**ACCT 3120/3123 INTERMEDIATE ACCOUNTING II (3).** LEC. 3. Pr., ACCT 3110 or ACCT 3113. Continuation of ACCT 3110, with emphasis on fixed assets, capital structure, and cash flows. Junior Standing.

**ACCT 3210/3213 COST ACCOUNTING (3).** LEC. 3. Pr., ACCT 2210 or ACCT 2217. A study of how cost data for products, projects, or services are recorded, analyzed, and used for decision making. Junior standing.

**ACCT 3310 BUSINESS PROCESSES AND INTERNAL CONTROLS (3).** LEC. 3. Developing knowledge of business processes, accounting for those business processes, and the internal controls surrounding such processes, both in a manual and computerized environment.

**ACCT 3510/3513 ACCOUNTING INFORMATION SYSTEMS (3).** LEC. 3. Pr., ACCT 3110 or ACCT 3113. Introduction to accounting information systems with emphasis on understanding computer-based systems and developing technology skills. Junior standing.

**ACCT 3990/3993 ADVANCED BUSINESS LAW (3).** LEC. 3. Pr., ACCT 2990. Legal principles concerning secured transactions, bankruptcy, trusts and estates, partnership law, property, corporations, accountant's legal liability, and negotiable instruments. Junior standing.

**ACCT 4140 SPECIAL TOPICS IN ACCOUNTING (3).** LEC. 3. Pr., ACCT 3120 or ACCT 3123. A study of current issues in accounting theory and practice. Topics include regulations and economic and technological developments.

**ACCT 4310/4313 AUDITING AND ASSURANCE SERVICES (3).** LEC. 3. Pr., ACCT 3120 or ACCT 3123. Principles of auditing standards, ethics, controls, evidence, sampling, and audit reports.

**ACCT 4410/4413 INCOME TAX I (3).** LEC. 3. Pr., ACCT 3110 or ACCT 3113. Principles of federal taxation as it applies to individuals and property transactions.

**ACCT 4900 INDEPENDENT STUDY (1-3).** IND. SU. Advanced individual research and study in accounting under the direction of a faculty member. Course may be repeated for a maximum of 6 credit hours.

**ACCT 4920 ACCOUNTING INTERNSHIP (1-6).** LEC. SU. Internship opportunity with an accounting firm, corporation, or governmental entity. Course may be repeated for a maximum of 6 credit hours.

**ACCT 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ACCT 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ACCT 5130/5133 ADVANCED ACCOUNTING TOPICS (3).** LEC. 3. Pr., ACCT 3120 or ACCT 3123. Emphasis on advanced accounting topics including business combinations, foreign currency transactions, derivatives, and other advanced financial topics.

**ACCT 5310/5313 ADVANCED AUDITING AND ASSURANCE SERVICES (3).** LEC. 3. Pr., ACCT 4310 or ACCT 4313. Advanced topics in auditing and assurance services. Departmental Approval.

**ACCT 5420/5423 INCOME TAX II (3).** LEC. 3. Pr., ACCT 4410 or ACCT 4413. Tax accounting for individuals, partnerships, corporations, estates, and trusts. Extensive use of a tax-service program.

**ACCT 5610/5613 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING (3).** LEC. 3. Pr., ACCT 3120 or ACCT 3123. Accounting for governmental and not-for-profit entities. Focus on effective use of resources.

**ACCT 5990/5993 ADVANCED BUSINESS LAW (3).** LEC. 3. Legal principles concerning secured transactions, bankruptcy, trusts and estates, partnership law, property, corporations, accountant's legal liability, and negotiable instruments.

**ACCT 6130/6136 ADVANCED ACCOUNTING TOPICS (3).** LEC. 3. Pr., ACCT 3120 or ACCT 3123. Emphasis on advanced accounting topics including business combinations, foreign currency transactions, derivatives, and other advanced financial topics.

**ACCT 6310/6316 ADVANCED AUDITING AND ASSURANCE SERVICES (3).** LEC. 3. Pr., ACCT 4310 or ACCT 4313. Advanced topics in auditing and assurance services.

**ACCT 6420/6426 INCOME TAX II (3).** LEC. 3. Pr., ACCT 4410 or ACCT 4413. Tax accounting for individuals, partnerships, corporations, estates and trusts. Extensive use of a tax-service program.

**ACCT 6610/6616 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING (3).** LEC. 3. Pr., ACCT 3120 or ACCT 3123 Accounting for governmental and not-for-profit entities. Focus on effective use of resources.

**ACCT 6990/6996 ADVANCED BUSINESS LAW (3).** LEC. 3. Legal principles concerning secured transactions, bankruptcy, trusts and estates, partnership law, property, corporations, accountant's legal liability, and negotiable instruments.

**ACCT 7110/7116 RESEARCH IN ACCOUNTING (3).** LEC. 3. Pr., ACCT 5130 or ACCT 5133 or ACCT 6130 or ACCT 6136. An evaluation, critique, and application of financial accounting theory to current reporting problems using current research tools and resources. Departmental approval.

**ACCT 7120/7126 INTERNATIONAL ACCOUNTING (3).** LEC. 3. Pr., ACCT 5130 or ACCT 5133 or ACCT 6130 or ACCT 6136 Accounting issues unique to international business activity. Departmental approval.

**ACCT 7210/7216 ACCOUNTING FOR DECISION MAKING AND CONTROL (3).** LEC. 3. Pr., ACCT 3210 or ACCT 3213 Relationship between management accounting and information systems and analysis of costs. Departmental approval.

**ACCT 7310/7316 RISK ANALYSIS AND CONTROL (3).** LEC. 3. Pr., ACCT 4310 or ACCT 4313 Analysis of strategic and business process risks and design of effective financial controls. Departmental approval.

**ACCT 7320/7326 FINANCIAL ANALYSIS AND VALUATION (3).** LEC. 3. Pr., (ACCT 5130 or ACCT 5133) or (ACCT 6130 or ACCT 6136) Forecast of earnings and financial statements, valuation approaches and their application in accounting measurement, and financial reporting as a tool in management communication with investors. Departmental approval.

**ACCT 7410/7416 FEDERAL TAX RESEARCH (3).** LEC. 3. Pr., ACCT 5420 or ACCT 5423 or ACCT 6420 or ACCT 6426. Sources of authority used in federal tax research and survey of tax policy issues. Departmental approval.

**ACCT 7420/7426 CORPORATE AND PARTNERSHIP TAXATION (3).** LEC. 3. Pr., ACCT 7410 or ACCT 7416. Tax issues involving corporations and partnership.

**ACCT 7430/7436 TAXES AND DECISION MAKING (3).** LEC. 3. Pr., ACCT 5420 or ACCT 5423 or ACCT 6420 or ACCT 6426. Emphasis on identifying, understanding, and evaluating tax planning opportunities. Departmental approval.

**ACCT 7510/7516 INTEGRATED ACCOUNTING APPLICATIONS (3).** LEC. 3. Pr., ACCT 3510 or ACCT 3513. Design and analysis of accounting information systems and relational databases. Departmental approval.

**ACCT 7520 ENTERPRISE ACCOUNTING SYSTEMS (3).** LEC. 3. Pr., ACCT 7510 or ACCT 7516. Design, analysis and use of Enterprise accounting systems.

**ACCT 7970/7976 ADVANCED SPECIAL TOPICS IN ACCOUNTING (3).** LEC. 3. Pr., ACCT 7110 or ACCT 7116. Industry and technology issues in accounting.

**ACCT 7980/7986 INTEGRATED ACCOUNTING TOPICS AND CASE ANALYSIS (3).** LEC. 3. Final semester in Master of Accountancy Program or departmental approval; Capstone course for majors.

**Aerospace Engineering (AERO)**

Dr. Robert Gross B 844-6846

**AERO 2200 AEROSPACE FUNDAMENTALS (2).** LEC. 1, LAB. 3. Pr., ENGR 1110. Introduction to the fundamental physical concepts required for the successful design of aircraft and spacecraft.

**AERO 3040 ELEMENTARY METEOROLOGY (3).** LEC. 3. Basic principles, causes, effects and phenomena of weather with fundamental techniques of forecasting.

**AERO 3110 AERODYNAMICS I (3).** LEC. 3. Pr., MATH 2650. Properties of fluids, fluid statics, conservation of mass and momentum, atmospheric properties, two dimensional airfoils, three dimensional wings, drag, and flight performance.

**AERO 3120 AERODYNAMICS II (3).** LEC. 3. Pr., AERO 3110 and ENGR 2010. Principles of compressible flow including flows with area changes, friction and heat transfer. Fundamental analysis of aerodynamics and potential flow theory. Correlation of potential flow theory with experimental data.

**AERO 3130 AERODYNAMICS LABORATORY (2).** LEC. 1, LAB. 3. Pr., P/C, AERO 2200. Application of fundamental aerodynamic principles to subsonic and supersonic wind tunnel experiments.

## Aerospace Engineering (AERO)

**AERO 3220 AEROSPACE SYSTEMS (3).** LEC. 3. Pr., ENGR 2350 and MATH 2650. Modeling of system elements, classical feedback control techniques used in the analysis of linear systems, analysis of systems undergoing various motions connected with flight.

**AERO 3230 FLIGHT DYNAMICS (4).** LEC. 3, LAB. 3. Pr., AERO 3110 and ENGR 2350 and MATH 2650. Airplane performance and stability and control including analytical prediction of performance characteristics, experimental determination of static stability parameters, and analytical prediction of dynamic stability characteristics.

**AERO 3310 ORBITAL MECHANICS (3).** LEC. 3. Pr., ENGR 2350 and MATH 2650. Geometry of the solar system and orbital motion, mathematical integrals of motion, detailed analysis of two-body dynamics and introduction to artificial satellite orbits; Hohmann transfer and patched conics for lunar and interplanetary trajectories.

**AERO 3610 AEROSPACE STRUCTURES I (2).** LEC. 1, LAB. 3. Pr., ENGR 2070. Fundamental concepts employed in the mechanical testing of engineering materials and structures. Load, stress, and strain measurement techniques are utilized to determine material properties and structural response.

**AERO 3970 SPECIAL TOPICS (1-3).** AAB. SU. Departmental approval; Investigation of various topics in Aerospace Engineering. Course may be repeated for a maximum of 6 credit hours.

**AERO 4140 AERODYNAMICS III (3).** LEC. 3. Pr., AERO 3120. Theoretical background essential to a fundamental understanding of laminar and turbulent boundary layers and their relations to skin friction and heat transfer.

**AERO 4510 AEROSPACE PROPULSION (4).** LEC. 3, LAB. 3. Pr., AERO 3120. Fundamental analysis of airbreathing jet propulsion. Introduction to chemical rocket propulsion.

**AERO 4620 AEROSPACE STRUCTURES II (4).** LEC. 3, LAB. 3. Pr., AERO 3610 and MATH 2660. Aircraft and space vehicle structures. An introduction to the finite element method and its application to structural analysis. The laboratory will utilize state-of-the-art software numerical solution of aerospace structural systems.

**AERO 4630 AEROSPACE STRUCTURAL DYNAMICS (4).** LEC. 3, LAB. 3. Pr., AERO 4620. Free, forced and damped vibration of single and multiple degree-of-freedom systems. The laboratory will utilize state-of-the-art software for the analysis of the vibration and dynamic response of structural systems.

**AERO 4710 AEROSPACE DESIGN I (3).** LEC. 2, LAB. 3. Pr., AERO 3120. Introduction to the principles required to design aerospace vehicles.

**AERO 4720 AEROSPACE DESIGN II (3).** LEC. 2, LAB. 3. Pr., AERO 4710. This course is continuation of AERO 4710.

**AERO 4730 SPACE MISSION DESIGN I (3).** LEC. 2, LAB. 3. Pr., AERO 3310. Introduction to the design of space systems including the identification of launch requirements, spacecraft system components, satellite tracking and orbital analysis to achieve a stated scientific objective.

**AERO 4740 SPACE MISSION DESIGN II (3).** LEC. 2, LAB. 3. Pr., AERO 4730. A continuation of AERO 4730, Space Mission Design I.

**AERO 4970 SPECIAL TOPICS IN AEROSPACE ENGINEERING (1-3).** AAB. Investigation of current state-of-the-art technologies in aerospace engineering. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**AERO 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Membership in the Honors College and departmental approval required; Directed research and writing of an honors thesis. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**AERO 4AA0 PROGRAM ASSESSMENT (0).** LAB. SU. Pr., P/C, AERO 4710 or P/C, AERO 4730. Academic program assessment covering the areas of aerodynamics, aerospace structures, orbital mechanics, propulsion and vehicle design.

**AERO 5110 MISSILE AERODYNAMICS (3).** LEC. 3. Pr., AERO 3120. Coreq., AERO 4140. Aerodynamics of slender wing-body combinations, interference effects, linear and non-linear effects, applications to missile design and performance.

**AERO 5120 ROTARY WING AERODYNAMICS (3).** LEC. 3. Pr., AERO 3110. Aerodynamics and flight characteristics of rotary-wing aircraft.

**AERO 5210 FLIGHT SIMULATION (3).** LEC. 3. Pr., AERO 3230. Time domain simulation of nonlinear, six-degree-of-freedom motion of flight vehicles. Development of modular digital simulations including vehicle models for aerodynamics and propulsion, control, guidance subsystems.

**AERO 5320 APPLICATIONS OF THE GLOBAL POSITIONING SYSTEM (3).** LEC. 3. Operating principles of the control, space and user segments of the Global Positioning System. Implementation of post-processing and real-time positioning strategies and applications. Field work demonstrating the use of GPS receivers, data processing and position accuracy. Departmental approval.

**AERO 5330 APPLIED ORBITAL MECHANICS (3).** LEC. 3. Pr., AERO 3310. Special perturbation techniques: N-body perturbations; general and restricted three-body problems; preliminary orbit determination; C-W equations, targeting and rendezvous; constellation design; mission planning.

**AERO 5340 SATELLITE APPLICATION (3).** LEC. 3. Pr., AERO 3310 AERO 3310 or departmental approval; Principles related to the application of satellites to remote

sensing, telecommunications, navigation and trajectory determination. Principles of space policy applied to both the unmanned and manned space flight programs.

**AERO 5520 ROCKET PROPULSION (3).** LEC. 3. Pr., AERO 4510. Analysis of the thermodynamics, gas dynamics and design of liquid and solid propellant rocket engines.

**AERO 5530 SPACE PROPULSION (3).** LEC. 3. Pr., AERO 4510. Analysis of space propulsion systems. Dynamics of electromagnetic systems, ion engines, photon drives, laser propulsion.

**AERO 5620 DYNAMIC SIMULATION (3).** LEC. 3. Pr., ENGR 2350. Computer techniques applied to the analysis of aerospace engineering problems using the digital problem-oriented language, Advanced Continuous Simulation Language (ACSL).

**AERO 5630 AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS (4).** LEC. 3, LAB. 3. Pr., AERO 3610. Basic material and manufacturing information for laminated composite structures. Computational structural analysis of typical aerospace composite structures coupled with experimental verification of the structural response.

**AERO 5750 LEGAL ASPECTS OF ENGINEERING PRACTICE (3).** LEC. 3. Pr., PHIL 1020 or PHIL 1027. The role of the law in the manufacture of a product. Ethical issues that may confront designers and engineers.

**AERO 6110/6116 MISSILE AERODYNAMICS (3).** LEC. 3. Pr., AERO 3120. Coreq., AERO 4140. Aerodynamics of slender wing-body combinations, interference effects, linear and non-linear effects, applications to missile design and performance.

**AERO 6120/6126 ROTARY WING AERODYNAMICS (3).** LEC. 3. Pr., AERO 3110. Aerodynamics and flight characteristics of rotary-wing aircraft.

**AERO 6210/6216 FLIGHT SIMULATION (3).** LEC. 3. Pr., AERO 3230. Time domain simulation of nonlinear, six-degree-of-freedom motion of flight vehicles. Development of modular digital simulations including vehicle models for aerodynamics and propulsion, control, guidance subsystems.

**AERO 6320/6326 APPLICATIONS OF THE GLOBAL POSITIONING SYSTEM (3).** LEC. 3. Operating principles of the control, space and user segments of the Global Positioning System. Implementation of post-processing and real-time positioning strategies and applications. Field work demonstrating the use of GPS receivers, data processing, and position accuracy. Departmental approval.

**AERO 6330/6336 APPLIED ORBITAL MECHANICS (3).** LEC. 3. Pr., AERO 3310. Special perturbation techniques: N-body perturbations; general and restricted three-body problems; preliminary orbit determination; C-W equations, targeting and rendezvous; constellation design; mission planning.

**AERO 6340/6346 SATELLITE APPLICATION (3).** LEC. 3. Pr., AERO 3310. Principles related to the application of satellites to remote sensing, telecommunications, navigation and trajectory determination. Principles of space policy applied to both the unmanned and manned space flight programs. Departmental approval.

**AERO 6520/6526 ROCKET PROPULSION (3).** LEC. 3. Pr., AERO 4510. Analysis of the thermodynamics, gas dynamics and design of liquid and solid propellant rocket engines.

**AERO 6530/6536 SPACE PROPULSION (3).** LEC. 3. Pr., AERO 4510. Analysis of space propulsion systems. Dynamics of electromagnetic systems, ion engines, photon drives, laser propulsion.

**AERO 6620/6626 DYNAMIC SIMULATION (3).** LEC. 3. Pr., ENGR 2350. Computer techniques applied to the analysis of aerospace engineering problems using the digital problem-oriented language, Advanced Continuous Simulation Language (ACSL).

**AERO 6630/6636 AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS (4).** LEC. 3, LAB. 3. Pr., AERO 3610. Basic material and manufacturing information for laminated composite structures. Computational structural analysis of typical aerospace composite structures coupled with experimental verification of the structural response.

**AERO 6750/6756 LEGAL ASPECTS OF ENGINEERING PRACTICE (3).** LEC. 3. Pr., PHIL 1020. The role of the law in the manufacture of a product. Ethical issues that may confront designers and engineers.

**AERO 7100/7106 ADVANCED SUPERSONIC AERODYNAMICS (3).** LEC. 3. Pr., AERO 4140. A rigorous development of linearized and nonlinear fluid flow theories and application. Lifting surfaces, lifting bodies, duct flow, boundary layer effects, shock and expansion waves and method of characteristics.

**AERO 7110/7116 AIRFOIL AERODYNAMICS (3).** LEC. 3. Pr., AERO 3120. Thin airfoil theory, Joukowski transformations, Karman Trefftz transformations, thick airfoil theory, panel methods and comparison with experimental data.

**AERO 7120/7126 DYNAMICS OF VISCOUS FLUIDS I (3).** LEC. 3. Pr., AERO 7100 or AERO 7106. Exact solutions to the Navier Stokes equations. Exact and approximate solutions of the laminar boundary layer equations. Incompressible and compressible boundary layers in theory and experiment.

**AERO 7130/7136 DYNAMICS OF VISCOUS FLUIDS II (3).** LEC. 3. Pr., AERO 7120 or AERO 7126. Turbulent flows, the Reynolds stresses and turbulence model-

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ing. Computation of incompressible and compressible turbulent boundary layers. Stability theory and transition.

**AERO 7140/7146 ADVANCED COMPUTATIONAL FLUID DYNAMICS (3).** LEC. 3. Pr., AERO 5140 and AERO 6140. Advanced methods for solving problems in computational fluid dynamics. Topics include: discretization approaches, implicit solution techniques, curvilinear coordinate systems, and upwind schemes.

**AERO 7200/7206 DYNAMICS OF FLIGHT (3).** LEC. 3. Pr., AERO 3230. Development of specialized concepts and methods in dynamics applicable to the modeling of flight vehicle motion. Stability concepts and analysis of the stability of flight vehicle motions. Effects of variable mass and flexibility. Departmental approval.

**AERO 7210/7216 FLIGHT DYNAMICS OF HYPERVELOCITY VEHICLES (3).** LEC. 3. Pr., AERO 7200 or AERO 7206. Development of specialized concepts and methods in dynamics applicable to the modeling of hypersonic flight vehicle motion. Stability concepts and analysis of the stability of steady-state motions of very high speed flight vehicles. Departmental approval.

**AERO 7220/7226 SPACECRAFT ATTITUDE DYNAMICS AND CONTROL (3).** LEC. 3. Pr., AERO 7200 or AERO 7206. Development of specialized concepts and methods in dynamics applicable to the modeling of spacecraft rotational motion. Methods for controlling spacecraft attitude. Analysis of the attitude stability and controllability of spacecraft attitude motion. Departmental approval.

**AERO 7230/7236 HELICOPTER DYNAMICS AND CONTROL (3).** LEC. 3. Pr., AERO 7200 or AERO 7206. Development of specialized concepts and methods in dynamics applicable to the modeling of helicopters. Analysis of helicopter stability and controllability. Departmental approval.

**AERO 7330/7336 ORBIT DETERMINATION (3).** LEC. 3. Pr., AERO 6330 or AERO 6336. Elements of orbit determination; least squares, minimum norm, minimum variance solutions; batch, sequential and extended sequential filters.

**AERO 7340/7346 ADVANCED ORBITAL MECHANICS (3).** LEC. 3. Pr., AERO 6330 or AERO 6336. Elements of time measurements, earth orientation/coordinate system; f and g series; Lambert's Problem; linear orbit theory and circumlunar trajectories.

**AERO 7350/7356 OPTIMAL CONTROL OF AEROSPACE VEHICLES (3).** LEC. 3. Pr., AERO 3220. Principles of optimization; Pontryagin's principle; Linear quadratic regulator; Observers, state estimation, LQG problem. Optimal output feedback; Synthesis of flight control systems. AERO 3220 or equivalent.

**AERO 7370/7376 FUNDAMENTALS OF THE GLOBAL POSITIONING SYSTEM (3).** LEC. 3. Pr., AERO 7330 or AERO 7336. Principles of the Global Positioning System: GPS overview and historical development; modeling of pseudo-range and carrier phase measurements; positioning solution strategies using kinematic, dynamic, and reduced dynamic techniques. Departmental approval.

**AERO 7390/7396 SATELLITE REMOTE SENSING (3).** LEC. 3. Topics in satellite remote sensing principles and techniques including active and passive instruments, data processing, and geophysical parameter recovery algorithms. Departmental approval.

**AERO 7510/7516 THRUST GENERATION (3).** LEC. 3. Pr., AERO 4510. Aerothermodynamics of propulsion. Selected topics in gas dynamics, thermodynamics, and heat transfer as applied to airbreathing and space propulsion.

**AERO 7520/7526 ADVANCED AIRBREATHING PROPULSION (3).** LEC. 3. Pr., AERO 4510. Topics emphasizing interaction between external aerodynamics and performance of airbreathing jet engines. Performance optimization of ramjet, turbojet, and turbofan engines. Component matching.

**AERO 7530/7536 AEROTHERMOCHEM OF PROPULSION (3).** LEC. 3. Pr., AERO 4510. Aerothermodynamics of compressible flow, chemical propellant characteristics, heat transfer in fluid flow, statistical gas dynamics, kinetic theory of gases.

**AERO 7610/7616 ADVANCED AEROSTRUCTURES (3).** LEC. 3. Pr., AERO 4620. Development of the fundamental principles of the analysis of non-linear problems in solid mechanics. Structural problems involving non-linear deflections and/or material properties. Departmental approval.

**AERO 7620/7626 AEROSPACE COMPUTATIONAL STRUCTURAL ANALYSIS: STATIC STRUCTURES (3).** LEC. 3. Pr., AERO 4620 Advanced techniques for the numerical solution of static elastic and plastic problems, including two and three dimensional solutions. Departmental approval.

**AERO 7630/7636 AEROSPACE COMPUTATIONAL STRUCTURAL ANALYSIS: STRUCTURAL DYNAMICS (3).** LEC. 3. Pr., AERO 4630. Advanced techniques for the numerical solution to problems in structural dynamics, including steady state and transient response of two-and three-dimensional structures. Departmental approval.

**AERO 7640/7646 ADAPTIVE AERO-STRUCTURES (4).** LEC. 3, LAB. 3. Basic material and manufacturing information for materials employed in adaptive structures. Shape-memory, magnetostrictive, magnetorheological-electrorheological and piezoelectric materials are examined. Departmental approval.

**AERO 7660/7666 AEROLASTICITY (3).** LEC. 3. Pr., AERO 4630. Introduction to the field of aeroelasticity and the interaction therein of structural mechanics and fluid mechanics with dynamics as the "interface adhesive" between them. Flutter, divergence, aileron reversal and related phenomena.

**AERO 7670/7676 INTRODUCTION TO LARGE SPACE STRUCTURES (3).** LEC. 3. Pr., AERO 4630. Large space structures and their unique concepts, novel on-earth testing requirements, variety of damping schemes and analysis techniques. Concepts and analysis related to shape control, active and passive damping, and structural dynamics/controls interaction.

**AERO 7950 SEMINAR (1).** LEC. 1. SU. Weekly lectures on current developments in aerospace sciences by staff members, graduate students, and visiting scientists and engineers.

**AERO 7970/7976 SPECIAL TOPICS IN AEROSPACE ENGINEERING (1-3).** LEC. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**AERO 7980/7986 AEROSPACE ENGINEERING PROJECT (3).** LEC. 3. SU. Intended for students in the MAE program. On or off-campus project. The nature of the project is to be determined by the student's major professor. Approval of the project and its final written report by the student's advisory committee is required. Course may be repeated with change in topic. Departmental approval.

**AERO 7990 RESEARCH AND THESIS (1-10).** MST. Credit hours to be arranged. Course may be repeated with change in topics.

**AERO 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

### Africana Studies (AFRI)

Dr. Patience Essah - 844-6651

**AFRI 2000 INTRODUCTION TO AFRICANA STUDIES (3).** LEC. 3. Pr., (ENGL 1100 or ENGL 1107) and (ENGL 1120 or ENGL 1127). An introduction to theory and method that offers an interdisciplinary perspective on Africa and the African Diaspora.

### Agricultural Economics (AGEC)

Dr. Curtis Jolly - 844-4800

**AGEC 3010 AGRIBUSINESS MARKETING (3).** LEC. 3. Pr., (ECON 2020 or ECON 2027) and COMP 1000. Principles and problems of marketing farm and agribusiness products including marketing methods, channels, structures, and institutions.

**AGEC 3050 FARM APPRAISAL (2).** LEC. 2. Theory of land values; terminology, processes and procedures for alternative appraisal purposes; factors affecting value; and evaluation of appraisal methods.

**AGEC 3080 FUTURES AND OPTIONS MARKETING (2).** LEC. 2. Pr., (ECON 2020 or ECON 2027) and COMP 1000. Functions, institutions, economic performance, and practices and procedures involved in utilizing futures and options markets to manage market price risks.

**AGEC 3100 COMPUTER APPLICATIONS IN AGRICULTURAL ECONOMICS (3).** LEC. 3. Pr., P/C, COMP 1000 or P/C, STAT 2510 or P/C, STAT 2610. Analytical methods for agricultural economics: for agricultural economics: spreadsheet applications, optimization, regression, budgeting, and risk management.

**AGEC 3920 AGRICULTURAL BUSINESS AND ECONOMICS INTERNSHIP (1-3).** INT. SU. Departmental approval. Practical experience with agricultural business firms and agencies including finance, farm supply, production, marketing and sales and government. Course may be repeated for a maximum of 6 credit hours.

**AGEC 4000 PRINCIPLES OF AGRIBUSINESS MANAGEMENT (3).** LEC. 3. Pr., (ECON 2020 or ECON 2027) and COMP 1000. Economics and business principles applied to agriculture: business formation, composing and analyzing financial statements, financial analysis and decision-making functions of management, capital budgeting and investment decisions. (Credit will not be given to majors in AGECE, ECON, or business).

**AGEC 4040 AGRICULTURAL FINANCE (3).** LEC. 3. Pr., (ECON 2020 or ECON 2027) and COMP 1000 and (ACCT 2210 or ACCT 2910). Economic problems and policies in financing agriculture.

**AGEC 4070 AGRICULTURAL LAW (3).** LEC. 3. Recognition of legal problems associated with property ownership, contracts, torts, financing, estate planning and environmental controls and restrictions.

**AGEC 4100 AGRICULTURAL COOPERATIVES (2).** LEC. 2. Principles and problems of organizing and operating farmers' cooperative buying and selling associations.

**AGEC 4120 ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS (3).** LEC. 3. Economic principles related to common property, public goods, property rights, externalities and resource scarcity and allocation applied to current issues.

**AGEC 4300 AGRICULTURAL POLICIES AND TRADE (3).** LEC. 3. Pr., ECON 3020. Public policies affecting agriculture. Theory and significance of international trade, distribution of production and trade, issues and policies, and influence of exchange rates.

**AGEC 4950 UNDERGRADUATE SEMINAR (0).** SEM. SU. Current developments in agricultural economics; role of agricultural economists in agribusiness firms and the general economy. Interaction with agricultural and agribusiness leaders.

**AGEC 4960 SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS (1-2).** IND. Departmental approval. Individual or group projects with a faculty member in

## Agricultural Economics (AGEC)

agricultural economics or agribusiness. May include research, data analysis or a combination of these. Course may be repeated for a maximum of 4 credit hours.

**AGEC 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Membership in the Honors College required; Topics in agricultural economics. Course may be repeated for a maximum of 3 credit hours

**AGEC 4997 HONORS THESIS (1-3).** LEC. 3. Pr., Honors College. Directed research and writing of honors thesis. Course may be repeated for a maximum of 3 credit hours.

**AGEC 5010 FARM MANAGEMENT (3).** LEC. 3. Pr., COMP 1000 and ECON 2020. Principles of economics applied to agriculture; uses of farm records to improve management of the farm; developing enterprise budgets and use in preparing a profit-maximizing farm plan.

**AGEC 5030 AGRICULTURAL PRICES (3).** LEC. 3. Pr., ECON 3020 and MATH 1690 and (STAT 2610 or STAT 2510). Functions of prices and principles of supply and demand in price determination for agricultural products and markets. Statistical estimation of price and demand relationships. Spring.

**AGEC 5090 RESOURCE ECONOMICS I (3).** LEC. 3. Pr., COMP 1000 and ECON 3020. Supply, demand, future requirements and availability of natural resources plus institutional framework affecting and conditioning such use through property rights, zoning, taxation, etc.

**AGEC 5100 AGRICULTURAL BUSINESS MANAGEMENT (3).** LEC. 3. Pr., (ECON 2020 or ECON 2027) and COMP 1000 and AGECE 4040 and ACCT 2210. Principles and problems in acquiring or starting, organizing, and operating successful agribusiness; financial and operational efficiency; human resource and public relations; decision-making tools.

**AGEC 5210 ADVANCED AGRIBUSINESS MANAGEMENT (3).** LEC. 3. Pr., AGECE 5100 and ECON 3020 and MATH 1690 and (STAT 2510 or STAT 2610). Case studies, managerial economics.

**AGEC 6010 FARM MANAGEMENT (3).** LEC. 3. Pr., COMP 1000 and ECON 3020. Principles of economics applied to agriculture; uses of farm records to improve management of the farm; developing enterprise budgets and use in preparing a profit-maximizing farm plan.

**AGEC 6030 AGRICULTURAL PRICES (3).** LEC. 3. Pr., ECON 3020 and MATH 1690 and (STAT 2510 or STAT 2610). Functions of prices and principles of supply and demand in price determination for agricultural products and markets. Statistical estimation of price and demand relationships. Spring.

**AGEC 6090 RESOURCE ECONOMICS I (3).** LEC. 3. Pr., COMP 1000 and ECON 3020. Supply, demand, future requirements and availability of natural resources plus institutional framework affecting and conditioning such use through property rights, zoning, taxation, etc.

**AGEC 6100 AGRICULTURAL BUSINESS MANAGEMENT (3).** LEC. 3. Pr., (ECON 2020 or ECON 2027) and COMP 1000 and AGECE 4040 and ACCT 2210. Principles and problems in acquiring or starting, organizing, and operating successful agribusiness; financial and operational efficiency; human resource and public relations; decision-making tools.

**AGEC 6210 ADVANCED AGRIBUSINESS MANAGEMENT (3).** LEC. 3. Pr., AGECE 6100 and ECON 3020 and MATH 1690 and (STAT 2510 or STAT 2610). Case studies, managerial economics.

**AGEC 7000 ADVANCED AGRICULTURAL AND ENVIRONMENTAL POLICY (3).** LEC. 3. Pr., (AGECE 6090 and AGECE 4300) or AGECE 6030. Food and farm problems and related governmental actions from historical, political and analytical viewpoints. Welfare economics and other procedures used to evaluate costs and benefits of existing and proposed governmental programs and actions affecting agriculture, environment and the consumer.

**AGEC 7010 ADVANCED FARM MANAGEMENT (3).** LEC. 3. Pr., AGECE 6010. Advanced theory and application of farm management principle principles and economic concepts to agriculture. Planning, implementation, and control of various types of farms for optimum utilization of available resources.

**AGEC 7030 ADVANCED AGRICULTURAL PRICES (3).** LEC. 3. Pr., AGECE 6030 and ECON 6020. Theory and measurement of farm supply, retail demand and marketing-margin relationships. Introduction to equilibrium-displacement modeling.

**AGEC 7080 PRODUCTION ECONOMICS I (3).** LEC. 3. Pr., ECON 6020. Resource allocation and efficiency of production in the firm, between firms, and between agriculture and other industries.

**AGEC 7090 RESOURCE ECONOMICS II (3).** LEC. 3. Pr., AGECE 6090. Analysis of institutional and economic factors affecting use of natural resources including economic feasibility/conservation, benefit-cost analysis, environmental controls and other interventions.

**AGEC 7100 OPERATIONS RESEARCH METHODS IN AGRICULTURAL ECONOMICS (3).** LEC. 3. Optimization techniques with emphasis on linear programming and its extensions applied to agriculture. General theoretical background and associated computational procedures are used for presentation of models and modeling techniques.

**AGEC 7110 AGRICULTURAL ECONOMIC DEVELOPMENT (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Conceptual and empirical analysis of economic devel-

opment with emphasis on the lesser developed areas and countries. Analysis of financial and technical aid to other countries case studies of development problems.

**AGEC 7200 AQUACULTURAL ECONOMICS I (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Application of economic theories and principles to production, marketing, and consumption of aquacultural enterprises and products. Role of aquaculture in economic development.

**AGEC 7250 AQUACULTURAL ECONOMICS II (3).** LEC. 3. Pr., AGECE 7200. Application of advanced economic theory and principles of production, marketing, and consumption of aquacultural products. Analysis of comparative role and competitive position of aquaculture in economic development and resource allocation.

**AGEC 7590 INTRODUCTION TO AGRICULTURAL ECONOMETRICS (3).** LEC. 3. Pr., (MATH 1610 or MATH 1617) and STAT 2610. Regression analysis in economic research. Model specification and estimation plus introduction to detection and correction of violations of assumptions of OLS. Hypothesis testing, dummy variables, heteroschedasticity, autocorrelation and measurement errors.

**AGEC 7690 MICROECONOMETRICS IN AGRICULTURAL ECONOMICS I (3).** LEC. 3. Pr., AGECE 7590. The focus will be on implementation and interpretation, as well as on the microeconomic foundations of the econometric models covered in the course.

**AGEC 7700 RESEARCH METHODS IN AGRICULTURAL ECONOMICS (3).** LEC. 3. Pr., ECON 7130 and AGECE 7590. Overview of the philosophy of science, detailed discussion of how various research tools are used to perform applied research in agricultural economics.

**AGEC 7950 GRADUATE SEMINAR (1).** SEM. 1. SU. A forum for sharing research information and interaction on topics and issues of current interest.

**AGEC 7960 SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS (1-3).** LEC. Departmental approval required; Individualized direction/instruction by faculty on research, teaching and/or outreach issues. Course may be repeated for a maximum of 6 credit hours.

**AGEC 7970 SPECIAL TOPICS IN AGRICULTURAL ECONOMICS (3).** LEC. 3. Departmental approval. New topics in agricultural and applied economics.

**AGEC 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**AGEC 8060 THEORY OF AGRICULTURAL MARKETS (3).** LEC. 3. Pr., AGECE 7590 and ECON 6020. Theory and methods for estimating complete demand systems (e.g., LES, Translog, ALIDS, and Rotterdam) for food products. Introduction to imperfect competition models.

**AGEC 8080 PRODUCTION ECONOMICS II (3).** LEC. 3. Pr., AGECE 7080. Firm-level economics problems are extended. Consideration of the influence of risk on firm behavior; empirical analysis of theoretical problems; welfare analysis; technical change; impacts of research investments.

**AGEC 8090 FOOD AND AGRICULTURAL POLICY (3).** LEC. 3. Pr., ECON 6020 or ECON 7000 or ECON 7110. The course will cover current issues in the economics and policies associated with food, food production and marketing.

**AGEC 8310 MICROECONOMETRICS IN AGRICULTURAL ECONOMICS II (3).** LEC. 3. Pr., AGECE 7690. The focus will be on implementation and interpretation, as well as on the microeconomic foundations of the econometric models covered in the course.

**AGEC 8690 TOPICS IN AGRICULTURAL MICROECONOMETRICS (3).** LEC. 3. Pr., AGECE 8310. This course is meant to assimilate knowledge acquired throughout core coursework in the Agricultural Economics PhD program.

**AGEC 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

## RURAL SOCIOLOGY (RSOC)

**RSOC 3190 AGRICULTURE AND SOCIETY (3).** LEC. 3. Values and conflicts associated with technological and other changes in farming, rural communities and the food system. Perspectives on agrarian structures, food security, and government policy.

**RSOC 3620 COMMUNITY ORGANIZATION (3).** LEC. 3. Analysis of social organization at the community level. Conceptual framework developed to examine both internal and external forces affecting urban as well as rural communities in the U.S., and to identify strategies to strengthen local capacity to adapt to changing social and economic environments.

**RSOC 4410 EXTENSION PROGRAMS AND METHODS (3).** LEC. 3. Principles and models of applied social change in U.S. and developing nations. The Cooperative Extension System is analyzed as an educational institution. Fundamental steps in program development and evaluation.

**RSOC 4910 DIRECTED FIELD EXPERIENCE (3).** LEC. 3. Structured intensive involvement within an agency or organization serving people in communities or rural areas. Supervision is shared between agency personnel and department faculty who plan, consult, discuss, and evaluate student activities and reports. Departmental approval.

**RSOC 4930 DIRECTED STUDIES (1-3).** IND. Departmental approval. Individualized study of topics in rural sociology and community development, natural resources

## Agronomy and Soils (AGRN)

and environmental issues conducted in consultation with a faculty member. Course may be repeated for a maximum of 3 credit hours.

**RSOC 4960 SPECIAL PROBLEMS IN RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT (1-3).** LEC. Departmental approval. Investigation of problems in rural sociology and community development, natural resources and environmental issues conducted in consultation with a faculty member. Course may be repeated for a maximum of 3 credit hours.

**RSOC 5510 SOCIAL WELFARE, FAMILY AND POVERTY (3).** LEC. 3. Pr., SOCY 1000 or ECON 2020. Description for Bulletin: Measuring and explaining poverty inequality and their effects on families and society, analysis of anti-poverty programs.

**RSOC 5610 RURAL SOCIOLOGY (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. Theories and conceptual approaches to rurality in international and domestic contexts. Rural-urban differences in demographic composition, occupational structure, attitudes, and values of rural people and regional cultures. Rural services and institutions as determinants of the quality of life.

**RSOC 5640 SOCIOLOGY OF COMMUNITY DEVELOPMENT (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. Principles of applied social change at the community level in both industrialized and non-industrialized settings; impacts of economic and technological changes on urban and rural communities; citizen participation in community affairs.

**RSOC 5650 SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (3).** LEC. 3. The social origins of contemporary environmental problems, emergence of environmentalism as a social movement within industrialized nations, and other topical issues.

**RSOC 6510 SOCIAL WELFARE, FAMILY AND POVERTY (3).** LEC. 3. Pr., SOCY 1000 or ECON 2020. Description for Bulletin: Measuring and explaining poverty and inequality and their effects on families and society; analysis of anti-poverty programs.

**RSOC 6610 RURAL SOCIOLOGY (3).** LEC. 3. Theories and conceptual approaches to rurality in international and domestic contexts. Rural-urban differences in demographic composition, occupational structure, attitudes and values of rural people and regional cultures. Rural services and institutions as determinants of the quality of life.

**RSOC 6640 SOCIOLOGY OF COMMUNITY DEVELOPMENT (3).** LEC. 3. Pr., SOCY 1000. Principles of applied social change at the community level in both industrialized and non-industrialized settings; impacts of economic and technological changes on urban and rural communities; and citizen participation in community affairs.

**RSOC 6650 SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (3).** LEC. 3. The social origins of contemporary environmental problems, emergence of environmentalism as a social movement within industrialized nations, and other topical issues.

**RSOC 7410 EXTENSION PROGRAMS AND METHODS (3).** LEC. 3. Principles and models of applied social change in U.S. and developing nations. The Cooperative Extension Service is analyzed as an educational institution. Fundamental steps in program development and evaluation.

**RSOC 7620 SOCIOLOGY OF COMMUNITY (3).** LEC. 3. Emphasis on theories, conceptual approaches and methods for studying communities and assessing developmental needs with attention to organizational structure, power structure, decision-making and linkage networks to societal units.

**RSOC 7630 POLITICAL ECONOMY OF DEVELOPMENT (3).** LEC. 3. Theories of societal development applied to contemporary issues associated with change in non-industrialized nations. Exploration of institutional, class, and state interests that guide development processes, as well as alternative participatory development strategies.

**RSOC 7650 SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (3).** LEC. 3. The social origins of contemporary environmental problems, emergence of environmentalism as a social movement within industrialized nations, and other topical issues.

**RSOC 7700 METHODS OF SOCIAL RESEARCH (3).** LEC. 3. Pr., SOCY 3700. Problem identification, hypothesis development and empirical analysis. Quantitative and qualitative procedures for obtaining social data using surveys, direct observation and secondary sources.

**RSOC 7960 SPECIAL PROBLEMS IN RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT (1-3).** LEC. Pr., departmental approval. Investigation of a problem in a particular area of interest involving an in-depth review of the literature, a research project, or an outreach education activity. Course may be repeated for a maximum of 6 credit hours.

**RSOC 7970 SPECIAL TOPICS IN RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT (3).** LEC. 3. Departmental approval. New topic in the area of rural sociology and community development.

**RSOC 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

## AGRICULTURE (AGRI)

**AGRI 1000 INTRODUCTION TO AGRICULTURE (2).** LEC. 1, LAB. 2. Provide information about the College of Agriculture and Alabama Agriculture. An emphasis will be placed on learning about the different departments in the college.

**AGRI 1080 AGRICULTURAL COMMUNICATIONS (3).** LEC. 3. Introduction to agricultural communications and professional development as applied to the ag sector; overviews of common communication methods and possible careers. Departmental approval.

**AGRI 3800 AGRICULTURAL LEADERSHIP DEVELOPMENT (2).** LEC. 1, LAB. 2. Programmed sessions and activities designed to enhance self-awareness of leadership skills and enable students to become effective leaders.

**AGRI 4000 AGRICULTURE STUDY ABROAD (1-10).** AAB/FLD. Study abroad programs with emphasis on agricultural topics. Credit awarded in consultation with departmental chair. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**AGRI 4920 INTERNSHIP IN AGRICULTURAL COMMUNICATION AND LEADERSHIP (1-3).** INT. Supervised, closely monitored work experience in agricultural communications or leadership. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**AGRI 4970 SPECIAL TOPICS IN AGRICULTURAL COMMUNICATION AND LEADERSHIP (1-3).** LEC. Directed study in agricultural communications or leadership. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**AGRI 5840 ADVANCED AGRICULTURAL LEADERSHIP DEVELOPMENT (3).** LEC. 2, LAB. 2. Pr., AGRI 3800. Critical analysis of theory and practice of contemporary leadership processes and principles of learning to lead through service.

**AGRI 6840 ADVANCED AGRICULTURAL LEADERSHIP DEVELOPMENT (3).** LEC. 2, LAB. 2. Critical analysis of theory and practice of contemporary leadership processes and principles of learning to lead through service.

## Agronomy and Soils (AGRN)

Dr. Joseph Touchton - 844-4100

**AGRN 1000/1003/1004 BASIC CROP SCIENCE (4).** LEC. 3, LAB. 2. Agronomic principles of classification, growth, structure, and soil-plant relationship of field crops, with emphasis on influence of man and environment, and importance of crop production. Credit will not be given for both AGRN 1000 and AGRN 1003/1004.

**AGRN 2040/2043/2044 BASIC SOIL SCIENCE (4).** LEC. 3, LAB. 2. Pr., (CHEM 1010 and CHEM 1011) or (CHEM 1030 and CHEM 1031). Formation, classification, properties, management, fertility and conservation of soils in relation to the growth of plants. Fall, Spring.

**AGRN 2910 TURFGRASSES: USES AND CARE FOR SPORTS AND LEISURE (2).** LEC. 2. Introduction to the commonly used turfgrasses of the southeastern United States including of these turfgrasses for golf courses, athletic fields and home lawns will be included. This course may not be substituted for AGRN 3150.

**AGRN 3100 SOILS IN AGRICULTURAL AND EARTH SYSTEMS (4).** LEC. 3, LAB. 2. Pr., GEOL 1100 and CHEM 1010. The role of the soils as key components in changing earth and agricultural systems. Intended for those who will teach earth science at the middle school level. Credit will not be given for AGRN 3100 and either AGRN 2040 or AGRN 3040. Spring, Summer, Fall.

**AGRN 3120 PRINCIPLES OF WEED SCIENCE (4).** LEC. 3, LAB. 2. Pr., BIOL 1020 and BIOL 3100 and AGRN 2040. Weed identification and biology, methods of weed management and classification of herbicides and how they are used in weed control. Laboratory subjects are weed identification and sprayer calibration. Fall.

**AGRN 3150/3153/3154 TURFGRASS MANAGEMENT (4).** LEC. 3, LAB. 2. Pr., AGRN 2040 and BIOL 1020. The management of recreational and home area turf-grass will be studied including establishment and maintenance of turf and the effect of light, traffic, soil fertility and water on its growth. Fall, Spring.

**AGRN 3920 AGRONOMY AND SOILS INTERNSHIP (3).** INT. 3. Practical experience under the supervision of an approved employer and the department. Internship may be in the areas of production, business, turf or science. Departmental approval.

**AGRN 3960 SPECIAL PROBLEMS IN AGRONOMY AND SOILS (2).** LAB. 2. Departmental approval. Individual and group problems investigations in crop, soil or weed science. Course may be repeated for a maximum of 4 credit hours.

**AGRN 3970 SPECIAL TOPICS IN AGRONOMY AND SOILS (3).** LEC. 3. New topics in agronomy and soils.

**AGRN 4000 ADVANCED CROP SCIENCE (3).** LEC. 3. Pr., (AGRN 1000 or BIOL 1030) and AGRN 2040. Application and integration of principles from undergraduate agricultural, biological and physical sciences courses in the management of crop production systems.

**AGRN 4010 FORAGE PRODUCTION AND UTILIZATION (3).** LEC. 3. Grass and legume forage crops. The crops are considered from the standpoint of (a) pasture crops, (b) hay and silage crops, (c) soil-improving crops. Spring.

**AGRN 4200 SOIL JUDGING (2).** LEC. 1, LAB. 4. Description, evaluation and interpretation of soil-profile characteristics. Fall.

## *Agronomy and Soils (AGRN)*

**AGRN 4210 ADVANCED SOIL JUDGING (2).** LEC. 1, LAB. 2. Pr., AGRN 4200. Advanced description, evaluation, and interpretations of soil-profile characteristics. Spring.

**AGRN 4950 SENIOR SEMINAR (1).** SEM. Professional communication related to selected topics in agronomy and soils. Fall, Spring.

**AGRN 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**AGRN 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**AGRN 5000 SOILS ENVIRONMENTAL QUALITY (3).** LEC. 3. Pr., AGRN 2040. Role of soils in bio-geochemical cycling of major elements and compounds of environmental concern; interactions of pollutants with soils and aquatic and atmospheric environments; methods to minimize or correct pollution; risk assessment.

**AGRN 5020 NUTRIENT MANAGEMENT (3).** LEC. 3. Pr., AGRN 2040. Lectures and problems illustrate principles of nutrient management as related to soil or growth media, plant, fertilizer practices, management systems and environment. Required for all students majoring in Agronomy and Soils. Spring.

**AGRN 5060/5063 SOIL MICROBIOLOGY LECTURE (3).** LEC. 3. Pr., BIOL 3200. Ecology, physiology, and biochemistry of soil microorganisms with emphasis on soil microbial processes that are important to environmental quality and soil productivity. Spring.

**AGRN 5061 SOIL MICROBIOLOGY LABORATORY (1).** LAB. 1. Pr., AGRN 5053 or AGRN 6056. Laboratory exercises illustrating ecology, physiology, and biochemistry of soil microorganisms. Credit will not be given for both AGRN 5061 and AGRN 6061.

**AGRN 5080/5083 SOIL RESOURCES AND CONSERVATION (4).** LEC. 3, LAB. 2. Pr., AGRN 2040. Soils as a natural resource for land-use planning; their use and management for sustainable crop production, urban and industrial development and ecosystem protection. Fall.

**AGRN 5100/5103 PLANT GENETICS AND CROP IMPROVEMENT (3).** LEC. 3. Pr., BIOL 1030 or BIOL 1037. Principles related to mendelian, population, and molecular genetics of plants including inheritance of qualitative and quantitative traits, and plant transformation. Improvement of crop plants including heritability, role of environment, pedigree selection, recurrent selection, the backcross method, and marker-assisted selection. Fall

**AGRN 5150 SOIL MORPHOLOGY (4).** LEC. 3, LAB. 2. Pr., AGRN 2040. Physical, chemical and mineralogical properties of soils are studied in relation to their distribution and classification for environmental, engineering and agricultural use and interpretations. Spring.

**AGRN 5160 ADVANCED TURFGRASS MANAGEMENT (3).** LEC. 3. Pr., AGRN 3150. Factors affecting the turfgrass plant as a component of a dynamic community. Influence of soil chemical and physical conditions, management practices and climate are discussed. Theoretical and practical aspects of turfgrass management practices are discussed along with design and construction of golf courses and other athletic purpose turf areas.

**AGRN 5200 APPLIED WEED SCIENCE TECHNOLOGY (3).** LEC. 3. SU. Pr., AGRN 3120. Advanced weed identification, pesticide application technology, identification of herbicide injury symptomology, and develop of interaction techniques and problem solving skills for dealing with potential herbicide efficacy problems. Course may be repeated for a maximum of 6 credit hours.

**AGRN 5300/5303 SOIL CHEMISTRY (4).** LEC. 3, LAB. 2. Pr., AGRN 2040. An introduction to the basic soil chemical properties of mineral composition, weathering, absorption, cation exchange, acidity, alkalinity, salinity and soil reactions with fertilizers, pesticides and heavy metals. Spring.

**AGRN 5400/5403 BIOENERGY AND THE ENVIRONMENT (3).** LEC. 3. The role of bioenergy in reducing environmental problems related to use of fossil fuels and certain agricultural practices, and in addressing declining rural economies.

**AGRN 5590 ENVIRONMENTAL SOIL PHYSICS (4).** LEC. 3, LAB. 2. This course is designed to make the students understand basic soil physical properties and processes occurring in soils. All concepts are based on sound physical and mathematical principles. May count either AGRN 5590 or AGRN 6590.

**AGRN 5960 SPECIAL PROBLEMS (1-3).** IND. Work under the direction of a staff member on special problems in crop, soil or weed science. Course may be repeated for a maximum of 6 credit hours.

**AGRN 5970 ADVANCED SPECIAL PROBLEMS AGRONOMY AND SOILS (1-3).** IND. Departmental approval. Work under the direction of faculty on special problems in crop, soil or weed science, including results of agronomic research from the substations and experiment fields. Course may be repeated for a maximum of 6 credit hours.

**AGRN 6000 SOILS AND ENVIRONMENTAL QUALITY (3).** LEC. 3. Pr., AGRN 2040. Role of soils in bio-geochemical cycling of major elements and compounds of environmental concern; interactions of pollutants with soils and aquatic and atmospheric environments; methods to minimize or correct pollution; risk assessment.

**AGRN 6020 NUTRIENT MANAGEMENT (3).** LEC. 3. Pr., AGRN 2040. Lectures and problems illustrate principles of nutrient management as related to soil or

growth media, plant, fertilizer practices, management systems and environment. Required for all students majoring in Agronomy and Soils. Spring.

**AGRN 6060/6066 SOIL MICROBIOLOGY (3).** LEC. 3. Pr., BIOL 3200. Ecology, physiology, and biochemistry of soil microorganisms with emphasis on soil microbial processes that are important to environmental quality and soil productivity. Spring.

**AGRN 6061 SOIL MICROBIOLOGY LABORATORY (1).** LAB. 1. Pr., AGRN 5053 or AGRN 6053. Laboratory exercises illustrating ecology, physiology, and biochemistry of soil microorganisms. Credit will not be given for both AGRN 5061 and AGRN 6061.

**AGRN 6080/6086 SOIL RESOURCES AND CONSERVATION (4).** LEC. 3, LAB. 2. Pr., AGRN 2040. Soils as a natural resource for land-use planning; their use and management for sustainable crop production, urban and industrial development and ecosystem protection. Fall.

**AGRN 6100/6106 PLANT GENETICS AND CROP IMPROVEMENT (3).** LEC. 3. Pr., BIOL 1030. Principles related to mendelian, population, and molecular genetics of plants including inheritance of qualitative and quantitative traits, and plant transformation. Improvement of crop plants including heritability, role of environment, pedigree selection, recurrent selection, the backcross method, and marker-assisted selection. Fall.

**AGRN 6150 SOIL MORPHOLOGY (4).** LEC. 3, LAB. 2. Pr., AGRN 2040. Physical, chemical and mineralogical properties of soils are studied in relation to their distribution and classification for environmental, engineering and agricultural use and interpretations. Spring.

**AGRN 6160 ADVANCED TURFGRASS MANAGEMENT (3).** LEC. 3. Pr., AGRN 3150 and (BIOL 3100 or BIOL 6130). Factors affecting the turfgrass plant as a component of a dynamic community. Influence of soil chemical and physical conditions, management practices and climate are discussed. Theoretical and practical aspects of turfgrass management practices are discussed along with design and construction of golf courses and other athletic purpose turf areas. Spring.

**AGRN 6200 APPLIED WEED SCIENCE TECHNOLOGY (3).** LEC. 3. SU. Pr., AGRN 3120. Advanced weed identification, pesticide application technology, identification of herbicide injury symptomology, and develop of interaction techniques and problem solving skills for dealing with potential herbicide efficacy problems. Course may be repeated for a maximum of 6 credit hours.

**AGRN 6300 SOIL CHEMISTRY (4).** LEC. 2, LAB. 4. Pr., AGRN 2040. An introduction to the basic soil chemical properties of mineral composition, weathering, absorption, cation exchange, acidity, alkalinity, salinity and soil reactions with fertilizers, pesticides and heavy metals. Spring.

**AGRN 6400/6406 BIOENERGY AND THE ENVIRONMENT (3).** LEC. 3. The role of bioenergy in reducing environmental problems related to use of fossil fuels and certain agricultural practices, and in addressing declining rural economies.

**AGRN 6590 ENVIRONMENTAL SOIL PHYSICS (4).** LEC. 3, LAB. 2. This course is designed to make the students understand basic soil physical properties and processes occurring in soils. All concepts are based on sound physical and mathematical principles. May count either AGRN 5590 or AGRN 6590.

**AGRN 6960 SPECIAL PROBLEMS (1-3).** IND. Conferences, problems and assigned reading in soils and crops, including results of agronomic research from the substations and experiment fields. Course may be repeated for a maximum of 6 credit hours.

**AGRN 6970 ADVANCED SPECIAL PROBLEMS AGRONOMY AND SOILS (1-3).** IND. Departmental approval. Work under the direction of faculty on special problems in crop, soil or weed science, including results of agronomic research from the substations and experiment fields. Course may be repeated for a maximum of 6 credit hours.

**AGRN 7080/7086 EXPERIMENTAL METHODS (3).** LEC. 3. Pr., STAT 7000. Experimentation in the agricultural sciences including experimental techniques, interpretation of research data, use of library references, and preparation of publications. Problems, assigned readings and lectures. Summer.

**AGRN 7120 CYTOLOGY AND CYTOGENETICS (4).** LEC. 2, LAB. 4. Pr., BIOL 3000. Cell structure and function with emphasis on cell reproduction and factors contributing to the evolution of organisms. Fall.

**AGRN 7140 CHEMISTRY AND USE OF HERBICIDES IN CROP PRODUCTION (4).** LEC. 3, LAB. 2. Pr., CHEM 1040. Principles and use of herbicides in agronomic crops. Methods of herbicide application, including time, incorporation and formulation, the fate of herbicides in soil and the ecological impact on succeeding plant species. Fall.

**AGRN 7150 SEMINAR IN GENETICS (1).** SEM. 1. Pr., BIOL 3000. Reports by students and staff members on current research and literature in the field of genetics. Spring.

**AGRN 7160 GENETIC DATA ANALYSIS (3).** LEC. 3. Pr., (AGRN 5100 or AGRN 6100) and STAT 4020. Introduces procedures to study the genetic characteristics of individuals and populations. Computer models will be used to simulate genomes and traits. Application of quantitative methods to experimental populations used to plan breeding programs. Fall.



## Animal Sciences (ANSC)

**AGRN 7170 ADVANCED PLANT BREEDING (3).** LEC. 3. Pr., AGRN 7160. Estimation and interpretation of genetic variance components, heritability, selection response, yield stability indices and their effect on choice of breeding method. Recurrent selection theory and breeding for resistance to plant stresses.

**AGRN 7180 CROP ECOLOGY (3).** LEC. 3. Pr., (BIOL 6130 or AGRN 7250) and AGRN 2040. Analysis of structure and function of crop and pasture farming systems with emphasis on production processes and resource management.

**AGRN 7190 ADVANCED FORAGE MANAGEMENT AND RESEARCH METHODS (3).** LEC. 3. Principles involved in successful establishment, maintenance and management of crops used for grazing, hay and silage, and research methods related to this field. Field trips will be made to research stations and private farms to observe management practices. Spring.

**AGRN 7250 CROP PHYSIOLOGY (3).** LEC. 3. Pr., BIOL 3100. Integrates principles of plant physiology, biochemistry, ecology, and genetics as they relate to plant growth and development and crop yield. The effect of management practices and abiotic stress on plant growth and development will be discussed.

**AGRN 7540 PRINCIPLES OF PLANT NUTRITION (3).** LEC. 3. Pr., AGRN 6020. Processes of nutrient flux to plant roots growing in soil. Chemistry and properties of soil in relation to the nutrition and growth of plants. Summer.

**AGRN 7550 SOIL AND PLANT ANALYSIS (4).** LEC. 1, LAB. 6. Pr., CHEM 3050 and AGRN 6020. Principles, methods and techniques of quantitative chemical analysis of soils and plants applicable to soil science. Fall.

**AGRN 7560 CLAY MINERALOGY (4).** LEC. 3, LAB. 2. Crystal structure and properties of the important clay-size minerals of soils and clay deposits combined with identification techniques involving x-ray diffraction and spectroscopy, differential thermal analysis, electron microscopy, specific surface analysis, and infrared absorption.

**AGRN 7950/7956 SEMINAR (1).** SEM. 1. SU. Required of all graduate students in Agronomy and Soils. Course may be repeated for a maximum of 2 credit hours. Fall, Spring. Course may be repeated for a maximum of 2 credit hours.

**AGRN 7990/7996 RESEARCH AND THESIS (1-10).** MST. Research and thesis on problems in the soil and crop sciences. Course may be repeated with change in topic.

**AGRN 8570 PHYSICAL SOIL CHEMISTRY (3).** LEC. 3. Pr., CHEM 6070 and AGRN 6300. Interpretation of soil properties and chemical reactions in terms of ion exchange, solubility diagrams, solutions equilibria, electrochemistry and electrokinetics of charged particles. Fall.

**AGRN 8580 ADVANCED SOIL PHYSICS (3).** LEC. 3. Pr., MATH 1720 and (PHYS 1600 or PHYS 1607) and AGRN 7590. Transport phenomena in soils. Physical principles and analysis of the storage and movement of water, solutes, heat, and gases in soils. Spring.

**AGRN 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Research and dissertation on problems in the soil and crop sciences. Course may be repeated with change in topic.

### Aerospace Studies (AIRF)

Col. Scott E. Lewis - 844-4355

**AIRF 1010 THE FOUNDATIONS OF US AIR FORCE (1).** LEC. 1. Introduction to the US Air Force and Air Force ROTC.

**AIRF 1011 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 1020 THE FOUNDATIONS OF US AIR FORCE (1).** LEC. 1. Introduction to the US Air Force and Air Force ROTC.

**AIRF 1021 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Coreq., AIRF 1020. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 2010 EVOLUTION OF US AIR AND SPACE POWER (1).** LEC. 1. Air and space power history, doctrine, capabilities and functions.

**AIRF 2011 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Coreq., AIRF 2010. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 2020 EVOLUTION OF US AIR AND SPACE POWER (1).** LEC. 1. Air and space power history, doctrine, capabilities and functions.

**AIRF 2021 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 3010 AIR FORCE LEADERSHIP STUDIES (3).** LEC. 3. Pr., AIRF 2020. Coreq., AIRF 3011. Advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and supervision concepts. Departmental approval.

**AIRF 3011 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 3020 AIR FORCE LEADERSHIP STUDIES (3).** LEC. 3. Pr., AIRF 3010. Coreq., AIRF 3021. Advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and supervision concepts. Departmental approval.

**AIRF 3021 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 4010 NATIONAL SECURITY AFFAIRS AND PREPARATION FOR ACTIVE DUTY (3).** LEC. 3. Pr., AIRF 3020. For AFROTC senior cadets. The role of military officers in American society. Departmental approval.

**AIRF 4011 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

**AIRF 4020 NATIONAL SECURITY AFFAIRS AND PREPARATION FOR ACTIVE DUTY (3).** LEC. 3. Pr., AIRF 4010. For AFROTC senior cadets. The roles of military officers in American society. Departmental approval.

**AIRF 4021 AFROTC LEADERSHIP LABORATORY (0).** LAB. 2. SU. Coreq., AIRF 4020. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

### Animal Sciences (ANSC)

Dr. Wayne Greene - 844-1523

**ANSC 1000 INTRODUCTION TO ANIMAL SCIENCES (4).** LEC. 3, LAB. 2. The importance of livestock to agriculture and to the health and nutrition of a modern society. Livestock terminology, selection, reproduction, nutrition, management, marketing, and species characteristics of beef and dairy cattle, swine, sheep and horses.

**ANSC 1100 ORIENTATION TO ANIMAL SCIENCES (1).** LEC. 1. SU. An introduction to the departmental programs and personnel and how to make the most of the college experience. Breadth of career opportunities for animal science graduates.

**ANSC 2000 COMPANION ANIMAL MANAGEMENT (3).** LEC. 3. Practical aspects of behavior, nutrition, breeding, reproduction, health and management of dogs, cats and other animals generally considered to be human companions.

**ANSC 2010 ANIMALS AND SOCIETY (3).** LEC. 3. Ethical and scientific issues surrounding human-animal interactions and the role human-animal interactions play in modern society.

**ANSC 2050 INTRODUCTION TO HORSE MANAGEMENT AND TRAINING (3).** LEC. 1, LAB. 4. An introduction to the management, training, and enjoyment of horses.

**ANSC 2150 SKILLS AND CONCEPTS OF EQUESTRIAN SPORTS (1).** LAB. 4. Basic management and care of animals used in intercollegiate equestrian and rodeo sports. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

**ANSC 2650 EQUINE BIOMECHANICS AND SHOERING (2).** LAB. 4. Pr., ANSC 1000 and BIOL 2500. Anatomy, function and care of the horse foot; mechanical forces and joint/tissues health; hoof traits, quality and correction through shoeing.

**ANSC 2700 VALUE-BASED ANALYSIS OF MEAT ANIMALS (2).** LAB. 4. Pr., ANSC 1000. Comparative evaluation of body composition and application of federal grading standards to determine relative value and price of live animals, carcasses, and wholesale cuts.

**ANSC 2710 COMMERCIAL MEAT MANAGEMENT (4).** LEC. 3, LAB. 2. The importance of meat in the food service industry, including food safety, purchasing, cooking and meat in the diet. For non-majors only.

**ANSC 2910 PRACTICUM IN LIVESTOCK WELFARE AND MANAGEMENT (2).** LAB. 6. Pr., ANSC 1000. Hands-on laboratory teaching applied management of livestock species, including horses, cattle, swine and small ruminants, using modern equipment and techniques. Departmental approval.

**ANSC 3000 HERD HEALTH MANAGEMENT (3).** LEC. 3. Pr., ANSC 1000 and BIOL 3200. The prevention and control of the major diseases of farm animals and the development of herd health programs.

**ANSC 3150 EQUINE MARKETING (2).** LAB. 4. Pr., ANSC 1000 and (ECON 2020 or ECON 2027). Practical concepts of equine marketing including evaluating the horse, assessing the market, targeting customers, and presenting the horse.

**ANSC 3300 INTRODUCTORY LIVESTOCK EVALUATION AND MARKETING (2).** LAB. 6. Pr., ANSC 1000. Comprehensive study of live animal and carcass evaluation techniques used in the selection and marketing of beef cattle, swine and sheep. The development of decision-making oral communication skills is emphasized.

**ANSC 3310 INTRODUCTION TO MEAT SELECTION AND GRADING (2).** LAB. 6. Pr., ANSC 1000. Development of grading standards and application of federal grades to beef, pork and lamb carcasses. Comparative evaluation of carcasses, primal, and sub-primal cuts.

**ANSC 3330 INTRODUCTION TO DAIRY CATTLE JUDGING (2).** LAB. 6. Pr., ANSC 1000. Theory and practice in the selection of dairy cattle based on visual

## Animal Sciences (ANSC)

appraisal, pedigree, and performance records. The development and presentation of oral reasons also is emphasized.

**ANSC 3350 EQUESTRIAN COACHING (2).** LAB. 4. Principles and practices of instructing students on horseback, safety for horse and rider, lesson plans and class management, evaluation of riders, teaching riders with special needs.

**ANSC 3400 ANIMAL NUTRITION (4).** LEC. 3, LAB. 2. Pr., BCHE 3200 and BIOL 1030 or (BIOL 1037). Principles and practice of animal nutrition, nutrient contents of feedstuff, and diet formulation. Departmental approval.

**ANSC 3500 ANIMAL BREEDING (3).** LEC. 3. Pr., ANSC 1000 and (STAT 2510 or STAT 2513 or BIOL 3000). Genetic and environmental effects of animal differences. Selection and mating systems used in the improvement of domestic animals with an emphasis on livestock.

**ANSC 3600 REPRODUCTIVE PHYSIOLOGY (4).** LEC. 3, LAB. 2. Pr., ANSC 1000 and BIOL 2510 Comparative anatomy, physiology and endocrinology of animal reproduction; principles of reproductive biotechnologies used to enhance reproductive efficiency in mammalian systems.

**ANSC 3610 ANIMAL GROWTH AND DEVELOPMENT (4).** LEC. 3, LAB. 2. Pr., ANSC 1000 and (BIOL 1030 or BIOL 1037) Biology of prenatal and postnatal growth of meat animals, emphasizing muscle, adipose, and bone tissues from a molecular, cellular, endocrine perspective. Application of concepts to improve rate, efficiency, and composition of growth.

**ANSC 3650 PHYSIOLOGY OF EQUINE ATHLETE (2).** LEC. 2. Pr., ANSC 1000 and BCHE 3200 and BIOL 2510 Selection and development of the horse for athletic performance; exercising, training, and fitness conditioning for performance horses.

**ANSC 3700 MUSCLE FOODS (4).** LEC. 3, LAB. 2. Pr., ANSC 1000. Introduction to domestic animal growth and development, comparative evaluation of livestock and carcass composition. Biochemical and physiological factors affecting fresh meat and processed meat quality. Fundamentals of ante- and postmortem muscle biology, slaughter, processing, storage and merchandising of meat and meat products.

**ANSC 3800 CAREERS IN ANIMAL SCIENCE (1).** LEC. 1. SU. Career opportunities for animal science graduates. Identifying and investigating careers and presenting oneself professionally for employment or post-baccalaureate education.

**ANSC 3840 STUDY/TRAVEL IN ANIMAL SCIENCE (1-10).** AAB/FLD. Concentrated study in animal production and management, equine science and the meats industry within the US or international locations. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**ANSC 4000 MODERN LIVESTOCK SYSTEMS (4).** LEC. 3, LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Overview of beef, dairy, swine and small ruminant production systems. Modern concepts, ideas, and methodology associated with the application of technology to reproduction, breeding, health, nutrition, waste nutrient utilization, and management.

**ANSC 4030 DAIRY CATTLE PRODUCTION (4).** LEC. 3, LAB. 3. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics, and management for efficient dairy production.

**ANSC 4050 HORSE PRODUCTION (4).** LEC. 3, LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient horse production.

**ANSC 4070 SWINE PRODUCTION (4).** LEC. 3, LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Practical application and integration of nutrition, breeding, and genetics, herd health, reproduction, economics, housing and management techniques for efficient swine production.

**ANSC 4090 SHEEP PRODUCTION (4).** LEC. 3, LAB. 2. Pr., ANSC 1000. Application and integration of breeding and selection, nutrition, reproduction, health, and marketing to achieve optimum lamb and wool production in the south-eastern U. S.

**ANSC 4100 FARM ANIMAL BEHAVIOR (2).** LEC. 2. Pr., ANSC 3600. Basic information on behavior, its purpose, and measurement. Examination of eating, locomotive, sexual, aggressive, territorial, maternal, and resting behaviors in cattle, horses, swine, and sheep.

**ANSC 4150 ADVANCED SKILLS AND CONCEPTS OF EQUESTRIAN SPORTS (1).** LAB. 4. Pr., ANSC 2150. Principles and skills utilized in intercollegiate equestrian and rodeo team competition and management. Issues affecting management, training, marketing, and promotion of animals used in equestrian and rodeo sports. Course may be repeated for a maximum of 2 credit hours.

**ANSC 4300 ADVANCED LIVESTOCK JUDGING (1).** LAB. 4. Pr., ANSC 3300. Advanced course in principles and techniques of livestock selection based on visual criteria, performance records, and other advanced technologies. Course may be repeated for a maximum of 2 credit hours.

**ANSC 4310 ADVANCED MEAT JUDGING (1).** LAB. 4. Pr., ANSC 3310. Practice in evaluation and grading of beef, pork, and lamb carcasses and cuts. Development of communication skills and exposure to animal agriculture through training and intercollegiate competition. Course may be repeated for a maximum of 2 credit hours.

**ANSC 4320 ADVANCED ANIMAL EVALUATION AND MARKETING (1).** LAB. 4. Pr., ANSC 4300 or ANSC 4310. Live animal and carcass evaluation techniques used in marketing cattle, swine, and sheep.

**ANSC 4330 ADVANCED DAIRY CATTLE JUDGING (1).** LAB. 4. Pr., ANSC 3330. Advanced course in the selection of dairy cattle and presentation of oral reasons. Course may be repeated for a maximum of 2 credit hours.

**ANSC 4450 EQUINE NUTRITION (2).** LEC. 2. Pr., ANSC 3400. Principles of digestive physiology, nutrition, and metabolic disorders unique to the horse with special emphasis on nutritional needs of the equine athlete.

**ANSC 4650 EQUINE REPRODUCTIVE TECHNIQUES (2).** LAB. 4. Pr., ANSC 3600. Reproductive management and application of modern technologies to enhance reproductive efficiency of the domestic horse.

**ANSC 4700 MEAT PROCESSING (4).** LEC. 3, LAB. 3. Pr., ANSC 3700. Integration of topics in meat and non-meat ingredient chemistry and their applications to muscle food processing. Physical, chemical, and sensory properties of fresh and processed meat products.

**ANSC 4800 ISSUES IN ANIMAL AGRICULTURE (2).** LAB. 4. Pr., COMM 1000. Issues affecting animal agriculture, dealing with concerns of consumers and activists, involvement in public debate, and the political process.

**ANSC 4810 PROFESSIONAL DISCOURSE IN AGRICULTURE (1).** LAB. 2. Pr., COMM 1000. Methods for enhancing effective discourse concerning issues facing the livestock industry.

**ANSC 4920 INTERNSHIP IN ANIMAL SCIENCES (5-15).** INT. SU. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

**ANSC 4960 SPECIAL PROBLEMS (1-5).** IND. Students will work under the direction of staff members on specific problems. Course may be repeated for a maximum of 15 credit hours. Departmental approval.

**ANSC 4967 HONORS SPECIAL PROBLEMS (3-6).** IND. Pr., Honors College. Course may be repeated for a maximum of 6 credit hours. Departmental approval.

**ANSC 4970 SPECIAL TOPICS IN ANIMAL SCIENCES (1-4).** IND. Instruction and discussion of selected current topics in Animal Sciences. Course may be repeated for a maximum of 4 credit hours.

**ANSC 4997 HONORS THESIS (3-6).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ANSC 5010 BEEF PRODUCTION (4).** LEC. 3, LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Overview of the beef cattle industry. Modern concepts, ideas and methodology associated with the application of technology to reproduction, breeding, nutrition, management and the use of facilities in a modern beef cattle enterprise.

**ANSC 5730 SENSORY EVALUATION (3).** LEC. 2, LAB. 2. Pr., STAT 2510. History and methods of sensory testing of food products, factors affecting results. May count only one of the following: ANSC 5730, ANSC, 6730, POUL 5730, POUL 6730.

**ANSC 6010 STOCKER CATTLE PRODUCTION (4).** LEC. 3, LAB. 4. Application of the principles of animal science to the successful production of stocker cattle. Emphasis placed on marketing and management strategies. Lab will involve a considerable amount of traveling.

**ANSC 6730 SENSORY EVALUATION (3).** LEC. 2, LAB. 2. Pr., STAT 2510. History and methods of sensory testing of food products, factors affecting results. May count only one of the following: ANSC 5730, ANSC, 6730, POUL 5730, POUL 6730.

**ANSC 7400 RUMINANT NUTRITION (3).** LEC. 3. Pr., BCHE 7210. Digestive physiology, mechanisms of rumen fermentation, postprandial nutritional biochemistry.

**ANSC 7410 NONRUMINANT NUTRITION (3).** LEC. 3. Digestion, absorption, and utilization of macro and micro nutrients, nutrient interrelationship in swine and other non-ruminant species. Departmental approval.

**ANSC 7420 NUTRITIONAL TOXICOLOGY (3).** LEC. 3. General principles of nutrition and toxicology applied toward understanding and managing livestock responses to toxicants in feeds and plants.

**ANSC 7500 EXPERIMENTAL METHODS (3).** LEC. 3. Pr., STAT 7010. Research methods used in the animal sciences for the analysis and interpretation of data. Included are experimental designs and computing techniques.

**ANSC 7510 QUANTITATIVE GENETICS (3).** LEC. 3. Pr., BIOL 3000 and STAT 7010. Principles of population genetics; gene frequency, biometric relationships between relatives, additive, dominance and epistatic effects, estimation and use of repeatability, heritability, genetic correlations, and breeding values. Departmental approval.

**ANSC 7600 PHYSIOLOGY OF REPRODUCTION (3).** LEC. 3. Pr., ANSC 3600 and BIOL 6240. Physiological, endocrinological, cellular, and molecular mechanisms regulating reproduction, with emphasis on mammalian systems.

**ANSC 7610 PHYSIOLOGY OF GROWTH (3).** LEC. 3. Pr., BCHE 7210. Molecular and cellular basis of tissue differentiation, growth and development with emphasis on muscle, adipose and connective tissues and factors influencing gene expression controlling such events.

**ANSC 7700 MUSCLE FOODS AND APPLIED MUSCLE BIOLOGY (4).** LEC. 3, LAB. 2. Pr., ANSC 3700 and BCHE 7210 Investigations of muscle microanatomy,

## Architecture (ARCH)

biochemistry of muscle proteins and lipids, biochemistry of skeletal muscle contraction, lipid/protein interactions, antemortem and postmortem factors affecting fresh and processed meat quality; discussion of classic and current scientific literature.

**ANSC 7950 SEMINAR (1).** LEC. 1. SU. An intensive study of selected topics in some facet of animal sciences.

**ANSC 7960 SPECIAL PROBLEMS (1-5).** LEC. Conference problems, assigned reading, literature searches in one or more of the following major fields; (a) biochemistry, (b) nutrition, (c) animal breeding, (d) reproductive physiology, (e) growth physiology, (f) muscle foods, (g) microbiology, and (h) behavior. Course may be repeated for a maximum of 15 credit hours.

**ANSC 7990 RESEARCH AND THESIS (1-15).** MST. Research and thesis may be on technical laboratory problems or on problems directly related to beef and dairy cattle, sheep, swine, or laboratory animals. Course may be repeated with change in topic.

**ANSC 8400 PROTEIN AND ENERGY METABOLISM (3).** LEC. 3. Pr., BCHE 7210. Nutritional biochemistry of protein and energy metabolism of mammalian, avian and aquatic species. Concepts of protein turnover, nutrient-gene interactions, control of bioenergetics, nutritional assessment, nutritional quality of nutrient sources.

**ANSC 8410 VITAMIN AND MINERAL METABOLISM (3).** LEC. 3. Vitamin and mineral nutrition with emphasis on chemical structures and characteristics, metabolic functions, deficiencies and toxicity syndromes, interrelationships and requirements of vitamins and minerals. Departmental approval.

**ANSC 8500 LINEAR MODEL APPLICATIONS IN ANIMAL BREEDING (4).** LEC. 4. Pr., ANSC 7510 and STAT 7010. Selection index and mixed linear model genetic theory for estimation and prediction. Equivalent animal models, properties of solutions, and extension of methods to consider genetic relationships, multiple records, culling bias and multiple trait evaluation. Current literature will also be discussed.

**ANSC 8610 MUSCLE PHYSIOLOGY AND BIOCHEMISTRY (3).** LEC. 3. Pr., BCHE 7210 and BIOL 6600. Heterogeneity and plasticity of muscle as a tissue, ontogeny, differentiation, growth and regulation of metabolic and molecular properties of muscle fibers by innervation, usage, hormones, and artificial modulation. Evaluation of current literature.

**ANSC 8990 DOCTORAL RESEARCH AND DISSERTATION (1-15).** DSR. Course may be repeated with change in topic.

### Architecture (ARCH)

Prof. Rusty Smith - 844-4582

**ARCH 1000 CAREERS IN DESIGN AND CONSTRUCTION (1).** LEC. 1, LST. 1. SU. Introduction to the environmental design and construction professions and the curricula in the chosen field.

**ARCH 1010 INTRODUCTION TO ARCHITECTURE DESIGN (5).** LEC. 1, LST. 12. SU. Principles of visual organization, research and design process skills, and the graphic communication of form and ideas.

**ARCH 1020 INTRODUCTION TO ARCHITECTURE DESIGN II (5).** LEC. 1, LST. 12. Pr., ARCH 1010 and ARCH 1000 and ARCH 1060 Principles of visual organization, research and design process skills, and the graphic communication of form and ideas.

**ARCH 1060 VISUAL COMMUNICATION (2).** LEC. 1, LEC/STU. 2. SU. Introduction to graphic communication. Focus on developing graphic skills for the purpose of explaining form and communicating ideas via exercises in drafting, sketching, and diagramming.

**ARCH 1420 INTRODUCTION TO DIGITAL MEDIA (2).** LEC. 1, LST. 2. Pr., ARCH 1060. Introduction to the principles of 2-D and 3-D digital media and how these principles are utilized in architectural design.

**ARCH 2010 STUDIO I (6).** LEC. 2, LST. 10. Pr., ARCH 1020 and ARCH 1420. Basic issues of architectural design centered around the thoughtful creation of exterior and interior space. Studies of light, material, texture, proportion, scale, and site are integrated into each project.

**ARCH 2020 STUDIO 2 (6).** LEC. 2, LST. 10. Pr., ARCH 2010. Fundamental design process skills including observation, analysis, and synthesis.

**ARCH 2110 ARCHITECTURAL HISTORY I: HISTORY OF THE BUILT ENVIRONMENT (3).** LEC. 3. Pr., ARCH 1020. Examination of the social determinants that shape the public beliefs and practices that produce buildings.

**ARCH 2117 ARCH HIST I HIST OF BUILT ENV (3).** LEC. 3. Pr., Honors College. ARCH 1010 Examination of the social determinants that shape the public beliefs and practices that produce buildings.

**ARCH 2210 ENVIRONMENTAL CONTROLS I (3).** LEC. 3. Pr., ARCH 1020. This course provides the basic knowledge and skills requisite an architect in the design of environmentally responsive buildings.

**ARCH 2220 ENVIRONMENTAL CONTROLS II (2).** LEC. 2. Pr., ARCH 1020. This course provides the basic knowledge and skills requisite an architect in the design of environmentally responsive buildings.

**ARCH 2600 THE ART OF ARCHITECTURE, PLACE, AND CULTURE (3).** LEC. 3. The interrelationship of art, architecture, place, and culture with emphasis on the

art of architecture from a global multicultural perspective. Illustrated lecture, readings, and essays.

**ARCH 3010 STUDIO 3 (6).** LEC. 2, LST. 10. Pr., ARCH 2020 and ARCH 3110. Builds on ARCH 2010 and 2020. The process of making architecture through critical inquiry and investigation. The physical, social, ethical contexts that inform the design of every building.

**ARCH 3020 STUDIO 4 (6).** LEC. 2, AAB/LST. 10. Pr., ARCH 3010 or ARIA 3020. Builds on ARCH 3010 and adds an emphasis on the integration of construction tectonics in the development of architectural form.

**ARCH 3110 ARCHITECTURAL HISTORY II: HISTORY OF EUROPEAN ARCHITECTURE TO 1800 (3).** LEC. 3. Pr., ARCH 2110. Introduction to key European buildings and towns from the Bronze Age to the Enlightenment. Examines how societal beliefs and practices influence the making of architecture.

**ARCH 3120 ARCHITECTURAL HISTORY III: 19TH CENTURY TO PRESENT (3).** LEC. 3. Pr., ARCH 3110. The history of architecture, 1850-present, with an emphasis on the rise of the modern movement in Europe and the U.S.

**ARCH 3320 MATERIALS AND METHODS OF CONSTRUCTION I (3).** LEC. 3. Pr., ARCH 1020. The properties and potential design function of materials used in contemporary construction, with an emphasis on foundation systems, wood, and masonry.

**ARCH 3410 DESSEIN ELECTIVES (3).** LEC. 3. Explorations in the art of representation. Complete descriptions of specific courses and their prerequisites are available from the School of Architecture. Course may be repeated for a maximum of 6 credit hours.

**ARCH 3500 SEMINAR IN METHODS AND PROCESSES (3).** LEC. 3. Pr., ARCH 2020. The tools and techniques available to the design professional including specific design specializations, and design methodologies. Descriptions of specific seminars are available from the School of Architecture. Course may be repeated with a change in topic.

**ARCH 3600 SEMINAR IN CONTEMPORARY ISSUES (3).** LEC. 3. Pr., ARCH 2020. Investigation of significant topics that present opportunities and constraints to architectural thought and practice. Course may be repeated with change in topic.

**ARCH 3700 SEMINAR IN HISTORY AND THEORY (3).** LEC. 3. Pr., ARCH 2010. Investigation of theories, schools or periods to examine the potential and limitations of architecture. Descriptions of specific seminars available from School of Architecture. Course may be repeated with change in topic.

**ARCH 3710 SEMINAR IN HISTORICAL PERSPECTIVES (3).** LEC. 3.

**ARCH 3800 SEMINAR IN ASPECTS OF DESIGN (3).** LEC. 3. Pr., ARCH 2020. Study of aspects of architectural design, such as form, space, style, meaning, perception, culture. Descriptions of specific seminars available from the School of Architecture. Course may be repeated with a change in topic.

**ARCH 4010 STUDIO 5 (6).** LEC. 2, LST. 10. Pr., ARCH 3010 or ARIA 3020 and BSCI 3400. The design of buildings, building complexes, and spaces in an urban context. Lectures emphasize urban issues, research methods. Programming and analysis will parallel studio projects of increasing complexity.

**ARCH 4020 STUDIO 6 (6).** LEC. 2, AAB/LST. 10. Pr., ARCH 4010 or ARIA 4020 and BSCI 3450 and CPLN 5000. Architectural design in the community. Includes the development of team-based design proposals. Based in the School's Birmingham Center. Lectures will focus on issues of urban planning and design.

**ARCH 4220 STUDIO 6: EUROPE TRAVEL STUDIO (6).** LEC. 6. Pr., ARCH 4010. First hand exposure to the canonical works of European architecture and urban design. The specific subjects of study and trip itinerary will vary slightly based on the objectives of the faculty leading the studio.

**ARCH 4320 MATERIALS AND METHODS OF CONSTRUCTION 2 (3).** LEC. 3. Pr., ARCH 3320. Properties and potential design applications of materials used in contemporary construction, with an emphasis on steel and concrete, roofing, glass and glazing, cladding, and interior finishes.

**ARCH 4500 PROFESSIONAL PRACTICE (3).** LEC. 3. Pr., ARCH 3020 or ARIA 3020. Architects' legal responsibilities, frameworks of professional practice, office organization, business planning, marketing, project delivery, internship and professional ethics and leadership.

**ARCH 4900 DIRECTED STUDIES (1-6).** AAB. Development of an area of special interest through independent study. May be a group or individual effort under direction of the faculty and with prior approval of the School Head. Evaluation of the work may be by faculty jury. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ARCH 4910 RURAL STUDIO COMPLETION (0).** LEC. Completion of construction project for ARCH 4120 Elective Studio. This studio is based in the School's remote facilities in Newbern, AL.

**ARCH 4960 SPECIAL PROBLEMS (1-6).** LEC. 4900 Course may be repeated for a maximum of 6 credit hours.

**ARCH 4997 HONORS THESIS (1-6).** LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ARCH 5010 STUDIO 7 (6).** LEC. 2, LST. 10. Pr., ARCH 4020 or ARIA 4020. Advanced problem-solving in the synthesis of previous design experiences.

## Architecture (ARCH)

Development of a comprehensive design project from programming to construction documents.

**ARCH 5020 THESIS STUDIO (7).** LEC. 3, LST. 10. Pr., ARCH 5010 and ARCH 5990. Exploration and development of an architectural thesis project of the student's choice under the direction of a faculty member.

**ARCH 5100 TEACHING METHODS (1).** LEC. 1.

**ARCH 5240 BEING THERE (1).** LEC. 1.

**ARCH 5340 METHODS IN COMMUNITY BASED LEARNING (3).** LEC. 3.

**ARCH 5990 INTRODUCTION TO THESIS RESEARCH (2).** LEC. 2. The tools, techniques, and strategies required to select, develop, refine, write, and present a thesis argument.

**ARCH 5991 THESIS RESEARCH (1).** LEC. 1. Pr., ARCH 5990. Expansion on the individual thesis argument and research begun in ARCH 5990 in parallel with the development of their thesis design project in ARCH 5020.

### INTERIOR ARCHITECTURE (ARIA)

Prof. Christian Dagg - 844-4519

**ARIA 2150 ELEMENTS OF INTERIOR ARCH I (3).** LEC. 3. Pr., ARCH 2020. The theory of design principles, aesthetics and concepts. Graphic drawings and models of interior spaces explored. Projects outside of class.

**ARIA 2160 ELEMENTS OF INTERIOR ARCHITECTURE II (3).** LEC. 3. The theory of design principles, aesthetics and concepts. Graphic drawings and models of interior spaces explored. Projects outside of class.

**ARIA 3020 STUDIO 4A INTERIOR ARCHITECTURE (6).** LEC. 2, LST. 10. Pr., ARCH 2020. Parallels Architecture Studio 4, but with an emphasis on interior architecture with exploration of detail and accommodation.

**ARIA 4020 STUDIO 6A INTERIOR ARCHITECTURE (6).** LEC. 2, LST. 10. Pr., ARCH 3020 and ARCH 3320. and ARCH 2110 and BSCI 3400 Parallels Architecture Studio 6, with emphasis on the development of interior architecture and spaces within an urban context. Consideration will be given to adaptive reuse.

**ARIA 4030 INTERIOR ARCHITECTURE THESIS (6).** LEC. 3, LST. 10. Pr., ARCH 4020. Coreq., ARIA 4080. Interior design project of the student's choice, under the direction of a faculty member.

**ARIA 4080 INTERIOR ARCHITECTURE THESIS RESEARCH (2).** LEC. 2. Pr., ARCH 4020. Research and writing of thesis documents, to include programming, site, and case studies.

**ARIA 4450 INTERIOR ARCHITECTURE PROFESSIONAL PRACTICE (2).** LEC. 2. Pr., ARCH 4020. Prepares student to enter professional office with an understanding of the skills, concepts and technical knowledge expected.

**ARIA 4680 HISTORY AND THEORY OF INTERIOR ARCHITECTURE (3).** LEC. 3. Pr., ARCH 4020. The theory and history of interior spaces, their social, material, and aesthetic development and their artifacts.

### COMMUNITY PLANNING (CPLN)

Dr. John Pittari, Jr. - 844-5424

**CPLN 5000 HISTORY AND THEORY OF URBAN FORM (3).** LEC. 3. The vocabulary and historical development of urban design, focusing on the environmental and cultural forces that design, shape, build, and redevelop the urban fabric.

**CPLN 5020 DEATH AND LIFE OF GREAT AMERICAN CITIES (3).** LEC. 3. Global, economic, technical, and social change influences on the evolution or cities and planners responses. Use of computer simulation to create ideal cities.

**CPLN 5100 URBAN DESIGN METHODS (3).** LEC. 3. Techniques and methodologies in urban design problem solving and strategies for implementation. Departmental approval.

**CPLN 5300 REAL PROPERTY DEVELOPMENT (3).** LEC. 3. Survey and analysis of the financial, legal, administrative, planning and design factors influencing the process of land development from the perspectives of developers, planners and consumers.

**CPLN 5400 PRESERVATION PLANNING (3).** LEC. 3. Planning for the preservation, restoration, conservation, adaptive reuse of historic buildings, sites and districts within the comprehensive planning process.

**CPLN 5500 ENVIRONMENTAL PLANNING (3).** LEC. 3. Traditional and emerging methods and policy for environmental planning. Departmental approval.

**CPLN 5520 REAL ESTATE DEVELOPMENT STUDIO (6).** LEC. 6. Application of knowledge of real estate development gained in earlier coursework. Real Property Analysis; studio work and development of feasibility for actual site. Departmental approval.

**CPLN 5970 SPECIAL TOPICS IN PLANNING (1-3).** AAB. Study of a substantive area related to community planning in a seminar setting. Course may be repeated for a maximum of 9 credit hours.

**CPLN 6000 HISTORY AND THEORY OF URBAN FORM (3).** LEC. 3. The vocabulary and historical development of urban design, focusing on the environmental and cultural forces that design, shape, build, and redevelop the urban fabric.

**CPLN 6020 DEATH AND LIFE OF GREAT AMERICAN CITIES (3).** LEC. 3. Global, economic, technical, and social change influences the evolution or cities and planners responses. Use of computer simulation to create ideal cities.

**CPLN 6100 URBAN DESIGN METHODS (3).** LEC. 3. Techniques and methodologies in urban design problem- solving and strategies for implementation.

**CPLN 6300 REAL PROPERTY DEVELOPMENT (3).** LEC. 3. Survey and analysis of the financial, legal, administrative planning and design factors influencing the process of land development from the perspectives of developers, planners and consumers.

**CPLN 6400 PRESERVATION PLANNING (3).** LEC. 3. Planning for the preservation, restoration, conservation and adaptive reuse of historic buildings, sites and districts within the comprehensive planning process.

**CPLN 6500 ENVIRONMENTAL PLANNING (3).** LEC. 3. Traditional and emerging methods and policy for environmental planning.

**CPLN 6520 REAL ESTATE DEVELOPMENT STUDIO (6).** LEC. 6. Application of knowledge of real estate development gained in earlier coursework. Real Property Analysis; studio work and development of feasibility for actual site.

**CPLN 6970 SPECIAL TOPICS IN PLANNING (1-3).** LEC. Study of a substantive area related to community planning in a seminar setting. Course may be repeated for a maximum of 9 credit hours.

**CPLN 7200 URBAN DESIGN STUDIO (6).** STU. 12. Conceptual issues in urban design are explored, with an emphasis on the interpretation and representation of urban form; projects provide experience in both the making and the critical understanding of design actions within the community.

**CPLN 7240 QUANTITATIVE METHODS FOR PLANNING (3).** LEC. 3. Development of working knowledge of planning techniques such as data collection, basic statistics, demographic analysis, economic analysis, social research, transportation, and evaluation.

**CPLN 7400 COMMUNITY PLANNING STUDIO (6).** STU. 12. Application of the comprehensive planning process to assist a client in the solution of a community planning problem, under faculty direction in cooperation with other professionals.

**CPLN 7430 PLANNING, LAW, ETHICS & IMPLEMENTATION (3).** LEC. 3. This course covers three key elements of the planning profession: ethics, law and plan implementation.

**CPLN 7440 PLANNING THEORY (3).** LEC. 3. Historical development of communities with emphasis on the interaction of their dynamic and structural elements; impact of the planning process and planners on public and private decision-making; ethics and professional responsibility of planners.

**CPLN 7450 PLANNING HISTORY (3).** LEC. 3. This course will address the historical development of American urban planning as it has evolved primarily since mid-nineteenth century.

**CPLN 7460 DIGITAL APPLICATIONS FOR PLANNING, DEVELOPMENT AND DESIGN (3).** LEC. 3. Basic concepts and range of applications of geographic information systems in land use planning, development, and local government. Emphasis on the use of information for spatial decision-making in the areas of service delivery, management and policy-planning.

**CPLN 7500 PLANNING WORKSHOP (3).** LEC. 3. Necessary practical tools for planners, with emphasis on process, practice, and public involvement.

**CPLN 7600 SYNTHESIS STUDIO I (6).** STU. 12. Pr., CPLN 7400. Coreq., CPLN 7620. Demonstration of competence in community planning and design through the production of an original, comprehensive project that integrates knowledge and experience in addressing a complex planning and design problem. Departmental approval.

**CPLN 7620 RESEARCH METHODS (3).** LEC. 3. The tools for conducting research that are essential for the development of a comprehensive community planning and design synthesis project. Departmental approval.

**CPLN 7800 SYNTHESIS PROJECT (6).** STU. 12. Demonstration of competence in community planning and design through production of an original, comprehensive project that integrates knowledge and experience in addressing a complex planning and design problem. Departmental approval.

**CPLN 7920 PLANNING INTERNSHIP (1-6).** INT. Professional experience in public, private or non-profit planning or planning-related agency. Departmental approval.

### ENVIRONMENTAL DESIGN (ENVD)

**ENVD 2000 ENVIRONMENTAL DESIGN CONCEPTS AND PRACTICES I (3).** LEC. 3. Pr., ARCH 1000 or INDD 1120 or BSCI 1110 or ENVD major. Core knowledge of design and construction disciplines and business practices related to human-designed environments. Includes national and global perspectives and focus on interdisciplinary studies.

**ENVD 2100 ENVIRONMENTAL DESIGN WORKSHOP I (6).** LAB/LEC. 6. Pr., ENVD 2000. Focus on general technical skill set for environmental design foundations. Digital media introduction, structure and fabrication techniques, design communication development. Departmental approval.

## Architecture (ARCH)

**ENVD 3000 ENVIRONMENTAL DESIGN CONCEPTS AND PRACTICES II (3).** LEC. 3. Pr., ENVD 2100. Advanced knowledge of design, construction and planning disciplines and practice. National/global environmental design issues, focus on interdisciplinary concepts, hybrid practices, & sustainability. Departmental approval.

**ENVD 3100 CIVIC ENGAGEMENT AND RESEARCH METHODS (3).** LEC. 3. Pr., ENVD 3000. Civic engagement and research methods for environmental design. This is a research prep course to develop research methods, projects, and community partnerships for summer ENVD 4100 workshop capstone. Departmental approval.

### LANDSCAPE ARCHITECTURE (LAND)

Dr. Rod Barnett - 844-0192

**LAND 5110 BASIC LANDSCAPE ARCHITECTURAL DESIGN (6).** STU. 12. Landscape architectural design studio emphasizing research, planning and design problems at neighborhood to community scales.

**LAND 5130 STUDIO I: FOUNDATION STUDIO (5).** STU. 5. Teaches foundational skills (drawing, modeling, and multiple representational skills) that are necessary to progress into future design studios.

**LAND 5131 STUDIO I: FIELD STUDIES (1).** FLD. 1. Field studies and travel related to studio. Departmental approval.

**LAND 5140 HISTORY I: LANDSCAPE MODERNISM (3).** LEC. 3. Investigates issues in the modern history of landscape architecture, from early twentieth century to the present day.

**LAND 5150 CONSTRUCTION I (2).** LEC. 2. Fundamental skills needed to analyze, understand, and manipulate landform with respect to form, grading and drainage. Departmental approval.

**LAND 5160 GRAPHIC STUDIES I (2).** LEC. 2. Develops the use of different drawing and presentation techniques to clearly communicate design ideas, specifically by means of sketching, watercolors, colored pencils and drafting techniques. Departmental approval.

**LAND 5170 GRAPHIC STUDIES II (3).** LEC. 3. Graphic and communication theories and skills in a variety of media. Photoshop, Illustrator, In design and AutoCAD. Departmental approval.

**LAND 5210 URBAN HOUSING STUDIO (6).** STU. 12. Spatial/formal qualities of multi-unit housing utilizing the wealth of housing typologies erected in North America.

**LAND 5230 STUDIO II (5).** STU. 5. Iterative design processes that project and test design scenarios, refining propositions based on multiple performance criteria in relation to site specificity and community context. Departmental approval. May count either LAND 5230 or 6230.

**LAND 5231 FIELD STUDIES II (1).** FLD. 1. Field studies and travel related to studio. Departmental approval. May count either LAND 5231 or 6231

**LAND 5240 TRADITIONS OF LANDSCAPE MAKING (3).** LEC. 3. Pr., LAND 5140. Major transformation in the broad history of landscape architecture from antiquity to the end of the nineteenth century, with particular attention to canonical gardens and landscapes. Departmental approval. May count either LAND 5240 or 6240.

**LAND 5250 CONSTRUCTION II (2).** LEC. 2. Fundamentals of design detailing of site assemblies, with emphasis on material research and construction methods. Departmental approval. May count either LAND 5250 or 6250.

**LAND 5260 GRAPHIC STUDIES III (3).** SEM. 3. Pr., LAND 5150. Fundamental concepts of Geographic Information Systems are used to create visual frameworks for gathering, interpreting, and sharing spatial data in landscape architecture practice. Departmental approval.

**LAND 5270 PLANT SPATIALITY (2).** LEC. 2. Studies of innovative design with plants, exploring issues plant association, strata, and spatiality. Departmental approval. May count either LAND 5270 or 6270.

**LAND 5280 LANDSCAPE ELEMENTS: EARTH, FIRE AND WATER (3).** LEC. 3. Introduces students to the basic elements used in the design of the built landscape.

**LAND 5310 INDEPENDENT STUDY THESIS (6).** STU. 12. Extensive exploration and development of a landscape architecture issue of the students choice beyond the level associated with entry to the profession. Level-III standing; departmental approval.

**LAND 5330 STUDIO III (5).** LEC. 5. Pr., P/C, LAND 5331 or P/C, LAND 6331 and LAND 5230. Investigates eco-cultural relationships between regional, metropolitan and urban scales with emphasis on physical and social flows. Departmental approval.

**LAND 5331 FIELD STUDIES III (1).** FLD. 1. SU. Pr., P/C, LAND 5330 or P/C, LAND 6330 and LAND 5230. Field studies and travel related to studio. Departmental approval.

**LAND 5340 URBAN STUDIES 1: AMERICAN URBAN LANDSCAPES (3).** SEM. 3. This course explores the evolution of the American landscape, its current conditions, and prospects. Students learn to read the landscape, reflect on its transformation and become responsible critics. Departmental approval.

**LAND 5350 CONSTRUCTION III: HYDROLOGIES (2).** LEC. 1, LAB. 2. Pr., LAND 5230. This course emphasizes storm water research, planning and design. Students learn technical skills and design techniques needed to construct projects with environmental integrity and aesthetic appeal. Departmental approval.

**LAND 5360 DYNAMIC SYSTEMS I: URBAN ECOLOGIES (3).** LEC. 3. Pr., LAND 5230. This course provides an overview of natural ecological systems and how they can be preserved or restored to enhance human and ecological health through sustainable design. Departmental approval.

**LAND 5370 PLANT EPHEMERALITY (2).** LEC. 2. Pr., LAND 5230. Studies of innovative design with plants, exploring issues of plant phenology and dynamic lifecycle conditions. Departmental approval.

**LAND 5430 URBAN THEORY (3).** LEC. 3. An introduction to contemporary theories of urban design, geography, and cultural theory using case study methods.

**LAND 5500 LAND ETHICS AND ENVIRONMENTAL RESPONSIBILITY (3).** LEC. 3. Explores the ethical relationship of man and nature.

**LAND 5510 ENVIRONMENTAL PLANNING STUDIO (6).** STU. 12. Natural systems analysis as a basis for site planning and large scale facilities design. Level-II standing.

**LAND 5520 LANDSCAPE ARCHITECTURE DESIGN STUDIO (6).** STU. 12. Pr., LAND 5110. A continuation of the basic design studio emphasizing research, planning, and design problems at community to regional scales.

**LAND 5540 HISTORY OF LANDSCAPE ARCHITECTURE II (3).** LEC. 3. Explores the built landscape from the 17th Century to the present including designs in America, Europe and Asia.

**LAND 5590 INDEPENDENT STUDY THESIS (6).** STU. 12. A major integrative investigation of a focused problem area, defined and pursued by the student under the direction of a faculty member.

**LAND 6130 STUDIO I: FOUNDATION STUDIO (5).** STU. 5. Teaches foundational skills (drawing, modeling, and multiple representational skills) that are necessary to progress into future design studios.

**LAND 6131 STUDIO I: FIELD STUDIES (1).** FLD. 1. Field studies and travel related to studio. Departmental approval.

**LAND 6140 HISTORY I: LANDSCAPE MODERNISM (3).** LEC. 3. Investigates issues in the modern history of landscape architecture, from early twentieth century to the present day.

**LAND 6150 CONSTRUCTION I (2).** LEC. 2. Fundamental skills needed to analyze, understand, and manipulate landform with respect to form, grading and drainage. Departmental approval.

**LAND 6160 GRAPHIC STUDIES I (2).** LEC. 2. Develops the use of different drawing and presentation techniques to clearly communicate design ideas, specifically by means of sketching, watercolors, colored pencils and drafting techniques. Departmental approval.

**LAND 6170 GRAPHIC STUDIES II (3).** LEC. 3. Graphic and communication theories and skills in a variety of media. Photoshop, Illustrator, In design and AutoCAD. Departmental approval.

**LAND 6230 STUDIO II (5).** STU. 5. Iterative design processes that project and test design scenarios, refining propositions based on multiple performance criteria in relation to site specificity and community context. Departmental approval. May either LAND 5230 or 6230.

**LAND 6231 FIELD STUDIES II (1).** FLD. 1. Field studies and travel related to studio. Departmental approval. May count either LAND 5231 or 6231.

**LAND 6240 TRADITIONS OF LANDSCAPE MAKING (3).** LEC. 3. Pr., LAND 6140. Major transformation in the broad history of landscape architecture from antiquity to the end of the nineteenth century, with particular attention to canonical gardens and landscapes. Departmental approval. May count either LAND 5240 or 6240.

**LAND 6250 CONSTRUCTION II (2).** LEC. 2. Fundamentals of design detailing of site assemblies, with emphasis on material research and construction methods. Departmental approval. May count either LAND 5250 or 6250.

**LAND 6260 GRAPHIC STUDIES III (3).** SEM. 3. Fundamental concepts of Geographic Information Systems are used to create visual frameworks for gathering, interpreting, and sharing spatial data in landscape architecture practice. Departmental approval.

**LAND 6270 PLANT SPATIALITY (2).** LEC. 2. Studies of innovative design with plants, exploring issues plant association, strata, and spatiality. Departmental approval. May count either LAND 5270 or 6270.

**LAND 6330 STUDIO III (5).** LEC. 5. Pr., P/C, LAND 5331 or P/C, LAND 6331 and LAND 5230. Investigates eco-cultural relationships between regional, metropolitan and urban scales with emphasis on physical and social flows. Departmental approval.

**LAND 6331 FIELD STUDIES III (1).** FLD. 1. Pr., P/C, LAND 5330 or P/C, LAND 6330 and LAND 5230. Field studies and travel related to studio. Departmental approval.

**LAND 6340 URBAN STUDIES 1: AMERICAN URBAN LANDSCAPES (3).** SEM.

3. Pr., LAND 5230. This course explores the evolution of the American landscape, its current conditions, and prospects. Students learn to read the landscape, reflect on its transformation and become responsible critics. Departmental approval.

**LAND 6350 CONSTRUCTION III: HYDROLOGIES (2).** LEC. 1, LAB. 2. Pr., LAND 5230. This course emphasizes storm water research, planning and design. Students learn technical skills and design techniques needed to construct projects with environmental integrity and aesthetic appeal. Departmental approval.

**LAND 6360 DYNAMIC SYSTEMS I: URBAN ECOLOGIES (3).** LEC. 3. Pr., LAND 5230. This course provides an overview of natural ecological systems and how they can be preserved or restored to enhance human and ecological health through sustainable design. Departmental approval.

**LAND 6370 PLANT EPHEMERALITY (2).** LEC. 2. Pr., LAND 5230. Studies of innovative design with plants, exploring issues of plant phenology and dynamic lifecycle conditions. Departmental approval.

**LAND 6430 URBAN THEORY (3).** LEC. 3. An introduction to contemporary theories of urban design, geography, and cultural theory using case study methods.

**LAND 7130 STUDIO IV (5).** STU. 5. Departmental approval. Investigates design strategies and techniques for generating new resilient cultural and environmental practices within complex dynamic conditions.

**LAND 7131 FIELD STUDIES (1).** FLD. 1. Pr., P/C, LAND 7130 or P/C, LAND 5230. Field studies and travel related to studio. Departmental approval.

**LAND 7140 URBAN STUDIES II: GLOBAL URBANISM (3).** LEC. 3. Examines the major global drivers of urban change, contemporary theories of international urban design, geography and cultural theory. Departmental approval.

**LAND 7170 PLANT FUNCTIONALITY (2).** LEC. 2. Departmental approval. Studies of innovative design with plants, exploring the performance of plants and introducing the standards of the nursery industry.

**LAND 7180 DYNAMIC SYSTEMS II: REGENERATIVE TECHNOLOGIES (2).** LEC. 2. Introduces issues of land contamination and explores remediative and regenerative technologies as design strategies towards new productive futures. Departmental approval.

**LAND 7232 TERMINAL STUDIO I (6-8).** STU. This is a directed studio that will ask students to look at a large site within a city and design an individual intervention that reflects the goals and objectives of that studio. Departmental approval.

**LAND 7240 THEORIES AND PRACTICES (3).** SEM. 3. This is a reading, writing, and discussion seminar that examines the idea that the development of a democratic, civic, diverse social ecology can create more resilient and sustainable communities. Departmental approval.

**LAND 7280 DYNAMIC SYSTEMS III: REGIONAL ECOLOGIES (3).** LEC. 3. This lecture/field laboratory course examines and critiques current landscape problems/crises of multiple scales and scrutinizes the public and private response to these problems. Departmental approval.

**LAND 7331 THESIS SEMINAR (1).** SEM. 1. Pr., LAND 5230. Students summarize and critique a text that is central to their Thesis Studio topic, explaining how their work both responds to and extends the position of the text. Departmental approval.

**LAND 7332 TERMINAL STUDIO II (6-12).** STU. Pr., LAND 5230. A directed studio that will ask students to look at a large site within a city and design an individual intervention that reflects the goals and objectives of that studio. Departmental approval.

**LAND 7340 PROFESSIONAL PRACTICE (3).** LEC. 3. Pr., LAND 5230. This course surveys the development and ethics of the profession of landscape architecture and presents an overview of the business and practice of the profession. Departmental approval.

**LAND 7350 LANDSCAPE COMPUTER MODELING (2).** LEC. 2. Three dimensional and dynamic systems modeling. Departmental approval.

**LAND 7530 DESIGN BUILD FELLOWSHIP (3-6)** LEC/PRA. Pr., LAND 5230. The design investigation and construction/installation of a landscape proposal. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**LAND 7900 DIRECTED STUDIES (1-3).** LEC. An individual student can pursue an area of research beyond the required curriculum. Departmental approval; MLA II standing. Course may be repeated for a maximum of 9 credit hours.

**LAND 7960 SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURE (2).** LEC. 2. Investigation of landscape architectural issues and topics that can be undertaken by means of design, and the development of methodologies and techniques appropriate to such investigation. Departmental approval.

**LAND 7990 DESIGN THESIS I (6).** LEC. 6.

**LAND 7991 DESIGN THESIS II (8).** LEC. 8.

**LAND 7992 THESIS RESEARCH SUMMARY (1).** LEC. 1.

**Arts (ARTS)**

Prof. Barry Fleming - 844-4373

**ARTS 1010 BASIC DRAWING (3).** AAB/STU. 9. Instruction in freehand drawing concepts, materials and techniques. A variety of approaches and subject matter will be used. Not open to ARTS majors. Credit not applicable to BA and BFA degree.

**ARTS 1030 BASIC CERAMICS (3).** STU. 9. Instruction in principles of three-dimensional design and sculpture. Clay is used to explore techniques of casting, constructing, modeling, and wheel throwing. Work with glazes and surface decoration. Credit not applicable to BA and BFA degrees.

**ARTS 1040 BASIC PAINTING (3).** STU. 9. Instruction in painting concepts, materials, and techniques. Water-based paints and other media are used to explore a variety of approaches and subject matter. Not open to ARTS majors. Credit not applicable to BA and BFA degrees.

**ARTS 1110 DRAWING I (3).** AAB/STU. 9. Basic drawing with emphasis on accurate observation, pictorial organization, and the depiction of space; development of drawing skills using various black and white media. Departmental approval. ARTS majors only.

**ARTS 1120 DRAWING II (3).** STU. 9. Pr., ARTS 1110. Continuation of concepts and processes from ARTS 1110. Introduction to interpretive approaches with emphasis on concept, content, and creativity. Exploration of various black and white and color media. Departmental approval. Arts majors only.

**ARTS 1210 2-D DESIGN FOR FINE ART AND GRAPHIC DESIGN (3).** STU. 9. Elements and principles of basic two-dimensional design. Emphasis on composition, color theory, and craftsmanship. Departmental approval Arts majors only.

**ARTS 1220 3-D DESIGN FOR FINE ART AND GRAPHIC DESIGN (3).** STU. 9. Elements and principles of basic three-dimensional design. Emphasis on spatial organization, color, and media exploration and craftsmanship. Arts majors only. Departmental approval.

**ARTS 1710 INTRODUCTION TO ART HISTORY I (3).** LEC. 3. Fine Arts Core. Introduction to major art traditions of the world, from Paleolithic times to AD/CE 1000.

**ARTS 1717 HONORS INTRODUCTION INTO ART HISTORY I (3).** LEC. 3. Pr., Honors College. Fine Arts Core. Introduction to major art traditions of the world, from Paleolithic times to AD/CE 1000.

**ARTS 1720 INTRODUCTION TO ART HISTORY II (3).** LEC. 3. Fine Arts Core. An introduction to world art, c.1000 to c.1700. Medieval, Renaissance, and Baroque Europe with Islamic and non-Western art of the same time period.

**ARTS 1727 HONORS INTRO ART HISTORY II (3).** LEC. 3. Pr., Honors College. Fine Arts Core. An introduction to world art, c. 1000 to c. 1700. Medieval, Renaissance, and Baroque Europe with Islamic and non-Western art of the same period. Credit will not be given for both ARTS 1720 and ARTS 1727.

**ARTS 1730 INTRODUCTION TO ART HISTORY III (3).** LEC. 3. Fine Arts Core. Major works of painting, sculpture, and architecture from the Rococo period through the 20th century. Emphasis on styles and social, political and cultural relationships.

**ARTS 1737 HONORS INTRODUCTION TO ART HISTORY III (3).** LEC. 3. Pr., Honors College. Fine Arts Core. Major works of painting, sculpture, and architecture from the Rococo period through the 20th century. Emphasis on styles and social, political and cultural relationships. Credit will not be given for both ARTS 1730 and ARTS 1737.

**ARTS 2110 FIGURE DRAWING (3).** AAB/STU. 9. Pr., ARTS 1110 and ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). The human figure as form and as compositional element. Measuring and sighting for proportion. Drawing from casts, skeletons, and live nude models. Departmental approval.

**ARTS 2140 ADVANCED DRAWING I (3).** AAB/STU. 9. Pr., ARTS 2110. Concepts, materials and techniques with emphasis on the development of a personal vision and individual approach. Live nude models may be used.

**ARTS 2210 INTRODUCTION TO PHOTOGRAPHY (3).** AAB/STU. 6. Pr., (ARTS 1210 and ARTS 1110 and ARTS 1120 and ARTS 1710) or (ARTS 1720 and ARTS 1730). Introduction to the themes and movements in photography from mid 19th century to the 21st century; criticism and theoretical approaches; readings, writing and photography based studio projects. Departmental approval.

**ARTS 2310 PAINTING I (3).** AAB/STU. 9. Pr., ARTS 1110 and ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Instruction in painting concepts, materials, and methods.

**ARTS 2410 PRINTMAKING I (3).** STU. 9. Pr., ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1720 and ARTS 1730) or (ARTS 1710 and ARTS 1730). Instruction in basic forms, concepts, and materials of printmaking. Mono printing, relief, and multiple originals are covered.

**ARTS 2510 INTRODUCTION TO SCULPTURE (3).** AAB/STU. 6. Pr., ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1720 and ARTS 1730) or (ARTS 1710 and ARTS 1730). A survey of the materials, processes; and issues involved in the production of contemporary object-oriented

## Arts (ARTS)

sculpture. Focus on problem solving and presentations of contemporary sculpture. Two 1000 level Art History, Departmental approval.

**ARTS 2810 CERAMICS I (3).** AAB/STU. 9. Pr., ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1720 and ARTS 1730) or (ARTS 1710 and ARTS 1730). Introduction to hand forming methods for sculpture and vessel forms in clay. Work with glazes and firing.

**ARTS 3010 ELEMENTARY SCHOOL ART (4).** LEC. 2, LST. 6. A practical and hands-on introduction to teaching art, and the materials and methods related to elementary and pre-school art. Open to ARTS majors as a non art elective.

**ARTS 3100 INTERMEDIA (3).** STU. 9. Pr., ARTS 2140 and ARTS 2310 and ARTS 2410 and ARTS 2510 and ARTS 2810 and ARTS 1710 and ARTS 1720 and ARTS 1730. Introduction to concepts and visual problem solving in mixed media.

**ARTS 3150 ADVANCED DRAWING II (3).** STU. 9. Pr., ARTS 2140. Medium and subject determined by student with approval of instructor. Emphasis on strengthening the student's aesthetic awareness and technical skills.

**ARTS 3220 DIGITAL PHOTOGRAPHY (3).** AAB/STU. 3. Pr., ARTS 1110 and ARTS 1120 and ARTS 1210 and ARTS 2210 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Concepts and practices of digital photography with emphasis on scanning and fine-printing through computer-based output.

**ARTS 3320 PAINTING II (3).** AAB/STU. 3. Pr., ARTS 1110 and ARTS 1120 and ARTS 1210 and ARTS 2210 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Instruction in painting concepts, materials, and techniques with emphasis on the development of technical skills and a personal vision and individual approach.

**ARTS 3330 PAINTING III (3).** AAB/STU. 9. Pr., ARTS 2140 and ARTS 2310. Medium and subject determined by student and instructor. Emphasis on strengthening aesthetic awareness and technical skills. Live nude models may be used.

**ARTS 3420 PRINTMAKING II (3).** STU. 9. Pr., ARTS 2410. Techniques of intaglio printmaking. May not be taken concurrently with ARTS 3430.

**ARTS 3430 PRINTMAKING III (3).** STU. 9. Pr., ARTS 2410. Techniques of lithography. May not be taken concurrently with ARTS 3420.

**ARTS 3520 SCULPTURE AS OBJECT (3).** STU. 6. Pr., ARTS 2510. Continued research into the materials, processes and issues involved in the production of mixed media sculpture. Readings and discussions on recent developments in the field of sculpture. Departmental approval.

**ARTS 3530 SCULPTURE AS SPACE (3).** STU. 6. Pr., ARTS 2510. A survey of the methods, technologies (including sound and light), and issues involved in the production of contemporary sculptural installations, environments, and sites. Class discussion of student projects, with readings, presentations, and videos that address current art practice. departmental approval.

**ARTS 3650 HISTORY OF PHOTOGRAPHY (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Introduction to history of photography with emphasis on American documentary photography.

**ARTS 3680 TWENTIETH-CENTURY ART II: 1945-2000 (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). An introduction to the artists, movements, institutions, concepts, and themes of late twentieth-century art.

**ARTS 3690 ARTS OF AFRICA (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). An introduction to the art, artists, themes and issues in African art from the pre-colonial period to the contemporary era.

**ARTS 3700 ART OF THE UNITED STATES (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). A study of architecture, painting, and sculpture from colonial to recent times. Selected movements and works are considered in relationship both to European and to indigenous conditions and attitudes. Departmental approval.

**ARTS 3710 ANCIENT ART OF THE WEST (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). An examination of major art traditions of the ancient world: Egypt, Near East, Aegean, Greece, Rome. Departmental approval.

**ARTS 3720 MEDIEVAL ART OF THE WEST (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). A study of major art traditions of the West from the fall of Rome to CE 1400, with a selective focus on the major art traditions: Migration period, Carolingian, Ottonian, Romanesque, Gothic, and Italo-Byzantine. Departmental approval.

**ARTS 3730 RENAISSANCE ART IN ITALY (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). A study of the architecture, painting, and sculpture of the 15th and 16th centuries in Italy. Departmental approval.

**ARTS 3740 BAROQUE AND ROCOCO ART (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1730 and ARTS 1720). A study of Baroque architecture, painting, and sculpture in 17th-century Europe and of the Rococo style of the 18th century. Departmental approval.

**ARTS 3750 19TH CENTURY ART (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). An introduction to major art movements from Neo-Classicism to Post-Impressionism and Art Nouveau. Departmental approval.

**ARTS 3760 20TH CENTURY ART (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). A study of major developments in painting, sculpture, and architecture in Europe and the United States from 1900 to recent times. Departmental approval.

**ARTS 3770 ANCIENT AMERICAN ART (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). A study of major art traditions of Nuclear America, from Mexico to the Andes, from the beginnings to CE 1550. Departmental approval.

**ARTS 3780 RENAISSANCE ART OF NORTHERN EUROPE (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). A study of the art of Northern Europe, CE 1300-1600. Major themes include cultural interchange, court and bourgeois patronage, rise of graphic arts, and the development of the art market. Departmental approval.

**ARTS 3790 ARTS OF ASIA (3).** LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Introduction to major art traditions of Asia, from the beginnings to the present. Departmental approval.

**ARTS 3800 ISSUES AND CRITICISM CONTEMPORARY ART (3).** LEC. 3. Pr., ARTS 1710 and ARTS 1720 and ARTS 1730. Readings and discussions about art since 1970. One 3000-level art history course and levels I and II in a single fine arts studio sequence.

**ARTS 3810 GENDER AND THE VISUAL ARTS (3).** LEC. 3. Pr., ARTS 1720 and ARTS 1730. Departmental approval. An introduction to gender issues in the visual arts in historical and contemporary contexts. Examines the cultural notions of both masculine and feminine gender roles at play in works of art and explores key issues that have affected women's production of works of art in the past and present.

**ARTS 3820 CERAMICS II (3).** STU. 9. Pr., ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Introduction to wheel-thrown pottery. Presentation of historical and contemporary contexts for fine arts ceramics. Work with glazes and firing.

**ARTS 3830 CERAMICS III (3).** STU. 9. Pr., ARTS 2810. Continuation of ARTS 2810. with increased emphasis on individual stylistic and conceptual concerns.

**ARTS 4010 ART IN EDUCATION (4).** STU. 10. Principles and objectives of art issues pertinent to teaching on the public school level. Art appreciation and production emphasizing multicultural and interdisciplinary aspects of art in the classroom. Open to ARTS majors as a non art elective. Course may be repeated for a maximum of 8 credit hours.

**ARTS 4340 PAINTING IV (4).** STU. 12. Pr., ARTS 3330 and ARTS 1710 and ARTS 1720 and ARTS 1730. Advanced painting with medium and subject idea determined by student with approval of the instructor. Emphasis on strengthening the student's awareness and technical skills as a maturing painter. Live nude models may be used. Course may be repeated for a maximum of 8 credit hours. One 3000-level art history course.

**ARTS 4440 PRINTMAKING IV (4)** LST. 12. Pr., ARTS 3420 and ARTS 3430 and ARTS 1710 and ARTS 1720 and ARTS 1730. Stylistic development, technical proficiency, and individual interest are pursued. Emphasis on aesthetic and conceptual growth through production and research. Course may be repeated for a maximum of 8 credit hours. One 3000-level art history course. Course may be repeated for a maximum of 8 credit hours.

**ARTS 4540 ADVANCED SCULPTURE (4).** STU. 8. Pr., ARTS 3520 and ARTS 3530. Advanced investigation of the history, theory and methods of sculptural practice. Individual instruction and supervision of research and reading. Regular individual and group critiques. Pr., departmental approval. Course may be repeated for a maximum of 8 credit hours.

**ARTS 4700 SENIOR CAPSTONE: ART HISTORY (3).** LEC. 3. Capstone course for Art History. Declared Art History option major or minor; and completion of 18 hours of 3000 level Art History courses.

**ARTS 4840 CERAMICS IV (4).** STU. 12. Pr., ARTS 1710 and ARTS 1720 and ARTS 1730 and ARTS 3820 and ARTS 3830. Continuation of ARTS 3830 with increased emphasis on individual stylistic and conceptual concerns. One 3000-level art history course.

**ARTS 4850 PROFESSIONAL STUDIO PRACTICES (2).** STU. 2. Instruction in portfolio preparation, resume writing, gallery and museum exhibition, and information on a wide range of art careers and graduate study. Fall, Spring.

**ARTS 4930 DIRECTED STUDIES (2-3).** IND. Open to ARTS students only, who have shown ability, initiative, and industry. Independent studies are offered Painting, Printmaking, Sculpture, Imaging, Art History, and Ceramics (see department for listing). Course may be repeated for a maximum of 6 credit hours. Departmental approval and 3.0 minimum GPA in 3000-level ARTS courses in area of emphasis.

**ARTS 4967 HONORS SPECIAL PROBLEMS (1-3).** LEC. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

**ARTS 4970 SPECIAL TOPICS (2-3).** AAB. Pr., ARTS 1710 and ARTS 1720 and ARTS 1730 and ARTS 1110 and ARTS 1120 and ARTS 1210 and ARTS 1220 and

## Aviation and Supply Chain Management (AVSC)

(ARTS 3100 or ARTS 3200 or ARTS 3210 or ARTS 3220 or ARTS 3240 or ARTS 3250 or ARTS 3320 or ARTS 3330 or ARTS 3420 or ARTS 3430 or ARTS 3520 or ARTS 3530 or ARTS 3820 or ARTS 3830). Offered in Design, Fine Arts, Imaging and Art History (see department for listing). Completion of all 1000-level art history, all 1000-level Foundation courses, one 3000-level studio, and ARTS majors only. Course may be repeated for a maximum of 6 credit hours.

**ARTS 4980 SENIOR PROJECT FOR FINE ARTS (4).** LEC. 4. Pr., ARTS 2310 and ARTS 2410 and ARTS 2510 and ARTS 2810. Coreq., ARTS 4910. A directed terminal studio project with choice of subject and medium. This project will be exhibited and a faculty committee will award a letter grade. Professional quality color images of the project work must be presented to the department before the student is cleared for graduation. Fine Arts studio sequence in one group through level IV. Must be taken in student's final semester.

**ARTS 4997 HONORS RESEARCH AND THESIS (1-3).** IND. Pr., Honors College. Course may be repeated for a maximum of 6 credit hours.

### Aviation and Supply Chain Management (AVSC)

Dr. Joe Hanna - 844-6848

#### AVIATION MANAGEMENT (AVMG)

**AVMG 1010 INTRODUCTION TO AVIATION (2).** LEC. 2. Orientation to aviation management career opportunities. The history of significant events and accomplishments in the attempt to move through the air and space.

**AVMG 3050 SEVERE AND HAZARDOUS WEATHER DISRUPTIONS (3).** LEC. 3. Departmental approval. Meteorology as it applies to the operation of aircraft with emphasis on observation of weather elements and interpretation of flight planning weather information.

**AVMG 3140 PERFORMANCE EVALUATION AND MEASUREMENT (3).** LEC. 3. Pr., AVMG 1010 and SCMN 3150 and SCMN 3720. Introduction to the use of operations research techniques. Includes the role of math modeling procedures, manual and computer generated solutions, applied to the decision-making process. Credit will not be given for both AVMG 3140 and SCMN 4700.

**AVMG 3200 APPLIED ANALYSIS IN TRANSPORTATION (3).** LEC. 3. Pr., AVMG 1010 and SCMN 3150 and SCMN 3720. Departmental approval. Development of principles required in economic analysis.

**AVMG 4040 BUSINESS AVIATION MANAGEMENT (2).** LEC. 2. Pr., AVMG 1010 and SCMN 3720. Departmental approval. Current principles and practices in commercial and business/corporate flight operations including organizational sources of revenue, functions, operation and typical problems.

**AVMG 4060 TRANSPORTATION SAFETY MANAGEMENT (3).** LEC. 3. Pr., AVMG 1010 and SCMN 3720. Analysis and insight into the sequence of circumstances that can occur and cause an aircraft accident to happen as well as the techniques, processes and limitations in determining aircraft accident causation.

**AVMG 4080 AIR TRANSPORT PLANNING (3).** LEC. 3. Pr., AVMG 5090. Management decision making involved in selection of equipment, routes and the establishment of rates by certified and non-certified air carriers.

**AVMG 4130 AIRPORT MANAGEMENT (3).** LEC. 3. Pr., MKTG 3310. Practices in management of a civil public airport, including organization, functions, operations, sources of revenue, funding, maintenance and administration.

**AVMG 4140 AIRPORT PLANNING AND DESIGN (3).** LEC. 3. Pr., AVMG 4130. Principles and procedures pertaining to planning airport facilities required to meet the immediate and future air transportation of a community or region.

**AVMG 4190 AIR SPACE MANAGEMENT (3).** LEC. 3. Pr., AVMG 1010 or AVMG 3050 Departmental approval. Air traffic control procedures, facilities, center, and operations. Theory of radar operation and air traffic separation using computer-based ATC radar simulators. Special fee

**AVMG 4200 AIR CARGO OPERATIONS (3).** LEC. 3. Domestic and international air cargo operations with emphasis on cargo economics, equipment, domestic and international regulatory activities, agents, operational techniques, systems and problems.

**AVMG 4810 PROFESSIONAL DEVELOPMENT IN AVIATION (1).** LEC. 1. SU. This course examines various aviation profession issues and strategies. This course includes career planning, professional development and certifications, educational initiatives for continued professional development, and career management strategies. Credit will not be given for both SCMN 4810 and AVMG 4810.

**AVMG 4920 INTERNSHIP IN AVIATION MNGT (1-6).** INT. Practical on-the-job training under supervision with aviation agencies. Written reports are required by designated faculty supervisors. Course may be repeated for a maximum of 6 credit hours.

**AVMG 4967 HONORS READING (1-3).** LEC. Pr., Honors College.

**AVMG 4997 HONORS THESIS (1-3).** IND. Pr., Honors College.

**AVMG 5090 AVIATION LAW AND POLICY (3).** LEC. 3. Pr., AVMG 1010 and AVMG 3050 and SCMN 3720. Departmental approval. The legal structure of aviation including federal, local and state statutes, contracts, insurance and liability, regulatory statutes and case law.

**AVMG 5170 AIRLINE MANAGEMENT (3).** LEC. 3. Pr., AVMG 1010 and AVMG 3050 and SCMN 3150 and SCMN 3720. Departmental approval. Airline manufacturing, economic, and operational/managerial issues, research and development and competition issues and a survey of the world's major airlines in terms of their management strategies and style.

**AVMG 5180 GLOBAL AIR TRANSPORTATION MANAGEMENT (3).** LEC. 3. Pr., AVMG 3140 and AVMG 3200. Departmental approval. International foreign air carriers, influences of ICAO and IATA, national ownership, determinants of power, operational and management practices, routes and fares.

**AVMG 5970 SPECIAL TOPICS AVIATION MNGT (1-4).** LEC. Investigation of current issues in the aviation industry. Course may be repeated for a maximum of 4 credit hours.

**AVMG 6090/6096 AVIATION LAW AND POLICY (3).** LEC. 3. The legal structure of aviation including federal, local, and state statutes, contracts, insurance and liability, regulatory statutes and case law. Departmental approval.

**AVMG 6170/6176 AIRLINE MANAGEMENT (3).** LEC. 3. Airline manufacturing, economic, and operation/managerial issues, research and development and competition issues and a survey of the world's major airlines in terms of their management strategies and style. Departmental approval.

**AVMG 6180/6186 GLOBAL AIR TRANSPORTATION MANAGEMENT (3).** LEC. 3. Pr., AVMG 3140 and AVMG 3200. International foreign air carriers, influences of ICAO and IATA, national ownership, determinants of power, operational and management practices, routes and fares/ Junior standing Departmental approval.

**AVMG 6970/6976 SPECIAL TOPICS AVIATION MNGT (1-3).** LEC. 1-3. Investigation of current issues in the aviation industry. Credit will not be given for both AVMG 5970 and AVMG 6970. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**AVMG 7930/7936 SPECIAL PROBS IN AVIATION MNGT (1-3).** LEC. 1-3. Special problems and current status of the aviation and aerospace industries are analyzed through a problem solving exercise. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

#### PROFESSIONAL FLIGHT MANAGEMENT (AVMF)

Dr. Joe Hanna - 844-6848

**AVMF 2141 FLIGHT ORIENTATION (1).** LAB. 2. Basic flight experience for non-pilots to familiarize aviation majors, engineers, teachers, and other students desiring a limited exposure to flight. Includes ground discussion and aircraft time. Special fee. 2.5 cumulative GPA.

**AVMF 2150 PRINCIPLES OF PRIVATE FLIGHT (3).** LEC. 3. General introduction and preparation for the FAA private pilot written examination. Theory of flight, aircraft and engine performance, regulations, meteorology, navigation, airspace utilization and aviation physiology. Special fee.

**AVMF 2171 PRIVATE PILOT FLIGHT TRNG I (1).** LAB. 3. Pr., AVMF 2150. Dual and solo flight instruction and discussion to prepare for FAA Private Pilot Certificate. Special fee.

**AVMF 2181 PRIVATE PILOT FLIGHT TRNG II (1).** LAB. 3. Pr., AVMF 2171. Continuation of dual and solo flight instruction and discussion to prepare for FAA Private Pilot Certificate. Special fee. Departmental approval.

**AVMF 2230 PRIN OF INSTRUMENT FLIGHT (3).** LEC. 3. Instruments, FAA regulations, air traffic procedures, radio navigation and air craft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examinations. Special fee.

**AVMF 2241 INSTRUMENT FLIGHT TRAINING I (1).** LAB. 3. Instruments, FAA regulations, air traffic control procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examination. Special fees. Private Pilot Certificate.

**AVMF 2250 COMM FLIGHT PROBLEMS (3).** LEC. 3. Pr., AVMF 2171. FAA regulations, high altitude operations aerodynamics, commercial flight maneuvers, environmental, ice control, retractable landing gear and aircraft performances as applied to commercial flying. Preparation for the FAA Commercial Pilot knowledge examination. Special fee. Private Pilot Certificate.

**AVMF 2251 INSTRUMENT FLIGHT TRAINING II (1).** LAB. 3. Pr., AVMF 2241. Continuation of Instruments, FAA regulations, air traffic control procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examination. Special fee. Departmental approval.

**AVMF 2261 COMM FLIGHT TRAINING II (1).** LAB. 3. Pr., AVMF 2241. Flight training toward the Commercial Pilot Certificate. Special fee. Departmental approval.

**AVMF 2271 COMM FLIGHT TRAIN III (1).** LAB. 3. Pr., AVMF 2261. Continuation of flight training towards the Commercial Pilot Certificate. Emphasis on advanced commercial maneuvers, complex airplane systems and cross country flying. Special fee.

**AVMF 4271 MULTI ENGINE TRAINING (1).** LAB. 2. Pr., AVMF 2271. Specialized instruction in methods and techniques of multi engine aircraft operations. Sufficient classroom and flight instruction is given under FAA Part 141 to qualify for the FAA



## Biochemistry (BCHE)

Multi-Engine Land Certificate. Special Fees. Or Commercial Pilot Certificate with Instrument rating and Departmental approval.

**AVMF 4280 PRINCIPLES FLIGHT INSTRUCT I (2).** LEC. 3. Principles of teaching as applied to instructing, analyzing and evaluating flight students. Emphasis is on preparation for the FAA Fundamentals of Instruction and the Flight Instructor-Airplane Knowledge Examinations. Commercial Pilot Certificate Departmental approval.

**AVMF 4281 FLIGHT INSTRUCTION TRNG I (1).** LAB. 3. Pr., AVMF 2271. Discussion, instruction and arranged practice in flight instruction in preparation for the FAA Flight Instructor Certificate. Special fee. Or Commercial Pilot Certificate with Instrument Rating.

**AVMF 4290 FLIGHT INSTRUCTION TRNG I (2).** LEC. 2. Pr., AVMF 4280. Continuation of principles of teaching as applied to instructing and evaluating flight students. Emphasis is on preparation for the FAA Fundamentals of Instruction and the Flight Instructor-Airplane Knowledge Examinations.

**AVMF 4291 PRIN OF FLIGHT INSTRUCT II (1).** LAB. 3. Pr., AVMF 4281. Continuation of discussion, instruction, and arranged practice in flight instruction in preparation for the FAA Flight Instructor Certificate. Special fee.

**AVMF 4320 PRINCIPLES OF PROFESSION FLGHT (3).** LEC. 3. Pr., AVMF 2230. Advanced aircraft performance, IFR operations, high altitude meteorology and FAR Part 135. Industry opportunities and required qualifications. Special fee. Departmental approval.

**AVMF 4331 TRANSPART AIRCRAFT FLGT TRNG (1).** LAB. 2. Includes instrument and night instruction, emergency procedures and actual air transportation operations. Preparation for the Airline Transport Pilot Certification, if otherwise qualified. Special fees. Departmental approval.

**AVMF 4351 INSTRUMENT FLIGHT INSTCTR TRNG (1).** LAB. 2. Pr., AVMF 4280 and AVMF 4291. Discussion, instruction, and arranged practice in instrument flight instruction in preparation for the FAA Instrument Instructor Certificate. Special fees. Or CFI and departmental approval

**AVMF 4371 MULTI-ENGINE FLGHT INSTR TRNG (1).** LAB. 2. Discussion, instruction and arranged proactive in multi-engine flight instruction in preparation for the Multi-engine Instructor Certificate. Special fees. Departmental approval. 2.5 cumulative GPA.

**AVMF 4400 APPLIED AERODYNAMICS AND PROPULSION SYSTEMS (3).** LEC. 3. Pr., PHYS 1500 or departmental approval. The principles of aerodynamics and propulsion and how aerodynamic factors affecting lift, thrust, drag, in-air performance, stability and flight control. The aircraft design process is covered from concept to test flight.

### SUPPLY CHAIN MANAGEMENT (SCMN)

Dr. Joe Hanna - 844-6848

**SCMN 3150 OPS: MNGT OF BUSINESS PROCES (2).** LEC. 2. Fundamental concepts, techniques and tools of business processes. Credit will not be given for both SCMN 3150 and MNGT 3150.

**SCMN 3710 LOGS: MNGT OF FULFILLMENT PROC (3).** LEC. 3. Management of logistics processes involved in meeting customer demand, including inventory, transportation, distribution, and related activities. Credit will not be given for both SCMN 3710 and AMLG 3710. Fall, Spring.

**SCMN 3720 TRANS: MNGT OF PRODUCT FLOWS (3).** LEC. 3. Management of transportation operations and the role of transportation in achieving supply chain objectives. Credit will not be given for both SCMN 3720 and AMLG 3720. Fall, Spring.

**SCMN 3730 PURCHASING: SUPPLY MNGT & SRCNG (3).** LEC. 3. In-depth coverage of purchasing and supply management processes, strategies, and tools. Credit will not be given for both AMLG 4340 and SCMN 3730. Fall, Spring.

**SCMN 4700 SUPPLY CHAIN PERFORMANCE MNGT (3).** LEC. 3. Pr., SCMN 3710 or SCMN 3720. Understanding and managing supply chain performance through the use of metrics, analysis, and improvement strategies. Credit will not be given for both SCMN 4700 and AMLG 4880. Fall, Spring. College of Business Information Technology required, and

**SCMN 4730 SUPPLY CHAIN TOOLS AND TECH (3).** LEC. 3. Pr., SCMN 3150. Tools, techniques and technologies of various supply chain processes. Credit will not be given for both SCMN 4730 and MNGT 3250.

**SCMN 4780 TRANSPORTATION STRATEGY (3).** LEC. 3. Pr., and SCMN 3720. Strategies and tactics for improving service and financial performance of transportation companies and their customers. Credit will not be given for both SCMN 4780 and AMLG 4780. Fall, Spring.

**SCMN 4800 SUPPLY CHAIN STGY: GLOBAL PERSP (3).** LEC. 3. Pr., SCMN 3710 and SCMN 3720 and SCMN 3730. Capstone course providing an intensive study of strategies used to facilitate global flows of product, information, and payments. Fall, Spring.

**SCMN 4810 PROF DEV IN SUPPLY CHAIN MNGT (1).** LEC. 1. SU. Pr., SCMN 3150. Career planning and preparation for transition from university student to supply chain professional. Credit will not be given for both SCMN 4810 and BUSI 4010. Fall, Spring.

**SCMN 4900 SPEC PROBS IN SUPPLY CHAIN MGT (1-3).** AAB/LEC. SU. Individual research or project about an advanced topic in supply chain management. Departmental approval and Course may be repeated for a maximum of 3 credit hours.

**SCMN 4920 INTERNSHIP IN SUPPLY CHAIN MNG (1-6).** AAB/INT. SU. Pr., SCMN 3710 and SCMN 3720. Work experience in a supply chain related business, industry, or organization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**SCMN 4970 SPEC TOPS IN SUPPLY CHAIN MNGT (3-6).** LEC. Pr., SCMN 3150 and SCMN 3710. Current topics and issues related to the field of supply chain management. Course may be repeated for a maximum of 6 credit hours.

**SCMN 5710 ADVANCED PROCESS ANALYSIS (3).** LEC. 3. Pr., SCMN 3150. Advanced concepts, techniques and tools for process analysis; process performance; process control; process design. Credit will not be given for both SCMN 5710 and MNGT 5250 or MNGT 5350. Fall, Spring.

**SCMN 5720 QUALITY & PROCESS IMPROVEMENT (3).** LEC. 3. Pr., SCMN 3150 and STAT 2610. Fundamentals of process improvement; techniques for performing quality control functions; quality management systems. Credit will not be given for both SCMN 5720 and MNGT 5740. Fall, Spring.

**SCMN 6710 ADVANCED PROCESS ANALYSIS (3).** LEC. 3. Pr., SCMN 3150. Advanced concepts, techniques and tools of process analysis; process performance; process control; process design. Credit will not be given for both SCMN 6710 and MNGT 6250 or MNGT 6350. Fall, Spring.

**SCMN 6720/6726 QUALITY & PROCESS IMPROVEMEN (3).** LEC. 3. Pr., SCMN 3150 and STAT 2610. Fundamentals of process improvement; techniques for performing quality control functions; quality management systems. Credit will not be given for both SCMN 6720 and MNGT 6740. Fall, Spring.

**SCMN 7600/7606 SUPPLY MNGT AND MANUFACTURING (3).** LEC. 3. The management of purchasing, supply and materials management, manufacturing processes related to the fulfillment of supply chain requirements. Spring.

**SCMN 7700/7706 DEMAND MANAGEMENT FULFILLMENT (3).** LEC. 3. The management of logistical processes related to the fulfillment of supply chain requirements. Primary topics include tin integrated planning, operations, and performance analysis of demand, inventory, transportation, distribution, and customer relationships. Summer. Departmental approval.

**SCMN 7800/7806 SUPPLY CHAIN STRATEGY (3).** LEC. 3. Pr., SCMN 7600 and SCMN 7700 and SCMN 7606 and SCMN 7700 and SCMN 7600 and SCMN 7706 and SCMN 7606 and SCMN 7706. Advanced study of integrated supply chain theory, strategy, and practice. Topics include network design, collaboration, inventory visibility, process synchronization, information management, and financial analysis. Fall. Departmental approval.

## Biochemistry (BCHE)

Dr. J. V. Ortiz - 844-4043

Dr. Jack Wower - 844-1508

**BCHE 3180 NUTRITIONAL BIOCHEMISTRY (3).** LEC. 3. Pr., CHEM 2030 or CHEM 2080. Fundamental pathways of carbohydrate, lipid, and amino acid metabolism in human beings. Credit will not be given for both BCHE 3180 and BCHE 3200. Departmental approval.

**BCHE 3200 PRINCIPLES OF BIOCHEMISTRY (3).** LEC. 3. Pr., (BIOL 1010 or BIOL 1020 or BIOL 1030 or BIOL 1027 or BIOL 1037) and (CHEM 2030 or CHEM 2070 or CHEM 2080). Structure and function of biomolecules, enzyme catalysis, processing of genetic information, bioenergetics and metabolism, and regulatory mechanisms in cellular processes.

**BCHE 3201 PRINCIPLES OF BIOCHEMISTRY LABORATORY (1).** LAB. 2. Coreq., BCHE 3200. Fundamental theory and techniques used in the isolation, characterization, and study of biomolecules.

**BCHE/CHEM 5180 BIOCHEMISTRY I (3).** LEC. 3. Pr., CHEM 2080. Fundamentals of metabolism, focusing on the design and regulation of the major catabolic and biosynthetic metabolic pathways. Bioenergetics.

**BCHE/CHEM 5181 BIOCHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, BCHE 5180 or P/C, CHEM 5180. Laboratory techniques required for identification and quantification of compounds of important biochemical classes.

**BCHE/CHEM 5190 BIOCHEMISTRY II (3).** LEC. 3. Pr., BCHE 5180. Fundamentals of metabolism, focusing on the design and regulation of the major catabolic and biosynthetic metabolic pathways.

**BCHE/CHEM 5191 BIOCHEMISTRY II LABORATORY (1).** LAB. 3. Pr., P/C, BCHE 5190 or P/C, CHEM 5190. Laboratory techniques required for partial purification, kinetic studies, and characterization of enzymes and nucleotides from various plants, animals and bacteria.

**BCHE 5250 PLANT METABOLIC PATHWAYS (3).** LEC. 3. Pr., CHEM 2080. Fundamental processes of metabolism specific to plants.

**BCHE/CHEM 6180 BIOCHEMISTRY I (3).** LEC. 3. Pr., CHEM 2080. Fundamentals of the classification, structure, and reactions of the major constituents of living

## Biological Sciences (BIOL)

matter and evaluation of binding phenomena and bioenergetics. Departmental approval.

**BCHE/CHEM 6181 BIOCHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, BCHE 6180 or P/C, CHEM 6180. Laboratory techniques required for identification and quantification of compounds of important biochemical classes.

**BCHE/CHEM 6190 BIOCHEMISTRY II (3).** LEC. 3. Pr., BCHE 6180. Fundamentals of metabolism, focusing on the design and regulation of the major catabolic and biosynthetic metabolic pathways. Departmental approval.

**BCHE/CHEM 6191 BIOCHEMISTRY II LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 6190. Laboratory techniques required for partial purification, kinetic studies, and characterization of enzymes and nucleotides from various plants, animals, and bacteria.

**BCHE 6250 PLANT METABOLISM (3).** LEC. 3. Pr., CHEM 2080. Fundamental processes of metabolism specific to plants.

**BCHE 7200 ADVANCED BIOCHEMISTRY I (3).** LEC. 3. Graduate credit will not be given for both BCHE 6190 and BCHE 7200.

**BCHE 7210 ADVANCED BIOCHEMISTRY II (3).** LEC. 3. Structure and function of macromolecules participating in the flow of molecular information. Graduate credit will not be given for both BCHE 6180 and BCHE 7210. Or equivalent.

**BCHE 7220 PRINCIPLES OF CELLULAR AND MOLECULAR ENZYMOLOGY (3).** LEC. 3. Pr., BCHE 6190 or CHEM 6190 or BCHE 7200 The principles of enzyme chemistry including the physical, chemical, and catalytic properties of enzymes. Departmental approval.

**BCHE 7230 BIOCHEMISTRY OF MACROMOLECULES (3).** LEC. 3. Pr., BCHE 6180 or BCHE 7200. Advanced study of the structure of protein and nucleic acids: DNA replication, RNA transcription and protein synthesis. Departmental approval.

**BCHE 7250 BIOCHEMISTRY OF LIPIDS AND LIPOPROTEINS (3).** LEC. 3. Pr., BCHE 7200. The regulation of lipid and lipoprotein metabolism, role of lipid mediators in signaling pathways and protein modification, assembly and dynamics of lipoproteins and biomembranes. Departmental approval.

**BCHE 7260 BIOINFORMATICS (3).** LEC. 3. Pr., BCHE 7210. Advanced study of main concepts and tools of genomics and proteomics. Departmental approval.

**BCHE 7270 BIOCHEMICAL RESEARCH TECHNIQUES (3-6).** LEC. Pr., BCHE 6190 or CHEM 6190. Modern biochemical laboratory techniques. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**BCHE 7280 TOPICS IN BIOCHEMISTRY (1-3).** LEC. Pr., BCHE 7210. Directed studies in biochemistry. Departmental approval and BCHE 7210 or equivalent. Course may be repeated for a maximum of 3 credit hours.

## Biological Sciences (BIOL)

Dr. Jack Feminella - 844-3906

**BIOL 1000 INTRODUCTION TO BIOLOGY (4).** LEC. 3, LAB. 2. Science Core. Introduction to biological principles relevant to human society. Designed for non-science majors. Credit will not be given for both BIOL 1000 and BIOL 1020 or BIOL 1027.

**BIOL 1001 INTRODUCTION TO BIOLOGY LABORATORY (0).** LAB. Laboratory course for BIOL 1000.

**BIOL 1010 A SURVEY OF LIFE (4).** LEC. 3, LAB. 2. Pr., BIOL 1000 or BIOL 1020 or BIOL 1027 or SCMH 1010. Science Core. Emphasis on contrasting strategies employed by organisms to meet similar biological needs. Credit will not be given for both BIOL 1010 and BIOL 1030 or BIOL 1037.

**BIOL 1011 A SURVEY OF LIFE LABORATORY (0).** LAB. Laboratory course for BIOL 1010.

**BIOL 1020 PRINCIPLES OF BIOLOGY (4).** LEC. 3, LAB. 2. Science Core. Introduction to the physical, chemical, and biological principles common to all organisms. Credit will not be given for both BIOL 1020 and BIOL 1000 or BIOL 1027.

**BIOL 1021 PRINCIPLES OF BIOLOGY LABORATORY (0).** LAB. Coreq., BIOL 1020. Laboratory Course for BIOL 1020.

**BIOL 1027 HONORS BIOLOGY (4).** LEC. 3, LAB. 2. Pr., Honors College. Science Core. Introduction to the physical, chemical, and biological principles common to all organisms. Credit will not be given for both BIOL 1027 and BIOL 1000 or BIOL 1020.

**BIOL 1030 ORGANISMAL BIOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1020 or BIOL 1027. Coreq., BIOL 1031. Science Core. Principles and fundamentals of biology at the organismal level. Credit will not be given for both BIOL 1030 and BIOL 1010 or BIOL 1037.

**BIOL 1031 ORGANISMAL BIOLOGY LABORATORY (0).** LAB. Coreq., BIOL 1030. Laboratory Course by BIOL 1030.

**BIOL 1037 HONORS ORGANISMAL BIOLOGY (4).** LEC. 3, LAB. 2. Pr., Honors College. (BIOL 1020 or BIOL 1027) Science Core. Principles and fundamentals of biology at the organismal level. Credit will not be given for both BIOL 1037 and BIOL 1010 or BIOL 1030. Membership in the Honors College.

**BIOL 2000 MICROBIOLOGY AND PUBLIC HEALTH (4).** LEC. 3, LAB. 1. Pr., BIOL 1000 or (BIOL 1020 or BIOL 1027). Introduction to the science of microbiology with an emphasis on the public health aspects. (Cannot be used to satisfy minor or major requirements in the biological sciences).

**BIOL 2015 MARINE SCIENCE I OCEANOGRAPHY (5).** LEC. 3, LAB. 4. Pr., MATH 1130. An introduction to oceanography that integrates physical, geological, chemical and biological oceanography to provide a multidisciplinary foundation in the fundamentals of marine science. Taught at Gulf Coast Research Laboratory. Departmental approval.

**BIOL 2415 MARINE SCIENCE II: MARINE BIOLOGY (5).** LEC. 3, LAB. 4. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). An overview of biological oceanography with emphasis on organisms, habitats, and fisheries of Mississippi Sound and the Gulf of Mexico. Taught at Gulf Coast Research Laboratory. Departmental approval.

**BIOL 2425 MARINE BIOLOGY (4).** LEC. 4. Pr., BIOL 1030 or BIOL 1037. The invertebrates, vertebrates and marine plants as communities with emphasis on local examples. Taught only at Dauphin Island Sea Lab. Departmental approval.

**BIOL 2445 COASTAL ECOLOGY FOR TEACHERS (4).** LEC. 3, LAB. 2. Provides teachers with a background in basic coastal ecology. Interdisciplinary concepts involving the environment and its conservation. Taught at the Gulf Coast Research Laboratory. Basic science course required for education degree. Departmental approval.

**BIOL 2500 HUMAN ANATOMY AND PHYSIOLOGY I (4).** LEC. 3, LAB. 2. Pr., BIOL 1000 or (BIOL 1020 or BIOL 1027). Study of the structure and function of the human body. First half of two-part sequence with BIOL 2510, concentrating on tissues, muscle, and nervous system.

**BIOL 2510 HUMAN ANATOMY AND PHYSIOLOGY II (4).** LEC. 3, LAB. 2. Pr., BIOL 2500. Study of the structure and function of the human body. second half of two-part sequence with BIOL 2500, concentrating on cardiovascular, respiratory, digestive, urinary, reproductive and endocrine systems.

**BIOL 3000 GENETICS (4).** LEC. 3, LAB. 1. Pr., (BIOL 1020 or BIOL 1027). A contemporary overview of theoretical principles of transmission, population, and molecular genetics. Principles emphasizing use of animal, plant, and microbial models.

**BIOL 3010 COMPARATIVE ANATOMY (4).** LEC. 3, LAB. 3. Pr., BIOL 1030 or BIOL 1037. Evolution and function of craniates and their organ systems.

**BIOL 3020 GENOMIC BIOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1020 or BIOL 1027. An overview of genes, genomes, and genomic and proteomic approaches and methodology. Application of principles of biology at the genomic level. Includes an introduction to bioinformatic approaches to genomic problems in a computer laboratory setting.

**BIOL 3030 EVOLUTION AND SYSTEMATICS (3).** LEC. 3. Pr., BIOL 1030 or BIOL 1037. An introduction to evolutionary processes, classification, of organisms and scientific nomenclature.

**BIOL 3040 BIOLOGY OF MARINE SYSTEMS (3).** LEC. 3. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). Introduction to marine systems and biological investigations of coastal, near shore and open ocean organisms and processes.

**BIOL 3060 ECOLOGY (4).** LEC. 3, LAB. 3. Interactions of organisms with their environments and characteristics of populations, communities, and ecosystems. 8 hours of Biology Departmental approval.

**BIOL 3075 INTRODUCTION TO OCEANOGRAPHY (4).** LEC. 4. Pr., MATH 1150 and CHEM 1030 and PHYS 1500. The physics, chemistry, biology, and geology of the oceans. Taught only at Dauphin Island Sea Lab. Departmental approval.

**BIOL 3100 PLANT BIOLOGY (3).** LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040. Coreq., BIOL 3101. Introduction to the morphology, anatomy, physiology and classification of plants with emphasis on the angiosperms.

**BIOL 3101 PLANT BIOLOGY LABORATORY (1).** LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1041 and P/C, BIOL 3100. Introductory plant biology laboratory on morphology, anatomy, physiology, and classification of plants with emphasis on the angiosperms.

**BIOL 3120 NURSING PATHOPHYSIOLOGY (3).** LEC. 3. Exploration of membrane, muscle and nerve physiology, peripheral and central nervous systems; special consideration of physiological processes involved in cardiology, respiration, the urinary system, digestion, and reproduction.

**BIOL 3200 GENERAL MICROBIOLOGY (4).** LEC. 3, LAB. 2. Pr., CHEM 1030. Introduction to the science of microbiology, emphasizing cell structure, systematics, growth, genetics, and the role in human affairs.

**BIOL 3500 PERSPECTIVES IN IMMUNOLOGY (3).** LEC. 3. Pr., (P/C, BIOL 3000 or P/C, BIOL 3020) and BIOL 3200. Introduction to the cells and components of the immune response with an emphasis on host response to infection and medical immunology.

**BIOL 4000 HISTOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 1030 or BIOL 1037. Morphology and classification of tissues; arrangement of tissues in organs and systems of vertebrate animals.

## Biological Sciences (BIOL)

- BIOL 4010 INVERTEBRATE BIODIVERSITY (4).** LEC. 3, LAB. 3. Pr., BIOL 1030 or BIOL 1037. Survey of the phyla of invertebrates with emphasis on morphology, anatomy, ecology, evolution, and systematics.
- BIOL 4020 VERTEBRATE BIODIVERSITY (4).** LEC. 3, LAB. 3. Pr., BIOL 1030 or BIOL 1037. Ecology and evolution of living vertebrates of the world.
- BIOL 4055 MARINE SCIENCE FOR TEACHERS (3).** LEC. 3. Provides teachers an introduction to the study of marine science and incorporation of marine biology at all grade levels. Taught at Gulf Coast Research Laboratory. Departmental approval.
- BIOL 4100 CELL BIOLOGY (3).** LEC. 3. Pr., CHEM 2070 and BIOL 3000 and (BIOL 1030 or BIOL 1037). Evolution, organization, physiology, molecular biology of cells, membranes, cytoplasm, and organelles. Energy, transport, motility, cell division, signaling, transcription, translation.
- BIOL 4101 CELL BIOLOGY LABORATORY (2).** LAB. 4. Pr., P/C, BIOL 4100. Light/electron microscopy, cell structure, origins of life, centrifugation, protein/nucleic acid electrophoresis, and blotting, motility, DNA purification, chromatography, pH, fluorescence microscopy.
- BIOL 4150 HUMAN GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 4100 and CHEM 2080. Study of the biological interaction of genes, effects of mutation and changes in gene frequency in human populations. Emphasis on molecular approach to study evolutionary changes in human gene pools.
- BIOL 4200 CLINICAL MICROBIOLOGY (4).** LEC. 3, LAB. 4. Pr., BIOL 3200. Isolation, cultivation, identification, classification, and pathogenesis of infectious agents with emphasis on bacteria; includes clinical materials, Eubacteria, Mycoplasmata, Rickettsiae, and Spirochaetes.
- BIOL 4395 MARINE FAUNISTIC ECOLOGY (5).** LEC. 2, LAB. 6. A field survey of animals associated with three habitat types and factors controlling their distribution in the northern Gulf of Mexico. Taught at Gulf Coast Research Laboratory. Departmental approval.
- BIOL 4400 CLINICAL PHYSIOLOGY (3).** LEC. 3. Pr., BIOL 2500. Exploration of membrane, muscle and nerve physiology, peripheral and central nervous systems; special consideration of physiological processes involved in cardiology, respiration, the urinary system, digestion, and reproduction.
- BIOL 4410 VERTEBRATE DEVELOPMENT (5).** LEC. 3, LAB. 4. Pr., BIOL 3000. Morphogenesis and organogenesis of frog, chick, pig, and human from a descriptive and analytical viewpoint.
- BIOL 4425 MARINE FISHERIES MANAGEMENT (4).** LEC. 4. Fisheries management philosophy, objectives, problems, and principles involved in management decisions. Offered at the Gulf Coast Research Laboratory. Departmental approval.
- BIOL 4435 SPECIAL TOPICS IN MARINE SCIENCE (1-6).** LEC. An opportunity for students to study in an area in which GCRL offers no formal course; not research oriented. Taught at Gulf Coast Research Laboratory. Departmental approval. Course may be repeated for a maximum of 6 credit hours.
- BIOL 4445 SPECIAL PROBLEMS IN MARINE SCIENCE (1-6).** LEC. Individualized research-oriented experience. Taught at Gulf Coast Research Laboratory. Departmental approval. Course may be repeated for a maximum of 6 credit hours.
- BIOL 4455 MARINE INVERTEBRATE ZOOLOGY (5).** LEC. 5.
- BIOL 4465 PARASITES OF MARINE ANIMALS (6).** LEC. 3, LAB. 6. Pr., BIOL 5110. A study of the parasites of marine estuarine animals with emphasis on morphology, taxonomy, life histories, and host-parasite relationships. Taught at Gulf Coast Research Laboratory. Departmental approval.
- BIOL 4475 MARINE ICHTHYOLOGY (6).** LEC. 6. Pr., BIOL 1000+ and BIOL 3010. Biology of the major piscine taxa in Mississippi Sound. principles involved in classification and evolutionary relationships of these organisms. Taught at Gulf Coast Research Laboratory. 16 hours including BIOL 3010 and departmental approval.
- BIOL 4485 MARINE ECOLOGY (5).** LEC. 5. Pr., BIOL 1000+ and BIOL 4010. The relationship of marine organisms to their environment and the effects of environment on abundance and distribution on marine organisms. Offered at Gulf Coast Research Laboratory, Ocean Springs, MS. Departmental approval and 16 hours of Biological Science including BIOL 4010.
- BIOL 4495 COMPARATIVE HISTOLOGY OF MARINE ORGANISMS (6).** LEC. 6. Detailed study of the histological organization and its relationships to physiological changes during the life cycle of representative marine organisms. Light and electron microscopy. Taught at Gulf Coast Research Laboratory. Departmental approval.
- BIOL 4515 MARINE INVERTEBRATE ZOOLOGY (4).** LEC. 4. Pr., BIOL 2000+. The natural history, systematics, and morphology of marine invertebrates from the Gulf of Mexico; oriented toward a field and laboratory approach. Participation in extended field trips is part of the course. Taught only at Dauphin Island Sea Lab. Departmental approval.
- BIOL 4525 DOLPHINS AND WHALES (2).** LEC. 2. Pr., BIOL 1030 or BIOL 1037. Classification, anatomy, and ecology of the cetaceans. Taught only at Dauphin Island Sea Lab. Departmental approval.
- BIOL 4535 COASTAL ZONE MANAGEMENT (2).** LEC. 2. Pr., BIOL 1030 or BIOL 1037. Management of shorelines and flood plains, and current legislation. Water quality and ecosystem quality management. Taught only at Dauphin Island Sea Lab. Departmental approval.
- BIOL 4545 COASTAL ORNITHOLOGY (4).** LEC. 4. Pr., BIOL 4020. Coastal and pelagic birds with emphasis on ecology, taxonomy, and distribution. Taught at Dauphin Island Sea Lab. Departmental approval.
- BIOL 4565 MARINE VERTEBRATE ZOOLOGY (4).** LEC. 4. Pr., BIOL 1030 or BIOL 1037. Systematics, zoogeography and ecology of marine fishes, reptiles, and mammals. Taught at Dauphin Island Sea Lab. May not be substituted for BIOL 4020. Departmental approval.
- BIOL 4575 MARINE ECOLOGY (4).** LEC. 4.
- BIOL 4950 UNDERGRADUATE SEMINAR (1).** LEC. 1. Oral presentation and discussion of recent scientific publications from a selected area of biological sciences. One hour is required of all majors. Departmental approval. Course may be repeated for a maximum of 3 credit hours.
- BIOL 4967 HONORS SPECIAL PROBLEMS (1-3).** LEC. Pr., Honors College. Departmental approval and membership in the Honors College. Course may be repeated for a maximum of 3 credit hours.
- BIOL 4970 SPECIAL TOPICS (1-4).** AAB. Instruction and discussion in a selected current topic in Biological Sciences. Departmental approval. Course may be repeated for a maximum of 8 credit hours.
- BIOL 4980 UNDERGRADUATE RESEARCH (2-4).** AAB/IND. Directed research in an area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.
- BIOL 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Undergraduate research and thesis. Course may be repeated for a maximum of 3 credit hours.
- BIOL 5020 DEVELOPMENTAL BIOLOGY (3).** LEC. 3. Pr., BIOL 4100 and BIOL 4410. Consideration of induction, constancy of the genome, path finding by migrating cells, morphogenetic movements, and other developmental processes.
- BIOL 5090 CONSERVATION BIOLOGY (3).** LEC. 3. Pr., BIOL 3060. This course is an overview of ethical, economic and biological aspects of conservation biology at scales ranging from local to global. Credit will not be given for both BIOL 5090 and BIOL 6090.
- BIOL 5110 PARASITOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 1030 or BIOL 1037 or BIOL 2500. Development, identification, host-parasite relationships, and medical significance of parasitic protozoa, helminthes, and arthropods that infect humans, domestic animals and wildlife.
- BIOL 5120 SYSTEMATIC BOTANY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1030 or BIOL 1037). Classification, nomenclature, distribution, systematics, and evolution of vascular plants.
- BIOL 5130 ADVANCED PLANT PHYSIOLOGY (3).** LEC. 3. Pr., BIOL 3100 and CHEM 2080. Coreq., BIOL 5131. Physiological and biochemical processes effecting plant growth and development including water relations, photosynthesis, respiration, and hormones.
- BIOL 5131 ADVANCED PLANT PHYSIOLOGY LABORATORY (1).** LAB. 3. Pr., BIOL 3101 and CHEM 2081 and BIOL 5130. Coreq., BIOL 5130. Laboratory exercises in plant physiology. Including water relations, metabolism and growth, and development.
- BIOL 5140 PLANT ECOLOGY (4).** LEC. 3, LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Exploration of ecological interactions between plants and their environment. Field trips emphasize Southeastern habitats/plant examples. Includes 3-day weekend field trip. Departmental approval.
- BIOL 5150 COMMUNITY ECOLOGY (3).** LEC. 3. Pr., BIOL 3060. Dynamics of ecological communities, including niches, species interactions, succession, island biogeography, biodiversity and food webs. May count BIOL 5150 or BIOL 6150.
- BIOL 5160 FIELD BIOLOGY AND ECOLOGY (3-15).** LEC. 3. Intensive classroom and field studies of an area outside Alabama. Departmental approval and 15 hours of biology. Course may be repeated for a maximum of 15 credit hours.
- BIOL 5190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3).** LEC. 3. Pr., BIOL 4100 and BIOL 5220 and CHEM 2090. Study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic, and biochemical approaches.
- BIOL 5210 MICROBIAL PHYSIOLOGY (3).** LEC. 3. Pr., BIOL 3200 and CHEM 2080. General physiology of microbial cells emphasizing fermentation, respiration, photosynthesis, nitrogen fixation, cell wall synthesis, membranes, and macromolecular synthesis.
- BIOL 5220 INTRODUCTORY MOLECULAR GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 3200. Principles of gene expression including replication, transcription, and translation; structure and regulation of genes; concepts and techniques in recombinant DNA.
- BIOL 5230 VIROLOGY (3).** LEC. 3. Pr., (P/C, BIOL 5220 or P/C, BIOL 6220) or (P/C, BIOL 5260 or P/C, BIOL 6260). Biology of viruses, including structure, entry, replication, assembly and release, pathogenesis, and epidemiology of viral infections. May count BIOL 5230 or BIOL 6230.

**BIOL 5240 ANIMAL PHYSIOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 4100 or CHEM 2070. General overview of the function of the major systems in animals, including evolution and adaptation to specific environments.

**BIOL 5250 MICROBIAL EVOLUTION AND DIVERSITY (4).** LEC. 3, LAB. 2. Pr., BIOL 3000 and BIOL 3200. Introduction to microbial evolutionary history and theory, and survey of microbial diversity. Credit will not be given for both BIOL 5250 and BIOL 6250.

**BIOL 5260 PROKARYOTIC MOLECULAR GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 3200. Molecular principles of bacterial genetics including gene structure, genetic organization, regulation of gene expression, acquisition and loss of genes leading to microbial evolution. Course will not be given for both BIOL 5260 and BIOL 6260.

**BIOL 5270 HOST-MICROBE INTERACTIONS (3).** LEC. 3. Pr., BIOL 3200 and (BIOL 5220 or BIOL 5260). This course will explore interactions between microbes and their hosts including plants, insects and animals. Credit will not be given for both BIOL 5270 and 6270.

**BIOL 5280 GENETHICS (3).** LEC. 3. Pr., BIOL 3000. Twenty-first century biotechnology and related ethical issues, including human cloning, stem cells, neuroenhancement, age retardation, genetic enhancement, and nanobiology. May count BIOL 5280 or 6280.

**BIOL 5300 PLANT ANATOMY AND DEVELOPMENT (4).** LEC. 3, LAB. 4. Pr., BIOL 3100. Investigation of the various levels of plant organization from subcellular to organ through use of light and scanning electron microscopes.

**BIOL 5320 PLANT GENE EXPRESSION (4).** LEC. 4. Pr., BIOL 3100. Genetic expression of genetic elements in plants from the recent literature. Departmental approval.

**BIOL 5340 PROTOZOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3000. Life history, identification, cell biology, and evolution of free-living and parasitic protozoa of the major groups. Laboratory includes techniques for microscopy.

**BIOL 5350 BEHAVIORAL ECOLOGY (3).** LEC. 3. Pr., BIOL 3030 and BIOL 3060. Evolution of behaviors via natural, sexual, and kin selections; evolutionary influences on social groups, mating systems, cooperative breeding, and other interactions.

**BIOL/FISH 5360 POPULATION ECOLOGY (3).** LEC. 3. Pr., BIOL 3060 and (MATH 1610 or MATH 1617). Quantitative study of populations, including life tables, Leslie matrices, exponential and logistic models, meta populations, and life-history theory. Departmental approval.

**BIOL 5370 MOLECULAR ECOLOGY (3).** LEC. 3. Pr., BIOL 3000 and BIOL 3030.

**BIOL 5375 MARINE SCIENCE FOR ELEMENTARY SCHOOL TEACHERS (3).** LEC. 3. Pr., BIOL 0000+. Principle-centered training in a broad spectrum of subjects relating marine science to health, reading, social studies, language, arithmetic, science, and art. Taught at Gulf Coast Research Laboratory. Departmental approval and 6 hours in basic biology science.

**BIOL 5380 GENERAL ICHTHYOLOGY (4).** LEC. 3, LAB. 4. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes with an overview of ecology, behavior, biology, and conservation of fishes.

**BIOL 5415 SALT MARSH PLANT ECOLOGY (4).** LEC. 2, LAB. 2. Pr., BIOL 3100. The plant ecology of salt marshes.

**BIOL 5425 MARINE BOTANY (4).** LEC. 4.

**BIOL 5435 COASTAL VEGETATION (4).** LEC. 2, LAB. 2. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3100. Study of different coastal ecosystems with an emphasis on plant vegetation.

**BIOL 5455 MARSH ECOLOGY (4).** LEC. 4.

**BIOL 5465 MARINE MICROBIOLOGY (5).** LEC. 3, LAB. 2. Pr., BIOL 3200 and BIOL 4600. The role of microorganisms in marine environments. Departmental approval.

**BIOL 5475 OCEANOLOGY OF THE GULF OF MEXICO (3).** LEC. 2, LAB. 2. A descriptive study of the oceanology of the Gulf of Mexico and adjacent waters including coastal zone, continental shelf, and deep ocean. Summer. Departmental approval.

**BIOL 5495 MARINE PROTOZOLOGY (3).** LEC. 2, LAB. 3. Treatment of the major groups of protists from marine habitats including their taxonomy, structure, ecology, and methods of studying. Introductory Biology.

**BIOL/CMBL 5500 IMMUNOLOGY (3).** LEC. 3. Pr., BIOL 3200 and BIOL 3000. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effect or mechanisms, and medical immunology.

**BIOL/CMBL 5501 IMMUNOLOGY LAB (2).** LAB. 4. Pr., P/C, BIOL 5500. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions, and antibody production.

**BIOL 5510 BIOGEOGRAPHY (3).** LEC. 3. Patterns and processes associated with the distribution of living and fossil organisms.

**BIOL 5521 GENE EXPRESSION AND RECOMBINANT DNA LABORATORY (2).** LEC. 2, LAB. 4. Pr., P/C, BIOL 5220 Laboratory experiences demonstrating concepts and techniques in recombinant DNA.

**BIOL 5525 MARINE BEHAVIORAL ECOLOGY (4).** LEC. 3, LAB. 3. Study of animal behavior and the influence by and interaction with the environment and the ecological and evolutionary significance of these behaviors. Summer. Vertebrate and Invertebrate Zoology.

**BIOL 5535 MARINE CONSERVATION BIOLOGY (4).** LEC. 3, LAB. 3. general or Marine Ecology course. Examination of conservation biology based on previous study of marine ecology. Summer. General or Marine Ecology course.

**BIOL 5550 WETLAND BIOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3060. Biology of world wetland habitats. Field trips, paper, and presentation required.

**BIOL 5600 MAMMALIAN PHYSIOLOGY (6).** LEC. 5, LAB. 3. Pr., BIOL 1030 or BIOL 1037 or BIOL 2500 and CHEM 2080. An in-depth investigation of the physiology of the major mammalian organ systems.

**BIOL 5605 MAMMALIAN PHYSIOLOGY (6).** LEC. 5, LAB. 3. To give students a detailed overview of human physiology. Students will learn the normal function of the body systems through reading, lecture and discussion.

**BIOL 5650 ETHOLOGY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Animal behaviors, analysis of their adaptive value, development, and evolution.

**BIOL 5660 FOOD MICROBIOLOGY (5).** LEC. 3, LAB. 6. Pr., BIOL 3200. The role of microorganisms in food production and food spoilage with basic training in the microbiological analysis food.

**BIOL 5700 APPLIED AND ENVIRONMENTAL MICROBIOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 3200. Introduction to the ecology, systematics, interrelationships, and role of micro-organisms in geochemical cycles, bioremediation and pharmaceutical production.

**BIOL 5740 HERPETOLOGY (4).** LEC. 3, LAB. 3. Ecology and evolution of living amphibians and reptiles of the world.

**BIOL 5750 ORNITHOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3030 and BIOL 3060. Taxonomy, evolution, ecology, and behavior of birds.

**BIOL 5760 MAMMALOLOGY (4).** LEC. 3, LAB. 3. Characteristics, origins, ecology, behavior, reproduction, physiology, and diversity of mammals. Labs include survey or current literature, field trips, data analysis, and report preparation. Departmental approval.

**BIOL 6020 DEVELOPMENTAL BIOLOGY (3).** LEC. 3. Pr., BIOL 4100 and BIOL 4410. Consideration of induction, constancy of the genome, path finding by migrating cells, morphogenetic movements, and other developmental processes.

**BIOL 6090 CONSERVATION BIOLOGY (3).** LEC. 3. Pr., BIOL 3060. This course is an overview of ethical, economic and biological aspects of conservation biology at scales ranging from local to global. Credit will not be given for both BIOL 5090 and BIOL 6090.

**BIOL 6110 PARASITOLOGY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) or BIOL 2500. Development, identification, host-parasite relationships, and medical significance of parasitic protozoa, helminthes, and arthropods that infect humans, domestic animals, and wildlife.

**BIOL 6120 SYSTEMATIC BOTANY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1030 or BIOL 1037). Classification, nomenclature, distribution, systematics, and evolution of vascular plants.

**BIOL 6130 ADVANCED PLANT PHYSIOLOGY (3).** LEC. 3. Pr., BIOL 3100 and BIOL 2080. Coreq., BIOL 6131. Physiological and biochemical processes effecting plant growth and development including water relations, photosynthesis, respiration, and hormones.

**BIOL 6131 ADV PLANT PHYSIOLOGY LAB (1).** LAB. 3. Pr., BIOL 3101 and CHEM 2081. Coreq., BIOL 6130. Laboratory exercises in plant physiology. Including water relations, metabolism, and growth and development.

**BIOL 6140 PLANT ECOLOGY (4).** LEC. 3, LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Exploration of ecological interactions between plants and their environment. Field trips emphasize Southeastern habitats/plant examples. Includes 3-day weekend field trip. Departmental approval.

**BIOL 6150 COMMUNITY ECOLOGY (3).** LEC. 3. Pr., BIOL 3060. Dynamics of ecological communities, including niches, species interactions, succession, island biogeography, biodiversity and food webs. May count BIOL 5150 or BIOL 6150.

**BIOL 6160 FIELD BIOLOGY AND ECOLOGY (3-15).** LEC. 3. Pr., BIOL 0000+. Intensive classroom and field studies of an area outside Alabama. Course may be repeated for a maximum of 15 credit hours.

**BIOL/CMBL 6190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3).** LEC. 3. Pr., BIOL 4100 and BIOL 5220 and CHEM 2080. Study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic, and biochemical approaches.

**BIOL 6210 MICROBIAL PHYSIOLOGY (3).** LEC. 3. Pr., BIOL 3200 and CHEM 2070. General physiology of microbial cells emphasizing fermentation, respiration, photosynthesis, nitrogen fixation, cell wall synthesis, membranes, and macromolecular synthesis.

**BIOL 6220 INTRODUCTORY MOLECULAR GENETICS (4).** LEC. 4. Pr., BIOL 3000 and BIOL 3200. Advanced principles of gene expression including replication,

transcription and translation; structure and regulation of genes; detailed concepts and techniques in recombinant DNA. Credit will not be given for both BIOL 6220 and CMBL 6220.

**BIOL/CMBL 6230 VIROLOGY (3).** LEC. 3. Pr., (P/C, BIOL 5220 or P/C, BIOL 6220) or (P/C, BIOL 5260 or P/C, BIOL 6260). Biology of viruses, including structure, entry, replication, assembly and release, pathogenesis, and epidemiology of viral infections. May count BIOL 5230 or BIOL 6230.

**BIOL 6240 ANIMAL PHYSIOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 4100 or CHEM 2070. General overview of the function of the major systems in animals, including evolution and adaptation to specific environments.

**BIOL 6250 MICROBIAL EVOLUTION AND DIVERSITY (4).** LEC. 3, LAB. 2. Pr., BIOL 3000 and BIOL 3200. Introduction to microbial evolutionary history and theory, and survey of microbial diversity. Credit will not be given for both BIOL 5250 and BIOL 6250.

**BIOL 6260 PROKARYOTIC MOLECULAR GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 3200. Molecular principles of bacterial genetics including gene structure, genetic organization, regulation of gene expression, acquisition and loss of genes leading to microbial evolution. Course will not be given for both BIOL5260 and BIOL 6260.

**BIOL 6270 HOST-MICROBE INTERACTIONS (3).** LEC. 3. Pr., BIOL 3200 and (BIOL 5200 or BIOL 5260). This course will explore interactions between microbes and their hosts including plants, insects and animals. Credit will not be given for both BIOL 5270 and BIOL 6270.

**BIOL 6280 GENETHICS (3).** LEC. 3. Pr., BIOL 3000. Twenty-first century biotechnology and related ethical issues, including human cloning, stem cells, neuro enhancement, age retardation, genetic enhancement, and nanobiology. May count BIOL 5280 or 6280.

**BIOL 6300 PLANT ANATOMY AND DEVELOPMENT (4).** LEC. 2, LAB. 4. Pr., BIOL 6130. The study of the structure and ontogeny of plant cells, tissues, and organs. Fall.

**BIOL 6320 PLANT GENE EXPRESSION (4).** LEC. 4. Pr., BIOL 5320. Genetic expression of genetic elements in plants from the recent literature. Credit will not be given for both BIOL 6320 and CMBL 6320. Departmental approval.

**BIOL 6340 PROTOZOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3000. Life history, identification, cell biology, and evolution of free-living and parasitic protozoa of the major groups. Laboratory includes techniques for microscopy.

**BIOL 6350 BEHAVIORAL ECOLOGY (3).** LEC. 3. Pr., BIOL 3030 and BIOL 3060. Evolution of behaviors via natural, sexual, and kin selections; evolutionary influences on social groups, mating systems, cooperative breeding, and other interactions.

**BIOL 6360 POPULATION ECOLOGY (4).** LEC. 4. Pr., BIOL 3060. Quantitative study of populations, including life tables, Leslie matrices, exponential and logistic models, meta populations, and life-history theory. Departmental approval.

**BIOL 6370 MOLECULAR ECOLOGY (3).** LEC. 3. Pr., BIOL 3000 and BIOL 3060. General overview of the concepts and techniques regarding the application of molecular variation in answering questions pertaining to populations and communities of organisms. Credit will not be given for both BIOL 5370 and BIOL 3270.

**BIOL 6375 MARINE SCIENCE FOR ELEMENTARY SCHOOL TEACHERS (3).** LEC. 3. Principle-centered training in a broad spectrum of subjects relating marine science to health, reading, social studies, language, arithmetic, science, and art. Taught at Gulf Coast Research Laboratory. Departmental approval and 6 hours in basic biological science.

**BIOL/CMBL 6380 GENERAL ICHTHYOLOGY (4).** LEC. 3, LAB. 4. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes with an overview of ecology, behavior, biology, and conservation of fishes.

**BIOL 6415 SALT MARSH PLANT ECOLOGY (4).** LEC. 2, LAB. 2. Pr., BIOL 3100. The plant ecology of salt marshes.

**BIOL 6425 MARINE BOTANY (4).** LEC. 4.

**BIOL 6435 COASTAL VEGETATION (4).** LEC. 2, LAB. 2. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3100. Study of different coastal ecosystems with an emphasis on plant vegetation.

**BIOL 6455 MARSH ECOLOGY (4).** LEC. 4.

**BIOL 6465 MARINE MICROBIOLOGY (5).** LEC. 3, LAB. 2. Pr., BIOL 3200 and BIOL 4600. The role of microorganisms in marine environments. Departmental approval.

**BIOL 6475 OCEANOLOGY OF THE GULF OF MEXICO (3).** LEC. 2, LAB. 2. A descriptive study of the oceanology of the Gulf of Mexico and adjacent waters including coastal zone, continental shelf, and deep ocean. Summer. Departmental approval.

**BIOL 6495 MARINE PROTOZOLOGY (3).** LEC. 2, LAB. 3. Treatment of the major groups of protists from marine habitats including their taxonomy, structure, ecology, and methods of studying.

**BIOL/CMBL 6500 IMMUNOLOGY (3).** LEC. 3. Pr., BIOL 3200 and BIOL 3000. Coreq., BIOL 6501. The cellular and molecular basis of the immune response,

including antigen presentation, immunogenetics, effect or mechanisms, and medical immunology.

**BIOL/CMBL 6501 IMMUNOLOGY LABORATORY (2).** LAB. 4. Pr., BIOL 5500 or BIOL 6500. Coreq., BIOL 6500. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions, and antibody production.

**BIOL 6510 BIOGEOGRAPHY (3).** LEC. 3. Patterns and processes associated with the distribution of living and fossil organisms. Departmental approval.

**BIOL/CMBL 6521 GENE EXPRESSION AND RECOMBINANT DNA LABORATORY (2).** LEC. 2, LAB. 4. Pr., P/C, BIOL 5220 or P/C, BIOL 6220. Laboratory experiences demonstrating concepts and techniques in recombinant DNA.

**BIOL 6525 MARINE BEHAVIORAL ECOLOGY (4).** LEC. 3, LAB. 3. Study of animal behavior and the influence by and interaction with the environment and the ecological and evolutionary significance of these behaviors. Vertebrate and Invertebrate Zoology.

**BIOL 6535 MARINE BEHAVIORAL ECOLOGY (4).** LEC. 3, LAB. 3. Examination of conservation biology based on previous study of marine ecology. General or Marine Ecology course.

**BIOL 6550 WETLAND BIOLOGY (4).** LEC. 4, LAB. 3. Pr., BIOL 3060. Biology of world wetland habitats. Field trips, research project, presentation, and paper discussion required.

**BIOL 6600 MAMMALIAN PHYSIOLOGY (6).** LEC. 5, LAB. 3. Pr., (BIOL 1030 or BIOL 1037 or BIOL 2500) and CHEM 2080. An in-depth investigation of the physiology of the major mammalian organ systems.

**BIOL 6650 ETHOLOGY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Animal behaviors, analysis of their adaptive value, development, and evolution.

**BIOL 6660 FOOD MICROBIOLOGY (5).** LEC. 3, LAB. 2. Pr., BIOL 3200. The role of microorganisms food production and food spoilage with basic training in the microbiological analysis of food.

**BIOL 6700 APPLIED AND ENVIRONMENTAL MICROBIOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 3200. An advanced treatment of bacteria comprising the Kingdom Prokaryotae, emphasizing ecology, systematics, interrelationships, geochemical cycles, and bioremediation.

**BIOL 6740 HERPETOLOGY (4).** LEC. 3, LAB. 3. Ecology and evolution of living amphibians and reptiles of the world.

**BIOL 6750 ORNITHOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3030 and BIOL 3060. An intensive investigation of the current literature and relevant research dealing with birds. Departmental approval.

**BIOL 6760 MAMMALOLOGY (4).** LEC. 3, LAB. 3. Characteristics, origins, ecology, behavior, reproduction, physiology, and diversity of mammals. Labs include survey or current literature, fieldtrips, data analysis and report preparation. Departmental approval.

**BIOL 7000 ADVANCED PARASITOLOGY (3).** LEC. 3. Pr., BIOL 6110 or BIOL 5110. Interactions of organisms with their environments and characteristics of populations, communities, and ecosystems. 8 hours of Biology Departmental approval.

**BIOL 7010 FUNDAMENTALS OF TEACHING BIOLOGY (1).** LEC. 1. SU. Course may be repeated for a maximum of 6 credit hours.

**BIOL/FISH 7030 ADVANCED ICHTHYOLOGY (6).** LEC. 6, LAB. 32. Pr., BIOL 6380 or FISH 6380. Survey of the biodiversity of freshwater fishes in the southeastern United States through intensive field trips and sampling. Credit will not be given for both BIOL 7030 and FISH 7030.

**BIOL 7060 ADVANCED MAMMALOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 6760. Current literature in mammalogy, collections management, and professional aspects of mammalogy. Labs include preparing specimens, curating research collections, fieldtrips, library work, data analysis, and report preparation.

**BIOL 7125 COASTAL ECOSYSTEMS DYNAMICS (2).** LEC. 2. Investigation of the basic principles of ecosystem structure and function. Biological Oceanography, Advanced Marine Ecology, Fisheries Oceanography recommended.

**BIOL 7160 SYSTEMATIC ICHTHYOLOGY (3).** LEC. 3. Pr., BIOL 6380. The principles of systematics and their application to the study of the evolution of fishes. Emphasizes individual and group work with faunistic literature and museum material.

**BIOL 7170 POPULATION GENETICS (3).** LEC. 3. Pr., BIOL 3000. Examination of the theories relating to maintenance of variation in natural populations of plants and animals.

**BIOL 7190 COMPARATIVE PHYSIOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 6240. Evolution of physiological and biochemical systems in invertebrates and lower vertebrates and adaptations to specific environments. Departmental approval.

**BIOL/CMBL 7200 EVOLUTIONARY BIOLOGY (3).** LEC. 3. Pr., BIOL 3000 and BIOL 3200. Topics of current interest in evolution. Readings and presentation required.

**BIOL 7225 FIELD MARINE SCIENCE - MAINE (2).** LEC. 1, LAB. 4. Field study in Maine emphasizing rocky intertidal, kelp bed, and eel grass habitats.

**BIOL/CMBL 7270 ULTRASTRUCTURE PLANT CELLS AND MICROBES (5).** LEC. 3, LAB. 4. Theory and practice of transmission and scanning electron microscopy and their applications to the biological sciences. Credit will not be given for both BIOL 7270 and CMBL 7270. Spring. Departmental approval.

**BIOL 7280 PLANT HORMONES (2).** LEC. 2. Pr., BIOL 6130. Synthesis, physiology, and mode of action of the major plant hormones including abscisic acid, auxins, cytokinins, ethylene, and gibberellins.

**BIOL/CMBL 7290 EVOLUTIONARY GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 6170. The role of population processes as mechanisms for evolution; and evolution at the molecular level. Credit will not be given for both BIOL 7290 and CMBL 7290. Departmental approval.

**BIOL/CMBL 7330 MOLECULAR BIOLOGY OF PLANT DEVELOPMENT (2).** LEC. 2. Pr., BIOL 6130 and BIOL 7280. Physiological, biochemical, and molecular aspects of plant growth and development. Credit will not be given for both BIOL 7330 and CMBL 7330. Departmental approval.

**BIOL 7340 WATER RELATIONS AND ENVIRONMENTAL STRESS (2).** LEC. 2.

**BIOL 7370 STREAM ECOLOGY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Physical, chemical, and biological aspects of stream ecosystems emphasizing effects of natural environmental factors and human influences on stream biota, and quantitative methods used to study stream ecology.

**BIOL/CMBL 7380 ECOLOGY AND MANAGEMENT OF RIVERINE SYSTEMS (4).** LEC. 3, LAB. 3. Pr., BIOL 7370. River systems within a landscape ecology and ecosystem management context. Laboratory sessions stress techniques for assessment and management.

**BIOL/CMBL 7440 ADVANCED CELL BIOLOGY (3).** LEC. 3. Pr., BIOL 4100. Examination of current areas of research in cell and developmental biology by directed reading and discussion. Credit will not be given for both BIOL 7440 and CMBL 7440.

**BIOL 7490 PHYSIOLOGICAL ECOLOGY (3).** LEC. 3. Pr., BIOL 3060. A study of the physiological adaptations that allow animals to survive in unusual environments. A course in ecology.

**BIOL 7515 OCEANOLOGY OF THE GULF OF MEXICO (3).** LEC. 3.

**BIOL 7530 ADVANCED SYSTEMATIC BOTANY (3).** LEC. 3. Morphological and molecular approaches to modern systematics of plants.

**BIOL 7540 PROFESSIONAL ASPECTS OF BIOLOGY (3).** LEC. 3. Instruction on practical aspects of a career in biological sciences. Departmental approval.

**BIOL 7560 PLANT/ANIMAL INTERACTIONS (3).** LEC. 3. Pr., BIOL 3100 and BIOL 3060. Overview of ecological and evolutionary interrelationships between animals and plants, including pollination biology, dispersal ecology, carnivory, and plant-herbivore interactions. Departmental approval.

**BIOL 7620 MICROBIOLOGY OF EPIDEMICS (3).** LEC. 3. Pr., BIOL 4200. Epidemics of communicable disease outbreaks are analyzed according to the hosts, modes of transmission, environment, and pathogenesis of the agents. Departmental approval.

**BIOL 7705 TROPICAL BIOLOGY: ECOLOGICAL APPROACH (8).** LEC. 4, LAB. 12. Pr., BIOL 6000+. An in-depth introduction to the principles of ecology in the tropics. Orientation and introductory lecture in San Jose, Costa Rica, followed by field work during an 8 week period. 15 hours of graduate level biological science.

**BIOL 7715 TROPICAL AGRO ECOLOGY (8).** LEC. 4, LAB. 12. Pr., BIOL 6000+. Application of ecological principles to tropical agricultural systems with emphasis on research training. Orientation in San Jose, Costa Rica followed by visits to 3 main habitats.

**BIOL/CMBL 7720 PROKARYOTIC GENE REGULATION (3).** LEC. 3. Pr., BIOL 6210 and (BIOL 6180 or CHEM 6180). Discussion of gene expression in bacteria using the current literature.

**BIOL 7950 MASTERS THESIS SEMINAR (1).** LEC. 1. SU. Oral presentation and discussion of research in the field of specialization. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

**BIOL/CMBL 7960 SPECIAL PROBLEMS (1-4).** LEC. Pr., P/C, BIOL 6220. Oral presentation and discussion of recent scientific publications from a selected area molecular biology. Credit will not be given for both BIOL 7960 and CMBL 7960. Course may be repeated for a maximum of 4 credit hours.

**BIOL 7970 SPECIAL TOPICS (1-4).** AAB. Instruction and discussion in a selected current topic in botany, microbiology, molecular biology, or zoology. A different topic for advanced study will be selected each semester this course is offered. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**BIOL 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**BIOL 8950 DOCTORAL SEMINAR (1).** SEM. 1. SU. Oral presentation and discussion of research in the field of specialization. Course may be repeated for a maximum of 3 credit hours.

**BIOL 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Bourse may be repeated with change in topic. Course may be repeated with change in topics.

## Building Science (BSCI)

Dr. Richard Burt - 844-4518

**BSCI 1100 HISTORY AND INTRODUCTION TO CONSTRUCTION (3).** LEC. 3. Overview of the construction industry, practices, and careers and the development and use of construction materials and methods in Western civilization from Greece to the present time.

**BSCI 1200 WORKING DRAWINGS AND SPECIFICATIONS (3).** LEC. 2, LAB. 2. Graphic communication in construction; reading and interpreting working drawings, specifications, and shop drawings for use in construction estimating and administration.

**BSCI 2300 MATERIALS, METHODS AND EQUIPMENT I (3).** LEC. 3. An overview of the materials, methods, and construction equipment used in the construction of residential and light commercial construction.

**BSCI 2350 MATERIALS, METHODS AND EQUIPMENT II (3).** LEC. 3. Pr., BSCI 2300 An overview of the material, methods, and construction equipment used in the construction of heavy commercial construction.

**BSCI 2400 STRUCTURES I (3).** LEC. 3. Pr., PHYS 1500 or PHYS 1600 and (MATH 1150 or MATH 1610 or MATH 1617). Principles of mechanics and material behavior related to building structures. Includes: force systems, frame analysis, section properties, stress, and basic design and structural elements.

**BSCI 3110 ENVIRONMENTAL CONTROL II (2).** LEC. 2. Pr., BSCI 3100. Survey of the effects of climate, design, materials, and systems on the energy consumption and human environment of buildings. Alternative energy sources are also included.

**BSCI 3300 FIELD SURVEYING (2).** LEC. 1, LAB. 6. Surveying techniques, construction layout, use of equipment, and dimensional controls for buildings. Surveying camp, a concentrated, 10 working day course held during breaks.

**BSCI 3400 STRUCTURES II (3).** LEC. 3. Pr., BSCI 2400. Primary and secondary member design, connection design, temporary bracing/shoring, and steel shop drawing review.

**BSCI 3450 STRUCTURES III (3).** LEC. 3. Pr., BSCI 3400. Introduction to the design of reinforced concrete and related formwork including beams, columns, slabs, footings, retaining walls, and pre-stressed members.

**BSCI 3500 CONSTRUCTION INFORMATION TECHNOLOGY (3).** LEC. 1, LAB. 4. Exploration of information technology and information management in construction. Problem solving using beginning and advanced techniques in spreadsheets, databases, presentation software, and many forms of digital communication.

**BSCI 3550 CONSTRUCTION INFORMATION TECHNOLOGY II (3).** LEC. 2, LAB. 1. Pr., BSCI 3500 Exploration of digital graphics technology in construction; Communication and problem solving using beginning and advanced techniques in digital graphics.

**BSCI 3600 PROJECT CONTROLS I (4).** LEC. 3, LAB. 3. Introduction to estimating in construction and skill competency for quantity survey of divisions 1-16. Students perform a complete take-off, pricing, and bid preparation for a small commercial construction project.

**BSCI 3650 PROJECT CONTROLS II (4).** LEC. 3, LAB. 2. Pr., BSCI 3600. Advance the skills gained in BSCI 3600. Estimate and bid a commercial project using estimating and takeoff software, an introduction to project management procedures utilizing the bid project.

**BSCI 3700 CONSTRUCTION SAFETY HOISTING (3).** LEC. 3. Pr., BSCI 3600. Introduction to safety management in construction including risk reduction, lift planning, operations, and rigging. Students earn 10 hour OSHA certification through the detailed coverage of code requirements.

**BSCI 3840 SUSTAINABLE ENERGY DESIGN (3).** LEC. 2, LAB. 6. Pr., BSCI 3110. Environmentally conscious/green energy use in building design. Course includes lectures. Primarily a project-based course.

**BSCI 3910 EXPERIMENTAL LEARNING (3).** LEC. 3. SU. Requires daily log and employer certification. Departmental approval.

**BSCI 4200 RESIDENTIAL CONSTRUCTION (3).** LEC. 3. Provides an overview of residential construction and development practices and professional issues including: local ordinances and codes, land use law, financing practices, architect-builder relationship, spec homes vs. custom homes, etc.

**BSCI 4300 COMBINED ESTIMATING AND SCHEDULING FOR DESIGNERS (3).** LEC. 3. Provides an overview of estimating and project planning practices and techniques which relate to interactions between the architect and constructor. Includes: sources of project costs, conceptual estimating, value engineering, CPM scheduling, cost of acceleration and delays, change order, etc.

**BSCI 4400 CONSTRUCTION STRUCTURES (2).** LEC. 2. Pr., BSCI 4600. Temporary construction methods and design principles to insure stability of structures during all phases of the construction process. Includes: concrete formwork, trench shoring, temporary bracing, rigging, and materials handling.

**BSCI 4600 PROJECT CONTROLS III (4).** LEC. 3, LAB. 1. Pr., BSCI 3650. Detailed development of project management and project administration skills including

resource scheduling, logic, computerized scheduling applications, resource scheduling, change management, project documentation, billing, cost control, QA/QC techniques, and site utilization planning.

**BSCI 4700 BUILDING EQUIPMENT (3).** LEC. 3. Pr., BSCI 3650. Overview of plumbing, mechanical, and electrical systems in buildings. Basic design concepts are covered with emphasis on the management and quality control of system installation during the construction process.

**BSCI 4750 SOILS EARTHMOVING EQUIPMENT (2).** LEC. 2. Pr., BSCI 3650. Introduction to properties and testing of soils encountered on a jobsite.

**BSCI 4800 CONTRACTING BUSINESS (3).** LEC. 3. Pr., BSCI 3650. Introduction to the organization and management of construction companies. Includes issues such as business planning, operations management, insurance, bonding, construction finance, employment law, etc.

**BSCI 4850 BUSINESS AND CONSTRUCTION LAW (3).** LEC. 3. Pr., BSCI 4600. Introduction to the legal environment of business in the United States with emphasis on contract law and liability issues for construction companies. Course includes legal research, claims avoidance, claims documentation, and alternative dispute resolution.

**BSCI 4920 BUSINESS INTERNSHIP (1-3).** INT. SU. Pr., ACCT 2110 and ECON 2020 and ECON 2030 and FINC 3610 and MKTG 3310 and MNGT 3100. Internship option for students to gain work experience who seek general or free elective credit. 2.2 GPA, approval of instructor prior to internship, and completion or current enrollment in two or more of the following: ACCT 2110, ECON 2020, ECON 2030, FINC 3610, MNGT 3100, MKTG 3310.

**BSCI 4960 SPECIAL PROBLEMS (1-5).** IND. Special problems in construction topics. Course may be repeated for a maximum of 5 credit hours.

**BSCI 4990 BUILDING SCIENCE THESIS (4).** LAB. 12. Individual project demonstrating mastery of curriculum content through the application of skills/knowledge to a theoretical construction company and project. Requires a written thesis and oral defense of work.

**BSCI 5840 MULTI-CULTURAL ISSUES IN CONS (3).** LEC. 3.

**BSCI 5960 SPECIAL PROBLEMS (1-5).** LEC. Special problems in construction topics. Offered only at the discretion of the department head. This course may not be used to replace any required Building Science course. Departmental approval.

**BSCI 5970 SPECIAL PROBLEMS (1-5).** AAB. Special problems in construction topics. Offered only at the discretion of the department head. This course may not be used to replace any required Building Science course. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

**BSCI 6840 MULTI-CULTURAL ISSUES IN CONSTRUCTION LABOR (3).** LEC. 3.

**BSCI 6960 SPECIAL PROBLEMS IN CONSTRUCTION (3).** LEC. 3. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables. Course may be repeated for a maximum of 3 credit hours. Departmental approval.

**BSCI 6970 SPECIAL PROBLEMS IN CONSTRUCTION (1-3).** LAB. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**BSCI 7010 CONSTRUCTION LABOR AND PRODUCTIVITY (3).** LEC. 3. Construction labor issues, productivity measurement, and productivity improvement in the construction industry. Includes reading, research, and an out of class project. Departmental approval.

**BSCI 7020/7026 INTEGRATED BUILDING PROCESSES I (3).** LEC. 3. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability.

**BSCI 7030/7036 CONSTRUCTION INFORMATION MANAGEMENT (3).** LEC. 3. Applications of advanced information technology in construction.

**BSCI 7040/7046 INTEGRATED BUILDING PROCESSES II (3).** LEC. 3. Construction project delivery, from pre-construction service through ownership. Topics include project management, pre-construction services, pre-planning, procurement, site utilization, subcontracts, commissioning, closeout, building operation, and long-term ownership. Departmental approval.

**BSCI 7050/7056 EXECUTIVE ISSUES IN CONSTRUCTION (3).** LEC. 3. Construction industry executives will present 6 to 10 topics that represent a cross-section of significant management issues.

**BSCI 7060 RESEARCH METHODS IN BUILDING SCIENCE (3).** LEC. 3. A study of the academic research process, with an emphasis on defining research problems in construction and the development of a research proposal.

**BSCI 7100/7106 GRADUATE ELECTIVE IN PROJECT MANAGEMENT: PROJECT MANAGEMENT AND SCHEDULING (3).** LEC. 3. This course develops advanced student knowledge and skills in construction business facets such as delivery, contracts and financial management; and develops tactile skills in producing advanced construction schedules in current software applications. Credit will not be given for both BSCI 7100 and BSCI 7406. Course may be repeated with change in topics.

**BSCI 7200 ELECTIVES IN CONSTRUCTION LABOR (3).** LEC. 3. Special course offerings related to construction labor topics. Departmental approval. Course may be repeated with change in topics.

**BSCI 7300 ELECTIVES IN INFORMATION TECHNOLOGY AND INNOVATION (3).** LEC. 3. Special course offerings related to information technology, innovation, and robotics in construction. Departmental approval. Course may be repeated with change in topics.

**BSCI 7900 DIRECTED READING IN CONST (1-3).** IND. Individually proposed exploration of a construction industry related topic not covered in existing course offerings. Students must prepare a written proposal of the topic. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**BSCI 7950 GRADUATE SEMINAR (1).** SEM. 1. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability. Course may be repeated for a maximum of 3 credit hours.

**BSCI 7980/7986 CAPSTONE PROJECT (3).** LAB. 6. Independent exploration of an approved topic with final written report of findings and an oral defense of the work. Specific capstone project requirements are established by the supervising committee and vary based on the chosen topic. Departmental approval.

#### DESIGN AND CONSTRUCTION PROCESS (DBLD)

**DBLD 5510 DESIGN AND CONSTRUCTION PROCESS (3).** LEC. 3. Identification and balancing of architectural and urban design issues, tools and processes used by professional construction managers, with emphasis on collaborative aspects and their impact on efficiency.

**DBLD 5610 DESIGN BUILDING STUDIO (7).** LEC. 7. Pr., ARCH 4020. First of three-studio progression. Integrated project delivery approach to design practice, with emphasis on development of facility with the design technologies and strategies and digital tools employed in advanced practice. Departmental approval.

**DBLD 5620 DESIGN CONSTRUCTION STUDIO (6).** LEC. 6. Pr., ARCH 4020. Second of three-studio progression. Skills associated with formation and schematic design phases of architectural project, with emphasis on rigorous design research methods, program development, and interdisciplinary team collaboration. Project initiated in 5620/6620 continues in subsequent semester.

**DBLD 5640 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3).** LEC. 3. Departmental approval. Principles, terminology, and methods of sustainable design and construction, with emphasis on role of interdisciplinary design collaboration.

**DBLD 6510 DESIGN AND CONSTRUCTION PROCESS (3).** LEC. 3. Identification and balancing of architectural and urban design issues, tools and processes used by professional construction managers, with emphasis on collaborative aspects and their impact on efficiency. Departmental approval.

**DBLD 6610 DESIGN BUILDING STUDIO (7).** LEC. 7. First of three-studio progression. Integrated project delivery approach to design practice, with emphasis on development of facility with the design technologies and strategies and digital tools employed in advanced practice.

**DBLD 6620 DESIGN CONSTRUCTION STUDIO (6).** LEC. 6. Pr., DBLD 6610. Second of three-studio progression. Skills associated with formation and schematic design phases of architectural project, with emphasis on rigorous design research methods, program development, and interdisciplinary team collaboration. Project initiated in 5620/6620 continues in subsequent semester.

**DBLD 6640 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3).** LEC. 3. Departmental approval. Principles, terminology, and methods of sustainable design and construction, with emphasis on role of interdisciplinary design collaboration.

**DBLD 7020 INTEGRATED BUILDING PROCESSES I (3).** LEC. 3. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability.

**DBLD 7030 CONSTRUCTION INFORMATION MANAGEMENT (3).** LEC. 3. Applications of advanced information technology in construction.

**DBLD 7040 INTEGRATED BUILDING PROCESSES II (3).** LEC. 3. Construction project delivery, from pre-construction service through ownership. Topics include project management, pre-construction services, pre-planning, procurement, site utilization, subcontracts, commissioning, closeout, building operation, and long-term ownership. Departmental approval.

**DBLD 7550 COLLABOR PROCESS DES CONSTRU (3).** LEC. 3. Coreq., DBLD 6620 and DBLD 7551. Current integrated delivery models and decision-making strategies related to interface of design and construction disciplines from professional, contractual, and technological perspectives. Emphasis on risk quantification between parties involved in integrated delivery.

**DBLD 7551 COLLABORATIVE PRACTICE LAB (1).** LAB. 4. Pr., DBLD 6620. Coreq., DBLD 6620 (students in design track). Problem-solving exercises related to effective pre-construction practices employed by design and construction professionals.

## Biosystems Engineering (BSEN)

**DBLD 7630 DESIGN CONSTRUCTION SUMMARY COMPREHENSIVE STUDIO (7).** LEC. 7. Pr., DBLD 6620 or (DBLD 7550 or DBLD 7551). Third of three-studio progression. Development of design and construction for architectural project in interdisciplinary teams, including analysis of constructability, projected construction cost, and scheduling.

**DBLD 7650 EXECUTIVE ISSUES (3).** LAB. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables. Course may be repeated for a maximum of 3 credit hours. Departmental approval.

**DBLD 7950 GRADUATE SEMINAR (1).** SEM. 1. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability. Course may be repeated for a maximum of 3 credit hours.

### Biosystems Engineering (BSEN)

Dr. Steve Taylor - 844-3534

**BSEN 2210 ENGINEERING METHODS FOR BIOLOGICAL SYSTEMS (2).** LEC. 1, LAB. 3. Pr., ENGR 1110 and PHYS 1600. Departmental approval. Introduction to experimental design methodology, basic engineering design and problem solving methodology for Biological Engineering. Visualization skills, computer-aided 3-D solid modeling of parts, 3-D assembly of solid part geometries, computation of mass properties, 2-D engineering drawings, engineering design process, safety, tools and fabrication processes and design, and hands-on shop fabrication of semester project.

**BSEN 2240 BIOLOGICAL AND BIOENVIRONMENTAL HEAT AND MASS TRANSFER (3).** LEC. 3. Pr., MATH 2630 and PHYS 1600 and P/C, ENGR 2010. Basic principles of heat and mass transfer with special applications to biological and environmental systems. Introduction to steady state and transient heat conduction. Convection, radiation, diffusion, simultaneous heat and mass transfer, and generation and depletion of heat and mass in biological systems.

**BSEN 3210 MECHANICAL POWER FOR BIOSYSTEMS (3).** LEC. 2, LAB. 3. Pr., ENGR 2010 and MATH 2650 and P/C, ENGR 2350. Basic engineering analysis, synthesis, and design concepts applied to power sources, mobile equipment, and machinery applications for agricultural, forestry, and natural resource systems.

**BSEN 3230 NATURAL RESOURCE CONSERVATION ENGINEERING (3).** LEC. 2, LAB. 3. Pr., BSEN 3310. Engineering analysis applied to natural resource systems. Design principles and practices in rainfall-runoff relationships, soil erosion and its prediction and control, hydraulic structures, and open channel hydraulics. Departmental approval.

**BSEN 3240 PROCESS ENGINEERING IN BIOSYSTEMS (3).** LEC. 2, LAB. 3. Pr., BSEN 2240. Theory and application of process operations in biological, food and agricultural systems. Heat transfer, fluid flow, thermal processing, evaporation, psychrometrics, refrigeration, drying freezing. Departmental approval.

**BSEN 3260 ENGINEERING FOR PRECISION AGRICULTURE AND FORESTRY (3).** LEC. 2, LAB. 3. Pr., ELEC 3810 and MATH 2650. Engineering aspects of spatial technologies applied to agricultural and forest production. Data collection in the field using GPS and use of field data in site specific applications. Fall. Departmental approval.

**BSEN 3310 HYDRAULIC TRANSPORT IN BIOLOGICAL SYSTEMS (4).** LEC. 3, LAB. 3. Pr., ENGR 2050 and MATH 2650. Introduction to Fluid Mechanics, Fluid Properties, Non-Newtonian fluids and biological systems, Fluid statics, Energy equation, mass and momentum balance, pipe flow for Newtonian and Non-Newtonian fluids, dimensional analysis, compressible flows.

**BSEN 3500 NATURAL RESOURCE SYSTEMS CONSERVATION (3).** LEC. 2, LAB. 3. Pr., MATH 1130. Natural resource conservation technologies including rainfall-runoff relationships, sediment transport capacity, runoff control structures, water supply development, surveying techniques including GPS methods.

**BSEN 3510 AGRICULTURAL POWER AND MACHINERY FUNDAMENTALS (3).** LEC. 2, LAB. 3. Pr., MATH 1130. Power unit fundamentals with emphasis on diesel and small gasoline engines; mechanics of operation, safety, use, and adjustment of machines used for horticultural and agronomic crop production; and precision agriculture principles and technology.

**BSEN 3530 AGRICULTURAL PRODUCTION AND PROCESSING FACILITY TECHNOLOGY (3).** LEC. 3. Pr., MATH 1130. Fundamental requirements for the design and operation of agricultural production and processing facilities.

**BSEN 3560 TURF SYSTEMS IRRIGATION DESIGN (3).** LEC. 3. Pr., MATH 1130. Irrigation system design for turf-based systems including residential lawns, commercial properties, athletic fields, and golf courses. Irrigation scheduling and water demand are presented to provide management capabilities.

**BSEN 3610 INSTRUMENTATION AND CONTROLS FOR BIOLOGICAL SYSTEMS (3).** LEC. 2, LAB. 3. Pr., MATH 2650 and BSEN 2210. Understanding of fundamentals of electrical circuits, sensing and sensors, simple digital electronics, analog measurement circuits, introductory digital signal processing, computer data acquisition. Departmental approval.

**BSEN 4210 IRRIGATION SYSTEM DESIGN (3).** LEC. 2, LAB. 3. Pr., BSEN 3310. Theory and design of irrigation systems for the application of water and wastewater

including surveying techniques for system design. Systems include solid-set, traveler, center-pivot, and trickle. Fall. Departmental approval.

**BSEN 4230 WASTE MANAGEMENT AND UTILIZATION ENGINEERING FOR BIOSYSTEMS (3).** LEC. 2, LAB. 3. Pr., CHEM 1040 and BIOL 3200 and P/C, BSEN 3230. Theory and design of physical and biological treatment processing systems for biological waste management and utilization. The technologies of lagoons, land application systems, energy production, and refeeding. Spring.

**BSEN 4250 HYDRAULIC CONTROL SYSTEMS DESIGN (3).** LEC. 2, LAB. 3. Pr., CIVL 3110 or MECH 3030. Principles of energy transfer by means of fluid power. Design of hydraulic control systems using prime movers, valves, actuators, and accessories. Spring.

**BSEN 4260 RENEWABLE ENERGY IN BIOSYSTEMS PROCESS OPERATIONS (3).** LEC. 2, LAB. 3. Pr., ENGR 2070 and ELEC 3810 and ENGR 2010. Departmental approval. Application and use of renewable energy in biological, food, forest and agricultural systems. Biomass handling, transportation and storage, biomass processing, conversion of biomass to bioenergy, biofuels and biopower, wind power systems, solar resource, electrical energy generation electric motors and lighting.

**BSEN 4310 ENGINEERING DESIGN FOR BIOSYSTEMS (4).** LEC. 2, LAB. 6. Departmental approval. Capstone design course in biosystems engineering emphasizing teamwork, communication, safety engineering, and economic analysis to complete an engineering design project. Spring.

**BSEN 4510 FUNDAMENTALS OF ECOLOGICAL ENGINEERING (3).** LEC. 3. Pr., BSEN 3310. The course introduces students to ecological engineering. It covers topics such as non-point source (NPS) transport of nutrients, sediment, pesticides, pathogens, and a multitude of other chemicals. Departmental approval.

**BSEN 4520 WATERSHED MODELING (3).** LEC. 3. Pr., BSEN 4510. Departmental approval. Watershed modeling of nutrients sediment, pesticides, and pathogens from agricultural, forestry, and urban activities. Underlying processes (climate, hydrology, nutrients and pesticides, erosion, channel), land cover/plant, best management practices. Sensitivity and uncertainty analyses.

**BSEN 4560 SITE DESIGN FOR BIOSYSTEMS (3).** LEC. 2, LAB. 3. Pr., BSEN 3310. Course is designed to develop student skills in CAD site design and restoration including the use of integrated suite of rural & urban best management practices to reduce environmental impact. Departmental approval.

**BSEN 4960 SPECIAL PROBLEMS IN BIOSYSTEMS ENGINEERING (1-4).** IND. Departmental approval. Faculty supervision of individual student investigations of specialized problems in biosystems engineering. May be repeated with change in problem. Course may be repeated with change in topics.

**BSEN 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

**BSEN 4970 SPECIAL TOPICS IN BIOSYSTEMS ENGINEERING (1-4).** LEC. Departmental approval. Individual or small group study of a specialized area in biosystems engineering. Course may be repeated for a maximum of 12 credit hours.

**BSEN 4997 HONORS READING AND SPECIAL TOPICS (1-3).** IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

**BSEN 5220 GEOSPATIAL TECHNOLOGIES IN BIOSYSTEMS (3).** LEC. 2, LAB. 3. Pr., STAT 2510 or STAT 2513 or STAT 2610 or STAT 3010 or AGRN 2040. Departmental approval. Geospatial technologies including GPS, GIS, and remote sensing systems applied to biosystems. Collecting, managing, and analyzing spatial data for agricultural and forest systems. Spring.

**BSEN 5250 DETERMINISTIC MODELING FOR BIOSYSTEMS (3).** LEC. 3, LAB. 2. Pr., MATH 2650 and ELEC 3810 and (ENGR 2350 or MECH 2110). Departmental approval. Modeling of biosystems, methods to deal with complexity, and validation tools. Spring.

**BSEN 5550 PRINCIPLES OF FOOD ENGINEERING TECHNOLOGY (4).** LEC. 3, LAB. 3. Pr., MATH 1130 and PHYS 1000 Engineering concepts and unit operations used in processing food products. Fall.

**BSEN 6220 GEOSPATIAL TECHNOLOGIES IN BIOSYSTEMS (3).** LEC. 2, LAB. 3. Departmental approval. Geospatial technologies including GPS, GIS, and remote sensing systems applied to biosystems. Collecting, managing, and analyzing spatial data for agricultural and forest systems. Spring.

**BSEN 6250 DETERMINISTIC MODELING FOR BIOSYSTEMS (3).** LEC. 2, LAB. 3. Pr., MATH 2650 and ELEC 3810 and (ENGR 2350 or MECH 2110). Departmental approval. Modeling of biosystems, methods to deal with complexity, and validation tools. Spring.

**BSEN 6550 PRINCIPLES OF FOOD ENGINEERING TECHNOLOGY (4).** LEC. 3, LAB. 3. Pr., MATH 1130 and PHYS 1000. Engineering concepts and unit operations used in processing food products. Fall.

**BSEN 7020 SITE-SPECIFIC TECHNOLOGIES FOR AGRICULTURE AND FORESTRY SYSTEMS (3).** LEC. 2, LAB. 3. Introduction to advanced concepts of off-highway vehicle equipment for use in agricultural and forestry production with emphasis on site-specific management (Precision Agriculture/Forestry). The course will overview new concepts and technologies for equipment usage and technologies applied for site-specific crop management. Departmental approval.

**BSEN 7050 SOIL DYNAMICS OF TILLAGE AND TRACTION (3).** LEC. 3. Pr., CIVL 4300 and AGRN 7590. Analyses and measurements of soil reactions as



## Business Administration (BUSI)

affected by physical properties of soil when subjected to forces imposed by tillage implements and traction devices. Departmental approval.

**BSEN 7110 FUNDAMENTALS OF INSTRUMENTATION FOR BIOLOGICAL SYSTEMS (3).** LEC. 2, LAB. 3. Students will gain an understanding of the fundamentals of sensing and sensors, simple digital electronics and measurement circuits, introductory digital signal processing, and computer data acquisition. They will be required to build and test instrumentation to collect data on biological systems that might include fluid flow, pressure, force, or other transducers. Departmental approval.

**BSEN 7120 STOCHASTIC MODELING FOR BIOSYSTEMS (3).** LEC. 3. Pr., CIVL 3020. Solving problems in biosystems engineering and related fields by modeling data with probability distributions, spatial statistics, autoregressive models, Monte-Carlo simulation, and reliability methods. Departmental approval.

**BSEN 7220 RENEWABLE ENERGY SYSTEMS DESIGN, ANALYSIS AND APPLICATIONS (3).** LEC. 3. Understanding of the basic principles, applications, modeling, energetic and economic analysis of renewable energy resources namely solar, biomass, wind, hydropower and geothermal. Design of renewable energy systems.

**BSEN 7240 BULK SOLIDS STORAGE, HANDLING AND TRANSPORTATION (3).** LEC. 3. Sampling of particulate materials, bulk solids characterization, flow properties, particle and bulk solid flow, dynamics of fluid/solids systems, hydraulic and pneumatic conveyor design, storage bin and hopper design and geometry, safety issues.

**BSEN 7260 ADVANCED UNIT OPERATIONS IN BIOSYSTEMS ENGINEERING (3).** LEC. 2, LAB. 3. The course is an advance analysis of the unit operations used to process and enhance the value of biological materials.

**BSEN 7280 FOOD THERMAL PROCESSING (3).** LEC. 2, LAB. 3. Insight of technologies and approaches used in food thermal processing for commercial purposes. Application of fundamentals of heat transfer, thermo-bacteriology, physical and chemical kinetics of food, and plant layout. Departmental approval.

**BSEN 7310 NONPOINT SOURCE POLLUTION (3).** LEC. 3. Non-point source (NPS) transport of nutrients, sediment, pesticides, and pathogens from agricultural, forestry, and urban activities. Basic concepts of pollutant transport through soils and with overland flow. Evaluation, management, and prevention of non-point pollution of surface and groundwater. Departmental approval.

**BSEN 7320 NON-POINT SOURCE POLLUTION MODELING (3).** LEC. 3. Pr., BSEN 7310. Departmental approval. Non-point source (NPS) modeling of nutrients, sediment, pesticides, and pathogens from agricultural, forestry, and urban activities. Underlying processes (climate, hydrology, nutrients and pesticides, erosion, channel), land cover/plants best management practices. Sensitivity and uncertainty analyses

**BSEN 7330 SOIL-PLANT-ENVIRONMENTAL SYSTEM DESIGN SOIL-PLANT-ENVIRONMENTAL SYSTEM DESIGN (3).** LEC. 3. Study of systems that incorporate plant uptake of nutrients and/or heavy metals for remediation of soil-based contaminants. Design applications of environmental remediation include constructed wetlands, drip irrigation of wastewater effluent, disposal of municipal sludge, and phytoremediation of contaminants in shallow groundwater.

**BSEN 7350 ENGINEERING ANALYSIS OF LAKES AND RESERVOIRS (3).** LEC. 3. Knowledge and understanding of the causes, impacts, and methods of restoring water quality impairments, with emphasis placed on impounded water bodies and perennial streams. Departmental approval.

**BSEN 7900 SPECIAL PROBLEMS IN BIOSYSTEMS ENGINEERING (1-4).** IND. Faculty supervision of individual student investigations of advanced specialized problems in biosystems engineering at the graduate level. Pr., Departmental approval. Course may be repeated with change in topics.

**BSEN 7950 SEMINAR (1).** SEM. SU. Reviews and discussions of research techniques, current scientific literature, and recent developments in biosystems engineering. Course may be repeated for a maximum of 12 credit hours. Course may be repeated for a maximum of 12 credit hours.

**BSEN 7970 SPECIAL TOPICS IN BIOSYSTEMS ENGINEERING (1-4).** IND. Individual or small group study of an advanced specialized area in biosystems engineering at the graduate level. Pr., departmental approval. Course may be repeated with change in topics.

**BSEN 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**BSEN 8990 RESEARCH AND DISSERTATION (1-12).** DSR. Departmental approval.

### Business Administration (BUSI)

Dr. Gary Water - 844-5841  
Dr. Daniel Gropper - 844-2901

**BUSI 1010 CONTEMPORARY ISSUES IN BUSINESS ADMINISTRATION I (1).** LEC. 1. Exposure to various topics relative to business administration. For Business majors, should be taken during student's first academic year.

**BUSI 2010 CONTEMP ISSUES IN BUS ADMIN II (1).** LEC. 1. SU. Orientation to business administration. Business majors should take during student's second academic year.

**BUSI 2900 DIRECTED STUDIES (1-3).** IND. SU. Independent study option for freshmen and sophomores in the College of Business for students who seek general or free elective credit. This course will be taught by the Executive Director of Corporate & Student Services. This person directs undergraduate business programs. Course may be repeated for a maximum of 3 credit hours.

**BUSI 3010 CONTEMPORARY ISSUES IN BUSINESS III - INTERN/JOB SEARCH (1).** LEC. 1. Preparation for conducting an intern/career position job search. Develop career planning and job search skills.

**BUSI 3510 INTRODUCTION TO BUSINESS AND ENGINEERING (3).** LEC. 3. Principles of business and engineering management processes. Admission to the Business-Engineering-Technology Program.

**BUSI 3520 INTEGRATING BUSINESS AND ENGINEERING THEORIES WITH PRACTICE (3).** LEC. 2, LAB. 3. Coreq., BUSI 3530. Case study problems from business and engineering practice.

**BUSI 3550 CROSSFUNCTIONAL TEAMWORK (1).** LEC. 1. Development of skills needed to perform well in cross-functional teams. Admission to the B-E-T program.

**BUSI 3560 LEADERSHIP (1).** LEC. 1. Overview of leadership concepts and skills. Admission to the B-E-T program.

**BUSI 4010 CONTEMPORARY ISSUES IN BUSINESS IV - SENIOR/NEW PROFESSIONAL (1).** LEC. 1. Preparation for transition from college student to career professional. Lecture and case discussion format to discuss issues faced as a new professional. Fall, Spring.

**BUSI 4540 ENTREPRENEURSHIP AND STRATEGIC MANAGEMENT OF TECHNOLOGY AND INNOVATION (4).** LEC. 4. Pr., (BUSI 3510 or ENGR 3510) and (BUSI 3520 or ENGR 3520). Develop student skills for starting a new business and making strategic decisions concerning technology. Admission to the B-E-T program.

**BUSI 4920 BUSINESS INTERNSHIP (1-3).** AAB/INT. SU. Pr., Internship option for students to gain work experience who seek general or free elective credit. Approval of instructor prior to internship, and completion of our current enrollment in two or more of the following: ACCT 2110, ECON 2020/2030, FINC 3610, MNGT 3100, or MKTG 3310.

**BUSI 4970 CAPSTONE PROJECT I: DESIGN PROPOSAL (1).** LAB. 3. Coreq., BUSI 4540. Processes to develop and present design proposal for cooperating industry.

**BUSI 4980 PRODUCT/PROCESS DESIGN AND DEVELOPMENT II (3).** LEC. 1, LAB. 6. Pr., BUSI 4970 or ENGR 4970. Cross-functional team design projects for sponsoring industry.

**BUSI 7110/7116 FINANCIAL ANALYSIS (3).** LEC. 3. Integrated course combining financial accounting and corporate finance for MBA students. Departmental approval.

**BUSI 7120/7126 QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS (3).** LEC. 3. Integrated course in statistical methods and management science for MBA students. Departmental approval.

**BUSI 7130/7136 STRATEGIC ANALYSIS AND THE COMPETITIVE ENVIRONMENT (3).** LEC. 3. Integrated course covering business strategy and the external environment in a global context. Departmental approval.

**BUSI 7140/7146 ORGANIZATIONAL LEADERSHIP AND CHANGE (3).** LEC. 3. Integrated course covering aspects of individual and group behavior and assessment in organizations, effective team building, and leading organizations through change. Departmental approval.

**BUSI 7210/7216 MARKETING AND CONSUMER THEORY (3).** LEC. 3. Combines elements of the economics of demand theory and marketing management. Includes advanced pricing topics and the competitive environment. Departmental approval.

**BUSI 7220/7226 OPERATIONS AND INFORMATION TECHNOLOGY FOR COMPETITIVE ADVANTAGE (3).** LEC. 3. The structure of business operations and the role that information technology plays in formulating and implementing strategies for competitive advantage. Departmental approval.

**BUSI 7230/7236 COST ANALYSIS AND SYSTEMS (3).** LEC. 3. Integrates production and cost theory from economics with managerial and cost accounting theory and systems for MBA students. Departmental approval.

**BUSI 7920/7926 MBA INTERNSHIP (1-6).** AAB/INT. SU. Internship for MBA students in business organizations. Course may be repeated for a maximum of 6 credit hours. Departmental approval.

**BUSI 7970/7976 SPECIAL TOPICS IN BUSINESS ADMINISTRATION (1-3).** AAB. Specialized topics in business administration not otherwise covered in existing courses. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**BUSI 7980/7986 INTEGRATED BUSINESS PROJECT AND CASE ANALYSIS (3).** LEC. 3. Integrates knowledge gained from MBA classes and applies that knowledge to address actual business problems. Departmental approval.

**Consumer Affairs (CAHS)**

Dr. Carol Warfield - 844-4084

**CAHS 1000 STUDIO I: INTRODUCTION TO INTERIOR DESIGN (4).** LEC. 3, LST. 3. Introduction and application of design theory to interior design and consumer products. Fall, Spring.

**CAHS 1100 STUDIO II: TECHNICAL DESIGN OF INTERIOR DESIGN (4).** LEC. 2, LEC/STU. 6. Space planning and delineation of interior systems for residential, institutional, and other consumer environments. Fall, Spring.

**CAHS 1600 TEXTILE INDUSTRIAL COMPLEX (3).** LEC. 3. Introduction to the composition, characteristics, and products of the network of fiber producers, textile manufacturers, dyers, finishers, apparel manufacturers, and retailers. Fall, Spring.

**CAHS 2000 GLOBAL CONSUMER CULTURE (3).** LEC. 3. Sustainability and social responsibility provide a framework for the study of cultural, commercial, and aesthetic factors influencing the selection and usage of consumer products and services that create and express social identity. Credit will not be given for both CAHS 2000 and CAHS 2007.

**CAHS 2007 HONORS GLOBAL CONSUMER CULTURE (3).** LEC. 3. Pr., Honors College. Sustainability and social responsibility provide a framework for the study of cultural, commercial, and aesthetic factors influencing the selection and usage of consumer products and services that create and express social identity. Credit will not be given for both CAHS 2007 and CAHS 2000.

**CAHS 2100 STUDIO III: VISUAL PRESENTATION OF INTERIOR DESIGN I (4).** LEC. 2, LST. 6. Pr., CAHS 1100 Development of visual communication skills for interior design and consumer products. Fall.

**CAHS 2200 STUDIO IV: CAD FOR INTERIOR DESIGN (4).** LEC. 2, LST. 6. Pr., CAHS 2100. Application of graphic visualization and computer-aided design techniques to represent interior design. Spring.

**CAHS 2300 HISTORY OF THE DECORATIVE ARTS (3).** LEC. 3. Pr., CAHS 1000. Core fine arts. Historical survey of the interior design and decorative arts from antiquity through present.

**CAHS 2400 INTERIOR MATERIALS AND COMPONENTS (3).** LEC. 3. Pr., CAHS 1000. Survey of finishes, textiles, materials, and components. Introduction to health, safety, and environmental issues that impact consumers. Fall.

**CAHS 2500 STUDIO V: VISUAL PRESENTATIONS II (4).** LEC. 2, LST. 6. Pr., CAHS 2100. Development of color visual communication skills for interior design ideas and concepts. Spring.

**CAHS 2740 AESTHETICS FOR APPAREL DESIGN (4).** LEC. 2, LST. 4. Pr., CAHS 1600. Principles of aesthetics applied to apparel product development including computer-aided design and other presentation techniques. 2.0 gapped gpa.

**CAHS 2750 PRODUCT DEVELOPMENT: TECHNICAL DESIGN (4).** LEC. 2, LST. 4. Pr., CAHS 2740. Intermediate pattern development concepts, techniques, and applications. 2.0 gapped GPA. ADMP major.

**CAHS 2760 VISUAL MERCHANDISING (4).** LEC. 2, LST. 6. Pr., CAHS 1600. History, equipment, application, and theory of display techniques in store and non-store settings. 2.0 gapped GPA. AMDP major.

**CAHS 2800 APPAREL PRODUCTION MANAGEMENT (4).** LEC. 3, LAB. 3. Pr., CAHS 1600. Introduction to apparel industry terminology, technology, production methods, and engineering quality into apparel products. 2.0 gapped GPA. AMDP major.

**CAHS 3100 STUDIO VI: LIGHTING DESIGN/ENVIRONMENTAL SYSTEMS (4).** LEC. 2, LST. 6. Pr., CAHS 2200 and CAHS 2400 and CAHS 2500. Application of principles and processes of lighting, mechanical, and environmental systems to interior design. Fall.

**CAHS 3200 STUDIO VII: RESIDENTIAL INTERIORS (4).** LEC. 2, LST. 6. Pr., CAHS 2200 and CAHS 2300 and CAHS 2400 and CAHS 2500. Application of human factors and consumer needs to programming and design process of residential interiors.

**CAHS 3380 STUDY ABROAD OPPORTUNITY IN HUMAN SCIENCES (1).** LEC. 1. Exploration of study abroad opportunities for students interested in the International Minor in Human Sciences. 2.0 gapped GPA. AMDP major.

**CAHS 3400 STUDIO VIII: NON-RESIDENTIAL INTERIORS (4).** LEC. 2, LST. 6. Pr., CAHS 2200 and CAHS 2300 and CAHS 2400 and CAHS 2500 and CAHS 3100 and CAHS 3200. Application of programming and presentation techniques to non-residential interior design.

**CAHS 3500 BUSINESS PRACTICES IN INTERIOR DESIGN (3).** LEC. 3. Pr., P/C, CAHS 2200 and CAHS 2300 and CAHS 2400. Professional practices in the design business. Orientation to internship experience.

**CAHS 3600 TEXTILES (4).** LEC. 3, LAB. 3. Pr., CAHS 1600 and CHEM 1020 and CHEM 1021. Organic compounds, polymers, fibers, yarns, fabrics, and chemical finishes for apparel and household textiles with laboratory evaluation. 2.0 gapped GPA. AMDP major.

**CAHS 3700 GENDER, WEALTH AND PHILANTHROPY (3).** LEC. 3. Study of wealth and philanthropic theories, principles, and applications as it applies in gender.

**CAHS 3707 GENDER, WEALTH AND PHILANTHROPY (3).** LEC. 3. Pr., Honors College. Study of the relationship of gender to wealth and philanthropic theories, principles, and applications.

**CAHS 3740 ILLUSTRATION TECHNIQUES FOR APPAREL DESIGN (3).** LEC. 1, AAB/LST. 4. Pr., CAHS 1600 and CAHS 2740. Departmental approval. Creative approach to illustrating apparel through the use of varied media and development of illustrative style appropriate for advertising, retail and portfolio presentations.

**CAHS 3750 PRODUCT DEVELOPMENT: APPAREL DESIGN (4).** LEC. 2, LST. 4. Pr., CAHS 2750 and CAHS 2800. Advanced design techniques, including couture production; portfolio and internship planning. 2.0 gapped GPA. AMDP major.

**CAHS 3800 CONSUMER DECISION MAKING FOR APPAREL AND FASHION PRODUCTS (3).** LEC. 3. Pr., CAHS 1600 and CAHS 2000. Analysis of consumer decision making for apparel and fashion products and the factors that impact consumer decisions. Credit will not be given for both CAHS 3800 and MKTG 3410. 2.0 gapped GPA. AMDP major.

**CAHS 3850 MERCHANDISE PLANNING AND CONTROL (3).** LEC. 2, LAB. 2. Pr., COMP 1000. Application of principles of merchandise management and retail buying to the retailing of consumer goods and services. 2.0 gapped GPA.

**CAHS 3900 DIRECTED STUDIES (1-3).** AAB/IND. SU. Directed readings and/or individualized research project. 2.0 gapped GPA. Course may be repeated for a maximum of 6 credit hours.

**CAHS 3940 STUDY AND TRAVEL IN CONSUMER AFFAIRS (1-3).** AAB/FLD. Concentrated study in the U.S. or abroad. 2.0 gapped GPA. Course may be repeated for a maximum of 6 credit hours.

**CAHS 3970 SPECIAL TOPICS (1-3).** AAB. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 4200 STUDIO IX: PORTFOLIO DEVELOPMENT (3).** STU. 5. Pr., CAHS 3400 and CAHS 3500 Portfolio development, critique, and review.

**CAHS 4300 STUDIO X: INTERIOR DESIGN-COMMERICAL (4).** LEC. 2, LST. 6. Pr., CAHS 3400 and CAHS 3500. Development of a large scale commercial project with comprehensive programming, schematic design, and thorough design development, based on research/programming documentation.

**CAHS 4400 STUDIO XI: INTERIOR DESIGN-INSTITUTIONAL (4).** LEC. 2, LST. 6. Pr., CAHS 4300. Development of a large scale institutional project with emphasis on design of a healing environment.

**CAHS 4500 PORTFOLIO DEVELOPMENT FOR DESIGNERS (3).** LEC. 2, LAB. 2. Pr., P/C, CAHS 3750. Survey of advanced techniques in design presentation including computer-aided design and graphics software. Portfolio development in print, computer slide show, and web formats. 2.0 gapped GPA.

**CAHS 4800 APPAREL ENGINEERING (4).** LEC. 3, LAB. 3. Pr., CAHS 2800. Planning and problem solving throughout the apparel production process, including methods engineering, time study, costing, CAD. 2.0 gapped GPA. AMDP major.

**CAHS 4900 UNDERGRADUATE TEACHING ASSISTANT EXPERIENCE (1-3).** LEC. SU. Student must have previously earned an "A" in the course s/he is assisting with and departmental approval. Student participation as an undergraduate teaching assistant (UTA) for the Consumer Affairs course under the supervision of a faculty member. Course may be repeated for a maximum of 6 credit hours.

**CAHS 4920 INTERNSHIP (8).** AAB/INT. 8. Supervised 10 week professional internship. Departmental approval. 2.0 gapped GPA.

**CAHS 4960 SPECIAL PROBLEMS IN DESIGN (1-3).** IND. A) Apparel, B) Interior Design, C) Visual Merchandising, D) Textile Design. Creative solution of design problems. Departmental approval. 2.0 gapped GPA. Course may be repeated for a maximum of 9 credit hours.

**CAHS 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. SU. Pr., Honors College. Readings in specialized topics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 4980 UNDERGRADUATE RESEARCH IN CONSUMER AFFAIRS (1-3)** IND/LEC. SU. Pr., 3.5 GPA. Departmental approval. Participation as an undergraduate research assistant (URA) for a Consumer Affairs research project under the supervision of a CA faculty member. Course may be repeated for a maximum of 6 credit hours.

**CAHS 4997 HONORS THESIS (3).** IND. SU. Pr., Honors College. CAHS 4967 Research in specialized topics. Departmental approval.

**CAHS 5450 HISTORY OF COSTUME (3).** LEC. 3. Pr., (HIST 1010 and HIST 1020) or (HIST 1017 and HIST 1027) or (HIST 1210 and HIST 1220) or (HIST 1217 and HIST 1227) or (UNIV 2710 and UNIV 2720) or (UNIV 2717 and UNIV 2727). Historical roles of dress in western civilization. Cultural, social, and physical evolution. Credit will not be given for both CAHS 5450 and CAHS 6450. Core History Departmental approval. 2.0 gapped GPA. AMDP major.

**CAHS 5600 GLOBAL SOURCING IN TEXTILES AND APPAREL (3).** LEC. 3. Pr., (ECON 2020 or ECON 2027) and (ANTH 1000 or GEOG 1010 or PSYC 2010 or SOCY 1000 or SOCY 1007). Departmental approval. The role of fiber, textile, and apparel industries in the international economy. Spring. 2.0 gapped GPA.

**CAHS 5610 GLOBAL RETAILING STRATEGIES FOR TEXTILE AND APPAREL PRODUCTS (3).** LEC. 3. Pr., CAHS 2000 and CAHS 3850. Strategies for successful

## Consumer Affairs (CAHS)

global business expansion for textile and apparel retailers. Credit granted for only one of: CAHS 5610, 6610, MKTG 4330, 4440.

**CAHS 5650 TEXTILE AND APPAREL EVALUATION (4).** LEC. 2, LAB. 6. Pr., CAHS 3600. Testing procedures for characterization and evaluation of fabrics and sewn products for apparel and interiors. Credit will not be given for both CAHS 5650 and CAHS 6650. 2.0 gapped GPA. AMDP major.

**CAHS 5700 ENTREPRENEURSHIP IN APPAREL AND INTERIORS (3).** LEC. 3. Analyzing business opportunities in textiles, apparel and interiors; developing marketing concepts and entrance strategies. Credit will not be given for both CAHS 5700 and CAHS 6700. 2.0 gapped GPA.

**CAHS 5730 HISTORY OF TEXTILES (3).** LEC. 3. Pr., (HIST 1010 and HIST 1020) or (HIST 1017 and HIST 1027) or (HIST 1210 and HIST 1220) or (HIST 1217 and HIST 1227) or (UNIV 2710 and UNIV 2720) or (UNIV 2717 and UNIV 2727). Cultural, economic, material, technological, and aesthetic perspectives on the evolution of textiles. Credit will not be given for both CAHS 5730 and CAHS 6730. Core history Departmental approval. 2.0 gapped GPA.

**CAHS 5750 APPAREL LINE DEVELOPMENT (4).** LEC. 2, LAB. 6. Pr., CAHS 3750 and CAHS 3850 and CAHS 4800. Team driven design, production, and market research. Development of apparel lines. Credit will not be given for both CAHS 5750 and CAHS 6750. Spring. Departmental approval. 2.0 gapped GPA. AMDP major.

**CAHS 5760 FASHION ANALYSIS AND FORECASTING (3).** LEC. 3. Pr., CAHS 1600 and (CAHS 2740 or CAHS 2760). Theories explaining fashion dynamics and techniques for forecasting change, with case applications in textiles, apparel, and retailing. Credit will not be given for both CAHS 5760 and CAHS 6760. Departmental approval. 2.0 gapped GPA. AMDP major.

**CAHS 5850 APPAREL MERCHANDISING AND RETAIL MANAGEMENT (4).** LEC. 3, LAB. 2. Pr., CAHS 3850. Problem-solving and decision making strategies for retailing apparel, textiles, and other consumer products. Credit will not be given for both CAHS 5850 and CAHS 6850. 2.0 gapped GPA. AMDP major.

**CAHS 5860 ADVANCED RETAIL BUYING AND ACCOUNTABILITY (3).** LEC. 2, LAB. 1. Pr., P/C, CAHS 5850. Planning, executing and evaluating retail buying to maximize ROI. 2.0 gapped GPA or departmental approval. Course will not be given for both CAHS 5860 and CAHS 6860.

**CAHS 6450 HISTORY OF COSTUME (3).** LEC. 3. Historical roles of dress in western civilization. Cultural, social, and physical evolution. Credit will not be given for both CAHS 6450 and CAHS 5450. Departmental approval. Graduate standing.

**CAHS 6600 GLOBAL SOURCING IN TEXTILES AND APPAREL (3).** LEC. 3. The role of fiber, textile, and apparel industries in the international economy. Credit will not be given for both CAHS 5600 and CAHS 6600. Graduate standing. Departmental approval.

**CAHS 6610/6616 GLOBAL RETAILING STRATEGIES FOR TEXTILE AND APPAREL PRODUCTS (3).** LEC. 3. Strategies for successful global business expansion for textile and apparel retailers. Credit given for only one of: CAHS 5610, 6610, MKTG 4330, 4440. Departmental approval.

**CAHS 6650 TEXTILE AND APPAREL EVALUATION (4).** LEC. 2, LAB. 6. Pr., CAHS 3600. Testing procedures for characterization and evaluation of fabrics and sewn products for apparel and interiors. Credit will not be given for both CAHS 5650 and CAHS 6650. Spring. Departmental approval.

**CAHS 6700 ENTREPRENEURSHIP IN APPAREL AND INTERIORS (3).** LEC. 3. Analyzing business opportunities in textiles, apparel, and interiors; developing marketing concepts and entrance strategies. Credit will not be given for both CAHS 5700 and CAHS 6700. Departmental approval.

**CAHS 6730 HISTORY OF TEXTILES (3).** LEC. 3. Cultural, economic, material, technological, and aesthetic perspectives on the evolution of textiles. Credit will not be given for both CAHS 6730 and CAHS 5730. Departmental approval.

**CAHS 6750 APPAREL LINE DEVELOPMENT (4).** LEC. 2, LAB. 6. Team-driven design, production, and market research. Development of apparel lines. Credit will not be given for both CAHS 5750 and CAHS 6750. Departmental approval. Graduate standing.

**CAHS 6760/6766 FASHION ANALYSIS AND FORECASTING (3).** LEC. 3. Theories explaining fashion dynamics and techniques for forecasting change with case applications in textiles, apparel, and retailing. Credit will not be given for both CAHS 6760 and CAHS 5760. Departmental approval. Graduate standing. Fall.

**CAHS 6850 APPAREL MERCHANDISING AND RETAIL MANAGEMENT (4).** LEC. 3, LAB. 2. Problem-solving and decision making strategies for retailing apparel, textiles, and other consumer products. will not be given for both CAHS 6850 and CAHS 5850. Departmental approval. Graduate standing.

**CAHS 6860 ADVANCED RETAIL BUYING AND ACCOUNTABILITY (3).** LEC. 2, LAB. 1. Planning, executing and evaluating retail buying to maximize ROI. Course will not be given for both CAHS 5860 and CAHS 6860. Departmental approval.

**CAHS 7050 RESEARCH METHODS IN CONSUMER AND TEXTILE SCIENCES (3).** LEC. 3. Pr., (STAT 6000-8999 or FOUN 7200 or FOUN 7300). Research and investigation methods appropriate to the study of consumer and textile sciences. Departmental approval.

**CAHS 7100 ENVIRONMENTAL DESIGN THEORIES AND APPLICATIONS (3).** LEC. 3. Pr., CAHS 4400 Theories, methodologies, and current issues relevant to

interior design; sociological, psychological, ecological, and post-modern perspectives. Departmental approval.

**CAHS 7200 INTEGRATED TEXTILE AND APPAREL COMPLEX (3).** LEC. 3. Components, linkages, concepts and trends in an integrated, global textile/apparel/retail industry. Fall. Departmental approval.

**CAHS 7530 ECONOMICS OF APPAREL AND TEXTILES (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Economic issues involving the manufacture, distribution, and consumption of textiles and apparel. Departmental approval.

**CAHS 7670 SOCIAL PSYCHOLOGICAL THEORIES IN CLOTHING BEHAVIOR (3).** LEC. 3. Pr., CAHS 7050. Clothing as a factor in the physical, social, and psychological environment; response to and use of clothing in social behavior. Departmental approval.

**CAHS 7690 CONSUMER THEORY IN APPAREL AND INTERIORS (3).** LEC. 3. Pr., CAHS 7050. Overview of various theories used in consumer research with an emphasis on their application in apparel, merchandising, design, and interiors. Departmental approval.

**CAHS 7900 DIRECTED STUDIES (1-3).** IND. SU. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 7910 SUPERVISED TEACHING (1).** AAB/IND. SU. Practical experience teaching in the classroom. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CAHS 7920 GRADUATE INTERNSHIP (3).** INT. Supervised professional experience in the United States or internationally. Departmental approval.

**CAHS 7930 ADVANCED DESIGN PROJECTS (1-6).** IND. SU. Independent execution of advanced design work. (A) Apparel; (B) Interiors; (C) Visual Merchandising; (D) Textile Design. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 7940 STUDY/TRAVEL IN CONSUMER AFFAIRS (1-3).** FLD. SU. Concentrated study/travel in the U.S. or internationally. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 7950 SEMINAR (1).** SEM. SU. Research presentations and discussion. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CAHS 7960 SPECIAL PROBLEMS (1-3).** IND. SU. Directed readings in textiles, apparel, interiors and retailing. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 7970 SPECIAL TOPICS IN DESIGN (1-6).** RES. (A) Apparel; (B) Interiors; (C) Visual Merchandising; (D) Textile Design. Independent execution of advanced design work. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 7980 GRADUATE PROJECT (1-3).** RES. In-depth, integrative research in a particular project related to apparel, textiles, interiors or consumer behavior. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 7990 RESEARCH AND THESIS (1-10).** AAB/MST. Departmental approval. Course may be repeated with a change in topic.

**CAHS 8100 ISSUES IN APPAREL AND INTERIORS BRANDING (3).** LEC. 3. Pr., CAHS 7050. Critical examination of theories and methodological issues in branding research and application in apparel and interior product and service branding. Departmental approval.

**CAHS 8950 INDUSTRY ISSUES SEMINAR (1).** LEC. 1. SU. Research presentations and discussions on issues facing the global textile industrial complex. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 8960 CURRENT ISSUES IN INTEGRATED TEXTILE AND APPAREL SCIENCE (2).** LEC. 2. Directed readings on current issues in the global textile industrial complex. Spring. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CAHS 8970/8976 SPECIAL TOPICS (1-3).** LEC. Topics related to various aspects of the integrated textile and apparel complex. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CAHS 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Departmental approval. Course may be repeated with change in topics.

## Community and Civic Engagement (CCEN)

**CCEN 2000 INTRODUCTION: COMMUNITY AND CIVIC ENGAGEMENT (3).** LEC. 3. Introduction to Community and Civic Engagement introduces students to the context, issues, skills, and experience of citizenship and civic leadership in a democratic society.

**CCEN 2100 WOMEN AND LEADERSHIP (3).** LEC. 3. An interactive exploration of the social, political, economic, and cultural implications of women's current and historic leadership roles.

**CCEN 3000 MINOR IN COMMUNITY AND CIVIC ENGAGEMENT (1).** PRA. 1. SU. Completion of 15 credits toward Minor in Community and Civic Engagement. This course is required for minors in CEE. The capstone requires students to draw upon the knowledge obtained throughout their coursework and to perform relevant service projects.

**Chemistry (CHEM)**

Dr. J. V. Ortiz - 844-4043

**CHEM 1010 SURVEY OF CHEMISTRY I (3).** LEC. 3. Science Core. Survey of important topics from general and organic chemistry. Atomic and bonding theory, chemical reactions and stoichiometry, gas laws, solutions, acids and bases, hydrocarbons, alcohols, ethers and amines.

**CHEM 1011 SURVEY OF CHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 1010. Science Core. Laboratory experiments emphasizing course material in CHEM 1010.

**CHEM 1020 SURVEY OF CHEMISTRY II (3).** LEC. 3. Pr., CHEM 1010. Science Core. Survey of important topics from organic and biochemistry. Aldehydes and ketones, carboxylic acids, carbohydrates, lipids, proteins, enzymes, extracellular fluids, metabolism, nucleic acids, radioactivity.

**CHEM 1021 SURVEY OF CHEMISTRY II LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 1020 and CHEM 1011. Science Core. Laboratory experiments emphasizing course material in CHEM 1020.

**CHEM 1030 FUNDAMENTALS CHEMISTRY I (3).** LEC. 3. Science Core. Atomic and molecular theory, chemical equations, stoichiometry, gas laws, thermochemistry, bonding, electronic structure, molecular geometries, solids, liquids, properties of solutions, problem-solving techniques. Credit will not be given for both CHEM 1030 and CHEM 1110 or CHEM 1117.

**CHEM 1031 FUNDAMENTAL CHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 1030. Science Core. Laboratory experiments emphasizing course material in CHEM 1030. Credit will not be given for both CHEM 1031 and CHEM 1111 or CHEM 1118.

**CHEM 1040 FUNDAMENTAL CHEMISTRY II (3).** LEC. 3. Pr., CHEM 1030 or CHEM 1110 or CHEM 1117. Science Core. Chemical kinetics; chemical equilibrium; acids and bases; calculations of pH; equilibrium constants and thermodynamical properties; electrochemistry; descriptive chemistry. Credit will not be given for both CHEM 1040 and CHEM 1120 or CHEM 1127.

**CHEM 1041 FUNDAMENTAL CHEMISTRY II LABORATORY (1).** LAB. 3. Pr., CHEM 1031 or CHEM 1111 or CHEM 1118. Science Core. Laboratory experiments emphasizing course material in CHEM 1040. Credit will not be given for both CHEM 1041 and CHEM 1121 or CHEM 1128.

**CHEM 1110 GENERAL CHEMISTRY I (3).** LEC. 3. Pr., P/C, MATH 1610. Science Core. Chemical principles for chemistry and related majors. Atomic and molecular theory, periodicity, chemical reactions, Stoichiometry, gases, thermochemistry, bonding, molecular geometries, liquids, solids, and solutions. Credit will not be given for both CHEM 1110 and CHEM 1030 or CHEM 1117.

**CHEM 1111 GENERAL CHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 1110. Science Core. Laboratory experiments emphasizing course material in CHEM 1110. Credit will not be given for both CHEM 1111 and CHEM 1031 or CHEM 1118.

**CHEM 1117 HONORS GENERAL CHEMISTRY I (3).** LEC. 3. Pr., Honors College. Science Core. General chemistry for students in the honors program. Topics similar to CHEM 1110, but covered in more depth. Credit will not be given for both CHEM 1117 and CHEM 1030 or CHEM 1110.

**CHEM 1118 HONORS GENERAL CHEMISTRY I LABORATORY (1).** LAB. 3. Science Core. Laboratory experiments emphasizing course material in CHEM 1117. Credit will not be given for both CHEM 1118 and CHEM 1031 or CHEM 1111.

**CHEM 1120 GENERAL CHEMISTRY FOR SCIENTISTS AND ENGINEERS II (3).** LEC. 3. Pr., CHEM 1110 or CHEM 1117. Science Core. Continuation of CHEM 1110. Chemical kinetics, chemical equilibrium, acids and bases, thermodynamics, electrochemistry, representative element and transition metal chemistry. Credit will not be given for both CHEM 1120 and CHEM 1040 or CHEM 1127.

**CHEM 1121 GENERAL CHEMISTRY II LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 1120 and CHEM 1111. Science Core. Laboratory experiments emphasizing course material in CHEM 1120. Credit will not be given for both CHEM 1121 and CHEM 1041 or CHEM 1128.

**CHEM 1127 HONORS GENERAL CHEMISTRY II (3).** LEC. 3. Pr., Honors College. CHEM 1117. Science Core. General chemistry for students in the honors program. Topics similar to CHEM 1120, but covered in more depth. Credit will not be given for both CHEM 1127 and CHEM 1040 or CHEM 1120.

**CHEM 1128 HONORS GENERAL CHEMISTRY II LABORATORY (1).** LAB. 3. Pr., Honors College. CHEM 1118 and CHEM 1127. Science Core. Laboratory experiments emphasizing course material in CHEM 1127. Credit will not be given for both CHEM 1128 and CHEM 1041 or CHEM 1121.

**CHEM 2030 SURVEY OF ORGANIC CHEMISTRY (3).** LEC. 3. Pr., CHEM 1040 or CHEM 1120 or CHEM 1127. Structure, nomenclature and reactions of the functional group classes of organic compounds polymers, and molecules of biological interest. Credit will not be given for both CHEM 2030 and CHEM 2070.

**CHEM 2070 ORGANIC CHEMISTRY I (3).** LEC. 3. Pr., CHEM 1040 or CHEM 1120 or CHEM 1127. In-depth study of organic chemistry including structure, nomenclature, reactions, reaction mechanisms, stereochemistry, synthesis and spectroscopic structure determination organized by the functional group approach. Considers alkanes, alkenes, alkynes, alkyl halides, alcohols, ethers, and aromatic compounds. Credit will not be given for both CHEM 2070 and CHEM 2030.

**CHEM 2071 ORGANIC CHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 2070 or CHEM 1041 or CHEM 1128 or CHEM 1121. Laboratory for CHEM 2070.

**CHEM 2080 ORGANIC CHEMISTRY II (3).** LEC. 3. Pr., CHEM 2070. Continuation of CHEM 2070. Aldehydes, ketones, amines, carboxylic acids, esters, amides, anhydrides, polymers, carbohydrates and amino acids.

**CHEM 2081 ORGANIC CHEMISTRY II LABORATORY (1).** LAB. 3. Pr., CHEM 2071 and P/C, CHEM 2080. Laboratory for CHEM 2080.

**CHEM 3000 CHEMICAL LITERATURE (1).** LEC. 1. Pr., CHEM 2080. Chemical literature with emphasis on primary and secondary sources and the various computer data bases available.

**CHEM 3050 ANALYTICAL CHEMISTRY (3).** LEC. 3. Pr., CHEM 1040 or CHEM 1120 or CHEM 1127. Theory and application of volumetric, potentiometric and photometric chemical analysis.

**CHEM 3051 ANALYTICAL CHEMISTRY LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 3050. Analytical techniques applied to chemical analysis.

**CHEM 3160 SURVEY OF PHYSICAL CHEMISTRY (3).** LEC. 3. Pr., CHEM 1040 or (CHEM 1120 or CHEM 1127). The principles of physical chemistry.

**CHEM 4070 PHYSICAL CHEMISTRY I (3).** LEC. 3. Pr., (CHEM 1040 or CHEM 1120 or CHEM 1127) and MATH 2630 and MATH 2650 and PHYS 1610. Principles of chemical thermodynamics, principles of application to problems of chemical interest.

**CHEM 4071 PHYSICAL CHEMISTRY I LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 4070.

**CHEM 4080 PHYSICAL CHEMISTRY II (3).** LEC. 3. Pr., CHEM 1040 or (CHEM 1120 or CHEM 1127) and MATH 2630 and MATH 2650 and PHYS 1610. Principles of quantum mechanics and spectroscopy; application in molecular structure and in statistical thermodynamics.

**CHEM 4081 PHYSICAL CHEMISTRY II LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 4080. Laboratory for CHEM 4080.

**CHEM 4100 INORGANIC CHEMISTRY (3).** LEC. 3. Pr., CHEM 4080 or CHEM 3160. Principles of inorganic chemistry emphasizing periodic properties, bonding, structure and symmetry, the solid state, acid-base theory and coordination chemistry.

**CHEM 4101 INORGANIC CHEMISTRY LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 4100. Synthesis and characterization of a variety of inorganic compounds.

**CHEM 4110 INORGANIC CHEMISTRY II (3).** LEC. 3. Pr., CHEM 4100. Survey of main group, transition metal and organometallic chemistry. Departmental approval.

**CHEM 4111 INORGANIC CHEMISTRY LABORATORY II (1).** LAB. 3. Pr., CHEM 4101 and P/C, CHEM 4110. Laboratory for CHEM 4110.

**CHEM 4130 INSTRUMENTAL ANALYSIS (3).** LEC. 3. Pr., CHEM 4080 or CHEM 3160. Fundamental concepts used in instrumental analytical chemistry emphasizing spectrophotometric, electroanalytical and chromatographic analysis.

**CHEM 4131 INSTRUMENTAL ANALYSIS LABORATORY (1).** LAB. 3. Pr., P/C, CHEM 4130. Laboratory for CHEM 4130.

**CHEM 4950 UNDERGRADUATE SEMINAR (1).** LEC. 1. Oral presentation and discussion of research in the area of specialization.

**CHEM 4980 UNDERGRADUATE RESEARCH IN CHEMISTRY (3).** LAB. 9. This is an individual problem course. Each student will work under the direction of a staff member on some problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CHEM 4997 HONORS THESIS (1-3).** LEC. 3. Pr., Honors College. Honors College Members Only; Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CHEM 5180 BIOCHEMISTRY I (3).** LEC. 3. Pr., CHEM 2080. Molecular Structure: classification, structure and reactions of the major constituents of living matter. Also includes binding phenomena and bioenergetics. Credit will not be given for both CHEM 5180 and BCHE 5180.

**CHEM 5181 BIOCHEMISTRY I LABORATORY (1).** LEC. 3. Pr., P/C, CHEM 5180 or P/C, BCHE 5180. Identification and quantification of compounds from the important biochemical classes. Examples include amino acid chromatography, dipeptide sequencing, glucose concentration etc. Credit will not be given for both CHEM 5181 and BCHE 5181

**CHEM 5190 BIOCHEMISTRY II (3).** LEC. 3. Pr., CHEM 2080. Metabolism: survey of design and regulation of the major catabolic and biosynthetic (including photosynthesis) metabolic pathways. An overview of the flow of genetic information. Credit will not be given for both CHEM 5190 and BCHE 5190.

**CHEM 5191 BIOCHEMISTRY II LABORATORY (1).** LEC. 3. Pr., P/C, CHEM 5190 or P/C, BCHE 5190. Partial purification, Kinetic studies and characterization of enzymes and nucleotides from various plants, animals and bacteria. Credit will not be given for both CHEM 5191 and BCHE 5191.

**CHEM 5280 COMPUTATIONAL CHEMISTRY (4).** LEC. 3, LAB. 3. Pr., CHEM 2080 and CHEM 4080. Modern computational chemistry including molecular mechanics and quantum mechanical calculations.

## Chemical Engineering (CHEN)

**CHEM 6180 BIOCHEMISTRY I (3).** LEC. 3. Pr., CHEM 2080. Molecular Structure: classification, structure and reactions of the major constituents of living matter. Also includes binding phenomena and bioenergetics. Credit will not be given for both CHEM 6180 and BCHE 6180.

**CHEM 6190 BIOCHEMISTRY II (3).** LEC. 3. Pr., CHEM 6180. Metabolism: survey of design and regulation of the major catabolic and biosynthetic (including photosynthesis) metabolic pathways. An overview of the flow of genetic information. Credit will not be given for both CHEM 6190 and BCHE 6190. Departmental approval.

**CHEM 6280 COMPUTATIONAL CHEMISTRY (4).** LEC. 3, LAB. 3. Pr., CHEM 2080 and CHEM 4080. Modern computational chemistry including molecular mechanics and quantum mechanical calculations.

**CHEM 7100 ADVANCED INORGANIC CHEMISTRY (3).** LEC. 3. Current concepts of inorganic chemistry with an emphasis on theory, structure, bonding and reactivity. Departmental approval.

**CHEM 7110 PHYSICAL METHODS IN INORGANIC CHEMISTRY (3).** LEC. 3. Pr., CHEM 7100 or equivalent. Theory and application of techniques for obtaining information inorganic compounds including magnetism, multinuclear NMR, mass spectrometry, x-ray diffraction, vibrational and electronic spectroscopies.

**CHEM 7120 ORGANOMETALLIC CHEMISTRY (3).** LEC. 3. Pr., CHEM 7100. Main group and transition metal organometallic chemistry. Departmental approval.

**CHEM 7160 ADVANCED TOPICS IN INORGANIC CHEMISTRY (3).** LEC. 3. Pr., CHEM 7100. Currently active research areas in inorganic chemistry. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**CHEM 7200 ADVANCED ORGANIC CHEMISTRY I (3).** LEC. 3. Structure and mechanism in organic chemistry. Departmental approval.

**CHEM 7210 ADVANCED ORGANIC CHEMISTRY II (3).** LEC. 3. Pr., CHEM 7200. Physical organic chemistry including spectroscopic methods.

**CHEM 7220 ADVANCED ORGANIC CHEMISTRY III (3).** LEC. 3. Pr., CHEM 7200. Current synthetic methods of organic chemistry.

**CHEM 7260 SPECIAL TOPICS IN ORGANIC CHEMISTRY (1-3).** LEC. Pr., CHEM 7200. Advanced course in a research area in organic chemistry which is of mutual interest to graduate students and the instructor. Course may be repeated for a maximum of 6 credit hours.

**CHEM 7300 ADVANCED PHYSICAL CHEMISTRY (3).** LEC. 3. Topics of general and current interest; may vary from year to year.

**CHEM 7330 CHEMICAL KINETICS (3).** LEC. 3. Theoretical and experimental aspects of reaction rates. The mathematics and characterization of chemically reacting systems.

**CHEM 7350 QUANTUM AND STATISTICAL MECHANICS (3).** LEC. 3. Pr., CHEM 7300. A quantum mechanical and statistical approach to molecular structure and chemistry.

**CHEM 7370 SPECIAL TOPICS IN PHYSICAL CHEMISTRY (1-3).** LEC. 3. Pr., CHEM 7300. Modern topics in advanced physical chemistry. Course may be repeated for a maximum of 3 credit hours.

**CHEM 7380 MOLECULAR SPECTROSCOPY (3).** LEC. 3. Pr., CHEM 7300. Theory and application of optical and magnetic resonance spectroscopy.

**CHEM 7500 ADVANCED ANALYTICAL CHEMISTRY (3).** LEC. 3. Analytical principles, applications and methods, mathematical interpretations and current developments.

**CHEM 7510 ELECTROANALYTICAL CHEMISTRY (3).** LEC. 3. Pr., CHEM 7500. Analytical applications of electrochemistry.

**CHEM 7520 SURFACE CHEMISTRY (3).** LEC. 3. Pr., CHEM 7500. Basic concepts in surface chemistry and surface analytical methods.

**CHEM 7530 ADVANCES IN BIOANALYTICAL CHEMISTRY (3).** LEC. 3. Pr., CHEM 7500. Analytical Chemistry of microfluidic devices and "Lab on a chip." New methods of miniaturization of separations and analysis with emphasis on bioanalytical applications.

**CHEM 7750 FORMAL PRESENTATIONS IN MODERN CHEMISTRY (1).** LEC. 1. Oral presentations skills will be developed with a focus on the dissemination of new discoveries in the field of Chemistry. Course may be repeated for a maximum of 6 credit hours.

**CHEM 7930 DIRECTED INDIVIDUAL STUDY (1-15).** IND. Credit to be arranged. Course may be repeated for a maximum of 15 credit hours.

**CHEM 7950 SEMINAR (1).** SEM. 1. SU. Course may be repeated for a maximum of 6 credit hours.

**CHEM 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topics.

**CHEM 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topics.

## LABORATORY TECHNOLOGY (LABT)

**LABT 1010 ORIENTATION (1).** LEC. 1. Aims, objectives and requirements for careers in medical and laboratory technology.

**LABT 4010 HEMATOLOGY (5).** LEC. 3, LAB. 6. Pr., CHEM 2070. Origin, maturation, morphology, function of normal blood cells and abnormalities in diseased blood. Routine and specialty hematological laboratory techniques.

**LABT 4050 CLINICAL IMMUNOHEMATOLOGY/PARASITOLOGY (5).** LEC. 3, LAB. 6. Pr., CHEM 2070 and BIOL 1020. Immunogenetics, clinical significance of blood group antigens and antibodies, theory and techniques of serological study of human blood groups. Human parasites, life cycles and disease processes.

**LABT 4250 CLINICAL BIOCHEMISTRY/INSTRUMENTATION (4).** LEC. 3, LAB. 3. Pr., BCHE 5180 or BCHE 3200. Biochemistry/physiology of systems in the body of elements in body fluids during the normal and abnormal processes. Theoretical and practical application of Lab techniques, atomic absorption, gas chromatograph-FID, HPLC, spectroscopy, spectrophotometry, ion selective electrodes and RIA used in analysis of body fluids.

**LABT 4910 CLINICAL PRACTICUM (0).** PRA.

**LABT 4920 CLINICAL INTERNSHIP (0).** PRA. Pr., LABT 4910. Final term of clinical internship.

## Chemical Engineering (CHEN)

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**CHEN 2AA0 CHEMICAL ENGINEERING PROGRESS ASSESSMENT I (0).** LAB. SU. Pr., P/C, CHEN 2100. Progress assessment examination in basic science, general chemistry, physics, basic math principles (geometry, algebra), multivariable calculus, chemical engineering process principles (mass and energy balances).

**CHEN 2100 PRINCIPLES OF CHEMICAL ENGINEERING (4).** LEC. 3, LAB. 3. Pr., (CHEM 1110 or CHEM 1117 or CHEM 1030) and (MATH 1610 or MATH 1617 or MATH 1710) and (P/C, CHEM 1120 or P/C, CHEM 1127 or P/C, CHEM 1040) and (P/C, MATH 1620 or P/C, MATH 1627 or P/C, MATH 1720) and (P/C, PHYS 1600 or P/C, PHYS 1607). Application of multi component material and energy balances to chemical processes involving phase changes and chemical reactions.

**CHEN 2610 TRANSPORT I (3).** LEC. 3. Pr., (PHYS 1600 or PHYS 1607) and CHEN 2100 and (P/C, MATH 2630 or P/C, MATH 2637) and (P/C, ENGR 2010). Introduction to fluid statics and dynamics; dimensional analysis; compressible and incompressible flows; design of flow systems, introduction to fluid solids transport including fluidization, flow through process media and multiphase flows.

**CHEN 3090 PULP AND PAPER TECHNOLOGY (3).** LEC. 3. Pr., (CHEM 1030 or CHEM 1110 or CHEM 1117) and ENGR 2010. An introductory course on the technology of pulp and paper manufacturing with emphasis on raw materials, pulping, bleaching, paper making, coating and environmental control. For students with no previous formal pulp and paper background.

**CHEN 3370 PHASE AND REACTION EQUILIBRIA (3).** LEC. 3. Pr., (MATH 2630 or MATH 2637) and ENGR 2010 and CHEN 2100 and (P/C, CHEM 3600). Molecular thermodynamics of phase and chemical reaction equilibria including non-ideal thermodynamics and multi component applications. (ENGR 2010 and CHEN 2100 require a grade of C or better).

**CHEN 3410 CREATIVITY AND CRITICAL THINKING IN ENGINEERING (3).** LEC. 3. Application of creativity and critical thinking principles to effectively approach solving engineering problems. Convincing presentation of information to technical audiences.

**CHEN 3600 COMPUTER-AIDED CHEMICAL ENGINEERING (3).** LEC. 2, LAB. 3. Pr., COMP 1200 and MATH 2650 and CHEN 2610. General and structured programming concepts, numerical methods, and introductory probability and statistics concepts. Application to chemical engineering problems involving material and energy balances and transport process, data validation, and analysis. CHEN 2610 requires a grade of C or better).

**CHEN 3620 TRANSPORT II (3).** LEC. 3. Pr., (MATH 2630 or MATH 2637) and ENGR 2010 and CHEN 2610 and (P/C, CHEM 3600). Fundamentals and applications of heat and mass transfer in chemical processes including conduction, convection, and radiation, heat exchange, evaporation, chemical reaction gas absorption, drying and humidification. (ENGR 2010 and CHEN 2610 require a grade of C or better).

**CHEN 3650 CHEMICAL ENGINEERING ANALYSIS (3).** LEC. 2, LAB. 3. Pr., CHEN 3600 and CHEN 3620 and CHEN 2AA0. Mathematical modeling, analytical, numerical and statistical analysis of chemical processes. (CHEN 3600 and CHEN 3620 require a grade of C or better).

**CHEN 3660 CHEMICAL ENGINEERING SEPARATIONS (3).** LEC. 3. Pr., CHEN 3370 and CHEN 3620. Separations processes including distillation, extraction, membrane separation, and other separation operations. (CHEN 3370 and CHEN 3620 require a grade of C or better).

**CHEN 3700 CHEMICAL REACTION ENGINEERING (3).** LEC. 3. Pr., MATH 2650 and CHEN 2610 and ENGR 2010. Design of chemical reactors with homogeneous reaction systems. (CHEN 2610 and ENGR 2010 require a grade of C or better).

**CHEN 3820 CHEMICAL ENGINEERING LABORATORY I (2).** LEC. 1, LAB. 3. Pr., CHEN 3600 and CHEN 3620. Experimental study of chemical thermodynamics, heat and momentum transfer with analytical, numerical, and statistical analysis.

## Chemical Engineering (CHEN)

**CHEN 3AA0 CHEMICAL ENGINEERING PROGRESS ASSESSMENT II (0).** LAB. SU. Pr., CHEN 2AA0 and P/C, CHEN 3370 and P/C, CHEN 3650 and P/C, CHEN 3700. Progress assessment examination in thermodynamics, linear differential equations, organic chemistry, transport phenomena (fluid mechanics, heat, mass transfer), phase and reaction equilibria, reaction engineering, design and conduction of experiments, analysis and interpretation of data, professional, ethical, societal and contemporary issues.

**CHEN 4100 PULP AND PAPER PROCESSING LABORATORY (2).** LAB. 6. Pr., CHEN 2610 and CHEN 3090 and CHEN 3820. Experimental study of pulping and papermaking operations. Departmental approval.

**CHEN 4160 PROCESS DYNAMICS AND CONTROL (3).** LEC. 2, LAB. 3. Pr., CHEN 3600 and CHEN 3650. Dynamic modeling of chemical processes, feedback systems and analog controller tuning and design, sequential control systems. (CHEN 3600 and CHEN 3650 require a grade of C or better).

**CHEN 4170 DIGITAL PROCESS CONTROL (3).** LEC. 2, LAB. 3. Pr., CHEN 3650. Analysis of open loop and closed loop process control systems. Introduction to digital control systems including operator/machine interface design and operation. Application of process dynamics and digital control systems in experimental control laboratory. (CHEN 3650 requires a grade of C or better).

**CHEN 4180 ADVANCED DIGITAL PROCESS CONTROL (3).** LEC. 2, LAB. 3. Pr., CHEN 4170. Application of sequential, closed loop and open loop process control principles to actual industrial and experimental control laboratory process. (CHEN 4170 requires a grade of C or better).

**CHEN 4450 PROCESS ECONOMICS AND SAFETY (3).** LEC. 2, LAB. 3. Pr., CHEM 2080 and CHEN 3370 and CHEN 3650 and CHEN 3660 and CHEN 3700. Fundamentals and applications of process economics and design, computer-aided cost estimation, profitability analysis and process improvement. Application of chemical process safety, risk assessment and management, hazard and operability analysis, chemical engineering principles for risk reduction. (CHEN 3370, CHEN 3650, CHEN 3660 and CHEN 3700 require a grade of C or better).

**CHEN 4460 PROCESS SIMULATION SYNTHESIS AND OPTIMIZATION (2).** LEC. 1, LAB. 3. Pr., CHEM 2080 and CHEN 3370 and CHEN 3650 and CHEN 3660 and CHEN 3700. Fundamentals of computer-aided simulation and synthesis. Process integration and optimization principles including their applications in design, retrofitting and operation of chemical processes. (CHEN 3370, CHEN 3650, CHEN 3660 and CHEN 3700 require a grade of C or better).

**CHEN 4470 PROCESS DESIGN PRACTICE (3).** LEC. 2, LAB. 3. Pr., CHEN 3AA0 and CHEN 4450 and CHEN 4460. Flow sheet simulation and techno-economic analysis applied to complex, open-ended chemical processes. Screening of alternatives and economic optimizations. Capstone design course.

**CHEN 4560 PULP AND PAPER PROCESS SIMULATION (2).** LEC. 1, LAB. 3. Pr., CHEM 2080 and CHEN 3090 and CHEN 3370 and CHEN 3650 and CHEN 3660 and CHEN 3700 and P/C, CHEN 4100 and P/C, CHEN 5110. Fundamentals of microcomputer process simulation with applications to the pulp and paper industry. Design of pulp and paper unit operations and small scale processes using commercial simulation software. (CHEN 3090, CHEN 3370, CHEN 3650, CHEN 3660 and CHEN 3700 require a grade of C or better).

**CHEN 4570 PULP AND PAPER PROCESS DESIGN (3).** LEC. 2, LAB. 3. Pr., CHEN 3AA0 and CHEN 4450 and CHEN 4560. Application of process simulation and process economics to complex, open-ended design, retrofitting and operation problems in pulp and paper. Design of pulp and paper unit operations and processes. Screening of alternatives and economic optimization.

**CHEN 4630 INTRODUCTORY TO TRANSPORT PHENOMENA (3).** LEC. 3. Pr., CHEN 3620 and CHEN 3650. Application of chemical engineering analysis to momentum, heat and mass transport problems for advanced undergraduate students preparing for graduate school. (CHEN 3620 and CHEN 3650 require a grade of C or better).

**CHEN 4860 CHEMICAL ENGINEERING LABORATORY II (2).** LEC. 1, LAB. 3. Pr., CHEN 3660 and CHEN 3820 and P/C, CHEN 3700. Experimental study of mass transfer, separations and reaction engineering. Emphasis is on open-ended laboratory projects with electronic instrumentation; experimental design with numerical and statistical analysis of data.

**CHEN 4880 PULP AND PAPER ENGINEERING LABORATORY (3).** LAB. 9. Pr., CHEN 4100 and CHEN 5110. Comprehensive open-ended projects on pulp and paper topics.

**CHEN 4930 DIRECTED STUDIES (1).** LEC. 1. Supervised study in specialized areas of chemical engineering. Topic must be arranged with instructor during pre-registration. Project report.

**CHEN 4970 SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-10).** LEC. Topical courses in special areas. Topic must be arranged with instructor during pre-registration. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**CHEN 4980 UNDERGRADUATE RESEARCH (1-3).** IND. Pr., 3 GPA. Individual and small group projects. Topic must be arranged with instructor during preregistration. Research Report. Departmental approval; GPA of 3.0 or higher. Course may be repeated for a maximum of 3 credit hours.

**CHEN 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CHEN 5110 PULP AND PAPER ENGINEERING (3).** LEC. 3. Pr., CHEN 3090 and CHEN 3620 and CHEN 3700 and P/C, CHEN 4450. Chemical and engineering principles in the manufacturing of pulp and paper. (CHEN 3090, CHEN 3620, and CHEN 3700 require a grade of C or better).

**CHEN 5120 SURFACE AND COLLOID SCIENCE (3).** LEC. 3. Pr., CHEN 3620 and CHEN 4100. Fundamentals of surface and colloid science with applications in pulping and papermaking, including sizing, retention and drainage, charge measurements, dry/wet strength additives, fillers, colorants, foams, pitch and deposits. (CHEN 3620 and CHEN 4100 require a grade of C or better).

**CHEN 5400 MOLECULAR ENGINEERING (3).** LEC. 3. Pr., CHEM 2080 and CHEN 3370. Introduction to how molecular structure and long range microstructure affect the properties of chemical engineering products and how this knowledge can be used to design chemical engineering products for specific applications. (CHEN 3370 requires a grade of C or better).

**CHEN 5410 MACROMOLECULAR SCIENCE AND ENGINEERING (3).** LEC. 3. Pr., CHEM 2080 and CHEN 3370. Statistical mechanics of chain molecules; thermodynamics of polymer solutions; dilute, semi-dilute, and concentrated solutions and gels; polymer physics; scaling concepts in polymer physics; reptation theory (deGennes, Doi, Edwards) and molecular dynamics; phase separations; crystallization of polymers; rubber elasticity theory; mechanical analysis; viscoelasticity; diffusion theory of polymers; surface properties of polymers. (CHEN 3370 requires a grade of C or better).

**CHEN 5420 POLYMER CHEMICAL ENGINEERING (3).** LEC. 2, LAB. 3. Pr., CHEM 2070 and CHEN 3620 and CHEN 5410. Polymer theory, transport phenomena, thermodynamics, membranes, conducting polymers, surfaces, interfaces and processing. (CHEN 3620 and CHEN 5410 require a grade of C or better).

**CHEN 5430 BUSINESS ASPECTS OF CHEMICAL ENGINEERING (3).** LEC. 3. The procession of activities required to successfully commercialize and market new chemical-engineering-based technologies to the consumer and process industries. Departmental approval.

**CHEN 5440 ELECTROCHEMICAL ENGINEERING (3).** LEC. 3. Pr., CHEN 3370 and CHEN 3620 and CHEN 3700. Thermodynamics, electrode kinetics and transport phenomena of electrochemical systems, current and potential distributions, double layer theory, electrochemical processes, power sources, synthesis, corrosion. (CHEN 3370, CHEN 3620, and CHEN 3700 require a grade of C or better).

**CHEN 5650 HAZARDOUS MATERIALS MANAGEMENT AND ENGINEERING (3).** LEC. 3. Pr., (CHEM 2030 or CHEM 2080) and (CHEN 3820 or CIVL 5210). Fundamental principles and regulatory information related to hazardous material and process safety management and engineering, dispersion of chemicals, hazard and operability analysis, chemical engineering principles for risk education.

**CHEN 5660 MACROSCALE ASSEMBLY AND APPLICATIONS OF NANOMATERIALS (3).** LEC. 3. Production of macroscopic assemblies and structures from nanomaterials. Processing and applications of inorganic, organic, biological and hybrid nanomaterials. Departmental approval.

**CHEN 5670 POLLUTION PREVENTION ENGINEERING (3).** LEC. 3. Pr., CHEM 2080 and CHEN 3370 and CHEN 3620 and CHEN 3660 and CHEN 3700. Chemical and engineering principles applied to pollution prevention. Theory and practice of basic separation methods, reaction engineering, process controls, and other fundamental chemical engineering disciplines as well as regulatory requirements to prevent unnecessary waste generation. Case studies. (CHEN 3370, CHEN 3620, CHEN 3660, and CHEN 3700 require a grade of C or better).

**CHEN 5700 ADVANCED SEPARATION PROCESSES (3).** LEC. 3. Pr., CHEN 3370 and CHEN 3660. Advanced treatment of modern chemical engineering separation processes. Theory and practice of staged multi-component mass transfer operations, non-ideal multi-phase separations and continuous rate processes. (CHEN 3370 and CHEN 3660 require a grade of C or better).

**CHEN 5800 BIOCHEMICAL ENGINEERING (3).** LEC. 3. Pr., CHEN 3700. Bioreactor design. Analysis of enzyme and microbial processes. (CHEN 3700 requires a grade of C or better).

**CHEN 5810 BIOMEDICAL ENGINEERING (3).** LEC. 3. Pr., CHEM 2080 and CHEN 3620 and CHEN 3700. Application of chemical engineering principles to the study of medical physiology. Human biochemistry, anatomy and physiology, rheological properties of blood and synovial fluid, rheology of cell membranes. Biomedical fluid mechanics and heat and mass transfer. (CHEN 3620 and CHEN 3700 require a grade of C or better).

**CHEN 5820 ADVANCED TOPICS IN ENVIRONMENTAL BIOTECHNOLOGY (3).** LEC. 3. Application of biotechnology to environmental process treatment, bioremediation and bioreactor development.

**CHEN 5970 ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-6).** LEC. Topical courses in areas for advanced undergraduate and graduate students. Topics must be arranged with instructor during preregistration. Departmental approval. Course may be repeated for a maximum of 24 credit hours.

**CHEN 6110 PULP AND PAPER ENGINEERING (3).** LEC. 3. Chemical and engineering principles in the manufacturing of pulp and paper.

## Chemical Engineering (CHEN)

**CHEN 6120/6126 SURFACE AND COLLOID SCIENCE (3).** LEC. 3. Fundamentals of surface and colloid science with applications in pulping and papermaking, including sizing, retention and drainage, charge measurements, dry/wet strength additives, fillers, colorants, foams, pitch and deposits.

**CHEN 6400/6406 MOLECULAR ENGINEERING (3).** LEC. 3. Introduction to how molecular structure and long range microstructure affect the properties of chemical engineering products and how this knowledge can be used to design chemical engineering products for specific applications.

**CHEN 6410/6416 MACROMOLECULAR SCIENCE AND ENGINEERING (3).** LEC. 3. Statistical mechanics of chain molecules; thermodynamics of polymer solutions; dilute, semi-dilute, and concentrated solutions and gels; polymer physics; scaling concepts in polymer physics; reptation theory (deGennes, Doi, Edwards) and molecular dynamics; phase separations; crystallization of polymers; rubber elasticity theory; mechanical analysis; viscoelasticity; diffusion theory of polymers; surface properties of polymers.

**CHEN 6420/6426 POLYMER CHEMICAL ENGINEERING (3).** LEC. 3. Polymer rheology, transport phenomena, thermodynamics, membranes, conducting polymers, surfaces, interfaces and processing.

**CHEN 6430/6436 BUSINESS ASPECTS OF CHEMICAL ENGINEERING (3).** LEC. 3. The procession of activities required to successfully commercialize and market new chemical-engineering-based technologies to the consumer and process industries. Departmental approval.

**CHEN 6440/6446 ELECTROCHEMICAL ENGINEERING (3).** LEC. 3. Thermodynamics, electrode kinetics and transport phenomena of electrochemical systems, current and potential distributions, double layer theory, electrochemical processes, power sources, synthesis, corrosion.

**CHEN 6650/6656 HAZARDOUS MATERIALS MANAGEMENT AND ENGINEERING (3).** LEC. 3. Fundamental principles and regulatory information related to hazardous material and process safety management and engineering, dispersion of chemicals, hazard and operability analysis, chemical engineering, principles for risk education.

**CHEN 6660/6666 MACROSCALE ASSEMBLY AND APPLICATIONS OF NANOMATERIALS (3).** LEC. 3. Production of macroscopic assemblies and structures from nanomaterials. Processing and applications of inorganic, organic, biological and hybrid nanomaterials. Departmental approval. May count either CHEN 6660 or CHEN 6666.

**CHEN 6670/6676 POLLUTION PREVENTION ENGINEERING (3).** LEC. 3. Chemical and engineering principles applied to pollution prevention. Theory and practice of flotation, coalescence, micro- and ultra-filtration, de-emulsification, polymer coagulation and other methods. Case studies.

**CHEN 6700/6706 ADVANCED SEPARATION PROCESSES (3).** LEC. 3. Advanced treatment of modern chemical engineering separation processes. Theory and practice of staged multi-component mass transfer operations, non-ideal multi-phase separations and continuous rate processes.

**CHEN 6800/6806 BIOCHEMICAL ENGINEERING (3).** LEC. 3. Bioreactor design. Analysis of enzyme and microbial processes.

**CHEN 6810/6816 BIOMEDICAL ENGINEERING (3).** LEC. 3. Application of chemical engineering principles to the study of medical physiology. Human biochemistry, anatomy, and physiology, rheological properties of blood and synovial fluid, rheology of cell membranes. Biomedical fluid mechanics and heat and mass transfer.

**CHEN6820/6826 ADVANCED TOPICS IN ENVIRONMENTAL BIOTECHNOLOGY (3).** LEC. 3. Application of biotechnology to environmental process treatment, bioremediation and bioreactor development. Departmental approval.

**CHEN 6970/6976 ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-6).** LEC. Topical courses in areas for advanced undergraduate and graduate students. Topics must be arranged with instructor during preregistration. Departmental approval. Course may be repeated for a maximum of 24 credit hours.

**CHEN 7020/7026 INTERFACIAL PHENOMENA (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Fundamental analyses of interfacial phenomena at liquid/gas, liquid/liquid and solid/liquid interfaces.

**CHEN 7100/7106 TRANSPORT PHENOMENA (3).** LEC. 3. Principles of heat, mass and momentum transport in application of intermediate complexity. Mathematical analysis of transport problems.

**CHEN 7110/7116 CHEMICAL ENGINEERING ANALYSIS AND ADVANCED TRANSPORT PHENOMENA (3).** LEC. 3. Pr., CHEN 7100 or CHEN 7106. Analytical solutions of ordinary and partial differential equations pertaining to transport phenomena and other areas of chemical engineering.

**CHEN 7120/7126 ADVANCED TOPICS IN PAPER PROCESSING OPERATIONS (3).** LEC. 3. Pr., CHEN 6120 or CHEN 6126. Surface and colloidal interactions in the wet end of paper manufacturing. Colloidal stability theory, absorption of macromolecules, flocculation and retention of particles. Wet-end chemistry process control.

**CHEN 7130/7136 ADVANCED PULP AND PAPER ENGINEERING (3).** LEC. 3. Topics in pulping, chemical recovery and papermaking.

**CHEN 7200/7206 CHEMICAL ENGINEERING THERMODYNAMICS (3).** LEC. 3. Chemical reaction and phase equilibrium applied to chemical engineering problems. Properties of multicomponent real gases, liquids, and solids and property

relationships. Criteria for thermodynamic equilibrium and stability, molecular thermodynamics.

**CHEN 7250/7256 CHEMICAL REACTION ENGINEERING (3).** LEC. 3. P/C, CHEN 7100. Analysis and design of homogeneous and heterogeneous chemical reactors. Physicochemical factors and analysis of non-ideal chemical reactor behavior.

**CHEN 7600/7606 ENVIRONMENTAL TRANSPORT (3).** LEC. 3. Pr., (CHEN 7100 or CHEN 7106) and (CHEN 7200 or CHEN 7206) P/C, CHEN 7110. Environmental chemodynamics, interphase equilibrium, reactions, boundary layers, transport mechanisms and models or movement of substances across natural interfaces (air-water-sediment-soil).

**CHEN 7710 INTRODUCTION TO RESEARCH SEMINAR (1).** LEC. 1. SU. P/C, CHEN 7100. Introductory graduate research seminars for entering graduate students.

**CHEN 7720 ADVANCE PROCESS DESIGN SEMINAR (1).** LEC. 1. P/C, CHEN 7100 and CHEN 7200. Fundamentals of advanced process design including process synthesis, simulation, analysis, optimization and integration. Systematic process synthesis tools for screening potential flow sheets.

**CHEN 7900/7906 INDEPENDENT STUDY (1-10).** IND. SU. Supervised study in specialized areas of chemical engineering. Topic must be arranged with instructor during pre-registration. Departmental approval. Course may be repeated for a maximum of 20 credit hours.

**CHEN 7950 GRADUATE SEMINAR (1).** SEM. 1. SU. Seminar. Course may be repeated for a maximum of 12 credit hours.

**CHEN 7970/7976 ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-6).** IND. Topical courses for graduate students. Topics must be arranged with instructor during preregistration. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**CHEN 7990 RESEARCH AND THESIS (1-20).** MST. Credit hours to be arranged.

**CHEN 8000/8006 GRADUATE CHEMICAL ENGINEERING ANALYSIS (2).** LEC. 2. Pr., CHEN 7100. Applications of advanced numerical methods to the analysis of complex chemical engineering problems.

**CHEN 8010 ADVANCED CHEMICAL ENGINEERING NUMERICAL ANALYSIS (2).** LEC. 2. Pr., CHEN 7100 or CHEN 7106. Advanced numerical methods for the analysis of chemical engineering problems. Computer applications.

**CHEN 8020 ADVANCED TOPICS IN THE CHARACTERIZATION OF SURFACE PROPERTIES OF MATERIALS (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Nature of surface and intermolecular forces. Surface chemical characterization of solid surfaces. Adhesion and the role of chemical, physical and mechanical properties of solid surfaces. Modern characterization techniques including scanning probe microscopy, thermodynamic and spectroscopic methods.

**CHEN 8100 ADVANCED TOPICS IN CHEMICAL ENGINEERING PROCESSES (3).** LEC. 3. Pr., CHEN 7110 or CHEN 7116. Advanced concepts in fluid dynamics with special emphasis on applications to chemical engineering, creeping flow, multiphase instabilities, computational fluid mechanics and turbulence.

**CHEN 8110 ADVANCED TOPICS IN HEAT AND MASS TRANSFER (3).** LEC. 3. Pr., CHEN 7110 or CHEN 7116. Application of transport operations to chemical engineering problems containing physical and chemical rate processes. Chemically reacting boundary layers, heat and mass transfer, eddy diffusion, phase change and separation processes.

**CHEN 8210 ADVANCED CHEMICAL ENGINEERING THERMODYNAMICS (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Application of advanced thermodynamics to complex chemical engineering problems including advanced models for electrolyte solutions, critical and supercritical phenomena, high pressure equilibrium, non-equilibrium and surface thermodynamics and molecular modeling.

**CHEN 8220 POLYMER THERMODYNAMICS (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Fundamentals and applications of macromolecular thermodynamics to industrial polymer problems.

**CHEN 8230 CHEMICAL ENGINEERING STATISTICAL THERMODYNAMICS (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Applications of molecular theory and models to the properties of non-ideal gases and liquids using advanced statistical mechanics and chemical thermodynamics.

**CHEN 8270 HETEROGENEOUS CATALYSIS (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Advanced concepts, techniques, applications and principles for the use of heterogeneous catalysts in chemical and environmental processes. Or Departmental approval.

**CHEN 8280 SURFACE CHARACTERIZATION/SOLIDS (3).** LEC. 3. Pr., CHEN 7200 or CHEN 7206. Advanced concepts and techniques in the physical and chemical characterization of solid surfaces by microscopic, spectroscopic and chemical methods including various photon and/or electron spectroscopies, thermal desorption.

**CHEN 8300 PROCESS DYNAMICS AND CONTROL (3).** LEC. 3. Pr., CHEN 7100 or CHEN 7106. P/C, CHEN 7110. Advanced linear and nonlinear chemical process dynamics and control systems.

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**CHEN 8310 PROCESS DYNAMICS AND CONTROL II (2).** LEC. 2. Advanced chemical process dynamics and control.

**CHEN 8320 ADVANCED TOPICS IN CHEMICAL PROCESS COMPUTER CONTROL SYSTEMS (3).** LEC. 2, LAB. 3. Pr., (CHEN 7100 or CHEN 7106). Analysis and design of advanced digital control systems for chemical processes. Introduction to computer communications through dynamic data exchange and peripheral linkage. Experimental application of advanced digital control algorithms to chemical processes.

**CHEN 8340/8346 PROCESS MODELING AND SIMULATION (3).** LEC. 2, LAB. 3. Advances in computer-aided process synthesis, simulation, analysis and optimization including systematic process integration tools for developing and screening potential flow sheets using advanced process simulators.

**CHEN 8990 RESEARCH AND DISSERTATION (1-20).** DSR. Credit hours to be arranged.

### Civil Engineering (CIVL)

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**CIVL 2010 SURVEYING (3).** LEC. 2, LAB. 3. Pr., ENGR 1110 and (MATH 1610 or MATH 1617) and COMP 1200. Civil engineering surveying theory and practice including history of land surveys and U.S. datums; field measurements, office calculations and graphical/digital presentation of spatial data.

**CIVL 3010 CIVIL ENGINEERING ANALYSIS (4).** LEC. 3, LAB. 3. Pr., MATH 2650 and COMP 1200. Applications of calculus and ordinary differential equations, numerical methods, vector algebra, and linear algebraic expressions to practical civil engineering problems. Heavy emphasis on computerized techniques and civil engineering software.

**CIVL 3110 HYDRAULICS (4).** LEC. 3, LAB. 3. Pr., (ENGR 2010 or ENGR 2200) and MATH 2650 and P/C, ENGR 2350 and P/C, CIVL 3010. Introduction to fluid mechanics, fluid properties, hydrostatics, kinematics, dynamics, energy equation, ideal flow and energy losses. Applications of fluid mechanics, pipe flow, fluid measurements, pumps, open channel flow, dimensional analysis and theory of modeling.

**CIVL 3220 WATER AND WASTE TREATMENT (4).** LEC. 3, LAB. 3. Pr., CHEM 1040 and BIOL 3200. Fundamentals of potable water treatment and wastewater treatment and disposal. Treatment systems; operation/ process physics, chemistry, and biology; operation and maintenance issues; regulatory requirements. Credit will not be given to students majoring in Civil Engineering.

**CIVL 3230 INTRODUCTION TO ENVIRONMENTAL ENGINEERING (4).** LEC. 3, LAB. 3. Pr., CHEM 1040 and MATH 2650 and P/C, CIVL 3010. Fundamental principles of environmental engineering, including basic environmental chemistry and microbiology; materials and energy balances; diffusion; chemical equilibrium; kinetics; and chemical reaction engineering.

**CIVL 3310 GEOTECHNICAL ENGINEERING I (4).** LEC. 3, LAB. 3. Pr., CHEM 1040 and ENGR 2070. Soil-forming processes, physical properties of soils, subsurface investigations, clay mineralogy, soil classification, permeability, effective stress, consolidation theory, time-settlement analysis, compaction, shear strength, geosynthetics.

**CIVL 3410 CONSTRUCTION ENGINEERING (3).** LEC. 3. Pr., ENGR 2070. Basic concepts of the construction industry, contractual methods, estimating and scheduling.

**CIVL 3510 TRANSPORTATION ENGINEERING (4).** LEC. 4. Pr., CIVL 2010. Introduction to transportation engineering practice with emphasis on highway facility design, traffic operations, and life-cycle costing.

**CIVL 3610 STRUCTURAL ANALYSIS (4).** LEC. 3, LAB. 3. Pr., ENGR 2070 and P/C, CIVL 3010. Basic structural analysis of determinate and indeterminate structures, deflections by moment-area and virtual work, influence lines, force method and moment-distribution methods of analysis.

**CIVL 3820 CIVIL ENGINEERING MATERIALS (3).** LEC. 2, LAB. 3. Pr., CIVL 3310. Introduction to common materials used in construction of civil facilities including highways; aggregate, concrete, asphalt, and steel.

**CIVL 4110 HYDRAULIC ENGINEERING (3).** LEC. 3. Pr., CIVL 3110. Applications of hydraulics to civil engineering systems: Introductory hydrology, groundwater, open channel flow, closed conduit flow, dams and reservoirs, hydraulic structures, hydraulic machinery and flood damage reduction.

**CIVL 4120 HYDROLOGY (3).** LEC. 3. Pr., STAT 3010 and CIVL 3110. Hydrologic cycle, probability concepts and frequency analysis, precipitation, infiltration, runoff, hydrographs, flood routing, evaporation, subsurface hydrology.

**CIVL 4180 HYDROLOGIC DESIGN (3).** LEC. 3. Pr., STAT 3010 and CIVL 3110. Stormwater hydrology, hydraulic and hydrologic analysis and design of stormwater drainage systems, inlets, storm sewers, open channels, culverts and detention basins.

**CIVL 4220 ENVIRONMENTAL ENGINEERING DESIGN (3).** LEC. 3. Pr., CIVL 4230. Process design of environmental engineering systems.

**CIVL 4230 URBAN HYDRAULIC SYSTEM DESIGN (3).** LEC. 3. Pr., CIVL 3230. Engineering approaches to designing and managing urban water supply, sanitary sewer, storm water collection systems and flood control works.

**CIVL 4310 GEOTECHNICAL ENGINEERING II (3).** LEC. 3. Pr., CIVL 3310. Analysis and design in geotechnical engineering based on principles of soil mechanics and soil behavior. Problems of slope stability, earth pressure and design of earth retaining structures, foundation bearing capacity and settlement.

**CIVL 4420 PROJECT MANAGEMENT (3).** LEC. 3. Pr., CIVL 3410. Planning and management of construction/engineering projects and organizations, project management techniques, skills, and applications.

**CIVL 4490 DESIGNBUILD PROJECT (3).** LEC. 3. Pr., CIVL 4420. Develop a design-build proposal for a civil engineering improvement including engineering study, consideration of alternative designs, and formal written and oral presentation.

**CIVL 4500 TRAFFIC ENGINEERING FUNDAMENTALS (3).** LEC. 3. Pr., CIVL 3510. The fundamental elements of traffic engineering including traffic operations and traffic control devices.

**CIVL 4520 AIRPORT DESIGN (3).** LEC. 3. Pr., CIVL 3510. An analysis of the elements affecting the design of airports including forecasting, runway configuration, capacity analyses, geometric design of runways and taxiways, pavement design and airfield drainage. Departmental approval.

**CIVL 4530 GEOMETRIC DESIGN (3).** LEC. 3. Pr., CIVL 3510. An analysis of the elements affecting the location and design of rural highways, urban highways and arterial streets including design controls and criteria.

**CIVL 4590 TRANSPORTATION DESIGN PROJECT (3).** LEC. 3. Pr., ENGR 1110 and CIVL 3510. Individual senior design project requiring the development of plans for a roadway over a large land segment: horizontal and vertical curves in accord with State and AASHTO standards; topographic terrain features; historical preservation area; minimum elevation; intersection design; earthwork balance.

**CIVL 4600 REINFORCED CONCRETE DESIGN (3).** LEC. 3. Pr., CIVL 3610. Concrete and reinforcing steel properties; analysis and design of reinforced concrete beams, one-way slabs, columns and footings; anchorage of reinforcement.

**CIVL 4650 STRUCTURAL STEEL DESIGN (3).** LEC. 3. Pr., CIVL 3610. Steel properties. Design and analysis of structural steel members in tension, compression, shear, flexure and combined compression and flexure. Bolted and welded connections.

**CIVL 4690 STRUCTURAL DESIGN PROJECT (3).** LEC. 3. Pr., CIVL 4600. Execution of a major comprehensive design of a major structure. Emphasis on the design process, creative thinking, analysis, synthesis, teamwork and communications.

**CIVL 4960 SPECIAL PROBLEMS (1-3).** LEC. Individual student endeavor under staff supervision involving advanced special problems in civil engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CIVL 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CIVL 5110 OPEN CHANNEL HYDRAULICS (3).** LEC. 3. Pr., CIVL 3110. Application of continuity, energy, and momentum analyses to problems of open channel flow. Topics include rapidly and gradually varied flow, unsteady flow, flood routing, computational methods, design concepts and applications.

**CIVL 5150 GROUNDWATER HYDRAULICS (3).** LEC. 3. Pr., CIVL 3110. Mechanics of groundwater flow, definitions, conservation of mass, Darcy's law, confined and unconfined flow, steady and transient flow, groundwater transport.

**CIVL 5210 CHEMICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3).** LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic chemistry as applied to environmental engineering: chemical thermodynamics, acid/base equilibrium, solution/dissolution chemistry, redox equilibrium, and chemical kinetics. Departmental approval.

**CIVL 5220 ENVIRONMENTAL ENGINEERING PROCESSES LABORATORY (1).** LAB. 3. Pr., CIVL 3230 Laboratory exploration of the fundamentals and applications of aquatic chemistry, physical-chemical processes and biological processes, as employed in water and wastewater treatment. Departmental approval.

**CIVL 5230 ENVIRONMENTAL HEALTH ENGINEERING (3).** LEC. 3. Application of engineering methodology in environmental health; communicable disease control, insect and rodent control, solid and hazardous wastes, noise, radiological health, legal and administrative considerations, etc. Departmental approval.

**CIVL 5240 AIR POLLUTION (3).** LEC. 3. Nature, sources and effects of air pollutants; effects of atmospheric conditions on dispersion; dispersion modeling, theory and design of control devices; legal/ administrative control. Departmental approval.

**CIVL 5250 BIOLOGICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3).** LEC. 3. Pr., CIVL 3230 Fundamentals of aquatic biology and microbiology as applied to environmental engineering: microbial growth, microbial metabolism, microbial population dynamics, wastewater treatment microbiology, environmental impacts, toxicity testing, and biomonitoring. Departmental approval.

**CIVL 5330 LANDFILLS (3).** LEC. 3. Pr., CIVL 3310. Landfill siting design, construction and operational practices; regulations, terminology, closure regulations and procedures.

**CIVL 5340 GEOSYNTHETICS AND SOIL IMPROVEMENT (3).** LEC. 3. Pr., CIVL 3310. Use of geosynthetics in civil engineering design: reinforcement, retaining walls, filtration, slopes, roads and erosion control. Evaluation and testing of geo-



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synthetics. Improvement of soil properties for civil engineering design: principles and practice of densification, grouting, reinforcement, stone columns, soil nailing.

**CIVL 5410 GEOGRAPHIC INFORMATION SYSTEMS IN CIVIL ENGINEERING (3).** LEC. 3. Pr., CIVL 2010. Basic principles and the development of geographic information systems and practical experiences in the field of civil engineering. Credit will not be given for both CIVL 5410 and CIVL 6410. Departmental approval.

**CIVL 5430 CONSTRUCTION SAFETY AND HEALTH MANAGEMENT (3).** LEC. 3. Pr., CIVL 3410. Various causes of construction accidents and adopted strategies preventing worksite injuries and illness are investigated. Emphasis on OSHA standards, insurance, and health and safety hazards. Credit will not be given for both CIVL 5430 and CIVL 6430/6436. Departmental approval.

**CIVL 5440 CONSTRUCTION EQUIPMENT AND METHODS (3).** LEC. 3. Pr., CIVL 3410 and CIVL 3310 and CIVL 3510. Selection of equipment for heavy construction operations, production rates, owning and operating costs, fleet management.

**CIVL 5460 PROJECT ESTIMATING (3).** LEC. 3. Pr., CIVL 3410. Conceptual and definitive estimates, overhead and profit determination; claim change order pricing.

**CIVL 5480 LEGAL ASPECTS OF CIVIL ENGINEERING PRACTICE (3).** LEC. 3. Pr., CIVL 3410. Covered is the law of contracts, agency, association, property, and labor law, studied generally and in the context that the practicing civil engineer encounters them. Departmental approval.

**CIVL 5500 TRAFFIC ENGINEERING ANALYSIS (3).** LEC. 3. Pr., CIVL 3510. Capacity analysis of rural and suburban highways, 2-lane highways, freeways, weaving sections, ramps and intersections.

**CIVL 5510 TRAFFIC CONTROL SYSTEMS DESIGN (3).** LEC. 3. Pr., CIVL 3510 and STAT 3010. Fundamental design concepts for highway traffic control systems. Control requirements and warrants: hardware operation and equipment selection; development and implementation of timing plans for isolated intersections and intersection networks.

**CIVL 5560 TRANSPORTATION PLANNING (3).** LEC. 3. Pr., CIVL 3510 and STAT 3010. The planning process for urban and regional transportation development. Topics include planning objectives and data requirements; planning inventories; modeling of trip-making behavior, development and evaluation of alternate plans; multimodal applications, including railway operations. Departmental approval.

**CIVL 5580 INTELLIGENT TRANSPORTATION SYSTEMS (3).** LEC. 3. Pr., CIVL 3510. Introduction to intelligent transportation systems, covering applications of information and communication technologies to transportation, with emphasis on operations of traffic management and traveler information systems. Credit will not be given for both CIVL 5580 and CIVL 6580/6586. Departmental approval.

**CIVL 5600 ADVANCED REINFORCED CONCRETE DESIGN (3).** LEC. 3. Pr., CIVL 4600. Analysis and design of continuous beams and one-way slabs, bond and development length, torsion, slenderness effects in columns, two-way slabs, footings, and retaining walls.

**CIVL 5620 PRESTRESSED CONCRETE DESIGN (3).** LEC. 3. Pr., CIVL 4600. Properties and behavior of pre-stressed concrete, pre-stressing systems and end anchorages, analysis and design of beams for flexure and shear, camber and deflection, cable lay-out, pre-stressed concrete slabs.

**CIVL 5630 ADVANCED CONCRETE MATERIALS (3).** LEC. 3. Pr., CIVL 3820. Comprehensive coverage of concrete materials. Topics include cement and aggregate properties; concrete microstructure; mechanical properties; supplementary cementing materials, chemical admixtures; durability issues; special concretes.

**CIVL 5650 ADVANCED STEEL DESIGN (3).** LEC. 3. Pr., CIVL 4650. Composite construction, open web joists, torsion, plate girders, plastic analysis and design, highway bridges, computer applications.

**CIVL 5670 ADVANCED STRUCTURAL ANALYSIS (3).** LEC. 3. Pr., CIVL 3610. Analysis of continuous beams and frames by slope-deflection method. Analysis of beams, trusses, grids, and frames by direct stiffness method. Buckling of planar frames. Use of structural analysis software.

**CIVL 5690 TIMBER DESIGN (3).** LEC. 3. Pr., CIVL 3610. Properties and behavior of timber and plywood; design of timber beams, columns, floor and wall assemblies and wood formwork; timber trusses and laminated arches.

**CIVL 5700 DESIGN FOR LATERAL LOADS (3).** LEC. 3. Pr., CIVL 3610 and (CIVL 4600 or CIVL 4650). Wind meteorology and loadings, effects of wind loadings, building code wind pressures and load provisions, fundamentals of structural vibrations, earthquake characteristics and loadings, building code earthquake provisions, building lateral load resisting systems.

**CIVL 5810 PAVEMENT DESIGN AND CONSTRUCTION (3).** LEC. 3. Pr., CIVL 3820 and CIVL 3310 and CIVL 3510. General concepts, traffic factors, material characterization, layer thickness selection, earthwork, base and sub-base construction, surface course construction, quality control/assurance.

**CIVL 5970 CIVIL ENGINEERING SPECIAL TOPICS (3).** LEC. 3. Special topics of an advanced undergraduate nature pertinent to civil engineering. Specific prerequisites will be announced for each course offering. Credit will not be given for both CIVL 5970 and CIVL 6970. Course may be repeated for a maximum of 6 credit hours.

**CIVL 6110/6116 OPEN CHANNEL HYDRAULICS (3).** LEC. 3. Pr., CIVL 3110. Application of continuity, energy, and momentum analyses to problems of open

channel flow. Topics include rapidly and gradually varied flow, unsteady flow, flood routing, computational methods, design concepts and applications.

**CIVL 6150/6156 GROUNDWATER HYDRAULICS (3).** LEC. 3. Pr., CIVL 3110. Mechanics of groundwater flow, definitions, conservation of mass, Darcy's law, confined and unconfined flow, steady and transient flow, groundwater transport.

**CIVL 6210/6216 CHEMICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3).** LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic chemistry as applied to environmental engineering: chemical thermodynamics, acid/base equilibrium, solution/dissolution chemistry, redox equilibrium, and chemical kinetics. Departmental approval.

**CIVL 6220 ENVIRONMENTAL ENGINEERING PROCESSES LABORATORY (1).** LAB. 3. Pr., CIVL 3230. Laboratory exploration of the fundamentals and applications of aquatic chemistry, physical-chemical processes and biological processes, as employed in water and wastewater treatment. Departmental approval.

**CIVL 6230/6236 ENVIRONMENTAL HEALTH ENGINEERING (3).** LEC. 3. Application of engineering methodology in environmental health; communicable disease control, insect and rodent control, solid and hazardous wastes, noise, radiological health, legal and administrative considerations, etc. Departmental approval.

**CIVL 6240/6246 AIR POLLUTION (3).** LEC. 3. Nature, sources and effects of air pollutants; effects of atmospheric conditions on dispersion; dispersion modeling theory and design of control devices; legal/administrative control. Departmental approval.

**CIVL 6250/6256 BIOLOGICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3).** LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic biology and microbiology as applied to environmental engineering: microbial growth, microbial metabolism, microbial population dynamics, wastewater treatment microbiology, environmental impacts, toxicity testing, and biomonitoring. Departmental approval.

**CIVL 6330/6336 LANDFILLS (3).** LEC. 3. Pr., CIVL 3310. Landfill siting design, construction and operational practices; regulations, terminology, closure regulations and procedures.

**CIVL 6340/6346 GEOSYNTHETICS AND SOIL IMPROVEMENT (3).** LEC. 3. Pr., CIVL 3310. Use of geosynthetics in civil engineering design: reinforcement, retaining walls, filtration, slopes, roads and erosion control. Evaluation and testing of geosynthetics. Improvement of soil properties for civil engineering design: principles and practice of densification, grouting, reinforcement, stone columns, soil nailing.

**CIVL 6410 GEOGRAPHIC INFORMATION SYSTEMS IN CIVIL ENGINEERING (3).** LEC. 3. Pr., CIVL 2010. Basic principles and the development of geographic information systems and practical experiences in the field of civil engineering. Credit will not be given for both CIVL 5410 and CIVL 6410. Departmental approval.

**CIVL 6430/6436 CONSTRUCTION SAFETY (3).** LEC. 3. Pr., CIVL 3410. Various causes of construction accidents and adopted strategies preventing worksite injuries and illnesses are investigated. Emphasis on OSHA standards, insurance, and health and safety hazards. Credit will not be given for both CIVL 5430 and CIVL 6430/6436. Departmental approval.

**CIVL 6440/6446 CONSTRUCTION EQUIPMENT AND METHODS (3).** LEC. 3. Pr., CIVL 3410 and CIVL 3310 and CIVL 3510. Selection of equipment for heavy construction operations, production rates, owning and operating costs, fleet management.

**CIVL 6460 PROJECT ESTIMATING (3).** LEC. 3. Pr., CIVL 3410. Conceptual and definitive estimates, overhead and profit determination; claim change order pricing.

**CIVL 6480/6486 LEGAL ASPECTS OF CIVIL ENGINEERING PRACTICE (3).** LEC. 3. Pr., CIVL 3410. Covered is the law of contracts, agency, association, property, and labor law, studied generally and in the context that the practicing civil engineer encounters them. Departmental approval.

**CIVL 6500/6506 TRAFFIC ENGINEERING ANALYSIS (3).** LEC. 3. Pr., CIVL 3510. Capacity analysis of rural and suburban highways, 2-lane highways, freeways, weaving sections, ramps and intersections.

**CIVL 6510/6516 TRAFFIC CONTROL SYSTEMS DESIGN (3).** LEC. 3. Pr., CIVL 3510 and STAT 3010. Fundamental design concepts for highway traffic control systems. Control requirements and warrants: hardware operation and equipment selection; development and implementation of timing plans for isolated intersections and intersection networks.

**CIVL 6560/6566 TRANSPORTATION PLANNING (3).** LEC. 3. Pr., CIVL 3510 and STAT 3010. The planning process for urban and regional transportation development. Topics include planning objectives and data requirements; planning inventories; modeling of trip-making behavior, development and evaluation of alternate plans; multimodal applications, including railway operations. Departmental approval.

**CIVL 6580/6586 INTELLIGENT TRANSPORTATION SYSTEMS (3).** LEC. 3. Pr., CIVL 3510. Introduction to intelligent transportation systems, covering applications of information and communications technologies to transportation, with emphasis on operations of traffic management and traveler information systems. Departmental approval.

**CIVL 6600/6606 ADVANCED REINFORCED CONCRETE DESIGN (3).** LEC. 3. Pr., CIVL 4600. Analysis and design of continuous beams and one-way slabs, bond

## Civil Engineering (CIVL)

and development length, torsion, slenderness effects in columns, two-way slabs, footings, and retaining walls.

**CIVL 6620/6626 PRE-STRESSED CONCRETE DESIGN (3).** LEC. 3. Pr., CIVL 4600. Properties and behavior of pre-stressed concrete, pre-stressing systems and end anchorages, analysis and design of beams for flexure and shear, camber and deflection, cable layout, pre-stressed concrete slabs.

**CIVL 6630/6636 ADVANCED CONCRETE MATERIALS (3).** LEC. 3. Pr., CIVL 3820. Comprehensive coverage of concrete materials. Topics include cement and aggregate properties; concrete microstructure; mechanical properties; supplementary cementing materials, chemical admixtures; durability issues; special concretes.

**CIVL 6650/6656 ADVANCED STEEL DESIGN (3).** LEC. 3. Pr., CIVL 4650. Composite construction, open web joists, torsion, plate girders, plastic analysis and design, highway bridges, computer applications.

**CIVL 6670/6676 ADVANCED STRUCTURAL ANALYSIS (3).** LEC. 3. Pr., CIVL 3610. Analysis of continuous beams and frames by slope-deflection method. Analysis of beams, trusses, grids, and frames by direct stiffness method. Buckling of planar frames. Use of structural analysis software.

**CIVL 6690/6696 TIMBER DESIGN (3).** LEC. 3. Pr., CIVL 3610. Properties and behavior of timber and plywood; design of timber beams, columns, floor and wall assemblies and wood formwork; timber trusses and laminated arches.

**CIVL 6700/6706 DESIGN FOR LATERAL LOADS (3).** LEC. 3. Pr., CIVL 3610 and (CIVL 4600 or CIVL 4650). Wind meteorology and loadings, effects of wind loadings, building code wind pressures and load provisions, fundamentals of structural vibrations, earthquake characteristics and loadings, building code earthquake provisions, building lateral load resisting systems.

**CIVL 6810/6816 PAVEMENT DESIGN AND CONSTRUCTION (3).** LEC. 3. Pr., CIVL 3820 and CIVL 3310 and CIVL 3510. General concepts, traffic factors, material characterization, layer thickness selection, earthwork, base and sub-base construction, surface course construction quality control/assurance.

**CIVL 6970 CIVIL ENGINEERING SPECIAL TOPICS (3).** LEC. 3. Special topics of an advanced undergraduate nature pertinent to civil engineering. Specific prerequisites will be announced for each course offering. Credit will not be given for both CIVL 5970 and CIVL 6970. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CIVL 7120/7126 HYDROLOGIC MODELING (3).** LEC. 3. Pr., (CIVL 6110 or CIVL 6116) and CIVL 4120. Principles and practice of hydrologic modeling, introduction to hydrologic information systems, computer modeling of storm run-off, floodplain hydraulics and bridge hydraulics. Computer applications.

**CIVL 7170/7176 NUMERICAL METHODS IN HYDRAULICS AND HYDROLOGY (3).** LEC. 3. Pr., CIVL 3230. Numerical approximations of ordinary and partial differential equations representing problems common to civil engineering including groundwater flow, soil consolidation, and mass transport. The formulation and computational solution of diffusion and equilibrium problems are emphasized. Computer programming is required.

**CIVL 7210/7216 METHODS OF POLLUTANT ANALYSIS IN ENVIRONMENTAL ENGINEERING (3).** LEC. 2, LAB. 3. Pr., CIVL 6210 or CIVL 6216. Fundamentals of identifying and quantifying environmental pollutants: review of pollutant chemistry, quality and quantity of pollutants, statistical basis of sampling, environmental sampling techniques, analytical techniques, and data analysis.

**CIVL 7220/7226 WATER AND WASTEWATER OPERATIONS AND PROCESSES I (3).** LEC. 3. Pr., CIVL 3230. Coreq., CIVL 6210. Physical and chemical principles applied to water and wastewater treatment. Advanced mathematical and modeling concepts. Departmental approval.

**CIVL 7230/7236 WATER AND WASTEWATER OPERATIONS AND PROCESSES II (3).** LEC. 3. Pr., CIVL 7220 or CIVL 7226. Rigorous analysis of unit operations and processes used in modern water and wastewater treatment systems. Mixing, coagulation, sedimentation, filtration, and chemical precipitation. Departmental approval.

**CIVL 7240/7246 WATER AND WASTEWATER OPERATIONS AND PROCESSES III (3).** LEC. 3. Pr., CIVL 7220 or CIVL 7226. Design and analysis of unit operations and processes used in modern water and wastewater treatment systems are rigorously examined: adsorption, ion exchange, membrane filtration, reverse osmosis, gas transfer, corrosion, and treatment residuals processing. Departmental approval.

**CIVL 7250/7256 BIOLOGICAL WASTEWATER TREATMENT (3).** LEC. 3. Pr., CIVL 6250 or CIVL 6256. Development and application of the theories of biological waste treatment. Departmental approval.

**CIVL 7260/7266 ENVIRONMENTAL NUTRIENT CONTROL PROCESSES (3).** LEC. 3. Pr., CIVL 7250 or CIVL 7256. The nature sources and impacts of aquatic nutrients in the environment: microbial nutrient cycles, biological nutrient removal processes, chemical nutrient control processes, natural systems for nutrient removal.

**CIVL 7270/7276 ADVANCED NUMERICAL METHODS FOR SOLVING ENVIRONMENTAL ENGINEERING PROBLEMS (3).** LEC. 3. Pr., CIVL 3010. Basic concepts of finite element (FE) analysis. Development of FE computer codes for solving environmental engineering problems. FE grid generation and visualization methods. Departmental approval.

**CIVL 7280/7286 SURFACE WATER QUALITY MODELING (3).** LEC. 3. Pr., CIVL 3230. Physical, chemical, biological and hydrological consideration relating to the degradation and self-purification of streams, lakes, and estuaries. Water uses and water quality goals, objectives and criteria. Principles of water quality modeling and waste load allocation. Departmental approval.

**CIVL 7310/7316 FOUNDATION ENGINEERING (3).** LEC. 3. Pr., CIVL 3310 and CIVL 4600. Analysis, design and construction of shallow and deep foundation systems.

**CIVL 7330/7336 SOIL PROPERTIES (3).** LEC. 3. Pr., CIVL 3310. Soil behavior, shear strength, compressibility, hydraulic conductivity, and measurement of soil properties.

**CIVL 7340/7346 SOIL DYNAMICS (3).** LEC. 3. Pr., CIVL 3310. Soil behavior during dynamic loads, wave propagation, dynamically loaded foundations, geotechnical earthquake engineering.

**CIVL 7360 EARTH SLOPES AND DAMS (3).** LEC. 3. Pr., CIVL 3310. Engineering design of earth slopes, slope stability, cut slopes, embankments, settlement. Dam siting, stability, flownets, seepage analysis. Departmental approval.

**CIVL 7390 IN SITU TESTING OF SOILS (3).** LEC. 3. Pr., CIVL 4310. In situ tests used in geotechnical engineering: test procedures, interpretation of results, and designing from In situ geotechnical data.

**CIVL 7410/7416 TEMPORARY STRUCTURES AND FACILITIES (3).** LEC. 3. Pr., STAT 3010 and CIVL 3310 and CIVL 3610. Construction loads, applicable codes and standards, and design principles for temporary structures; planning and implementation of construction facilities; economic analysis of alternatives.

**CIVL 7500/7506 TRAFFIC FLOW THEORY (3).** LEC. 3. Pr., CIVL 6500 or CIVL 6506. Basic phenomena underlying traffic stream movement and individual vehicle behavior. Topics include flow parameters and relationships; microscopic and macroscopic flow models; equations of motion and state; single and multi-regime flow models. Departmental approval.

**CIVL 7520/7526 PUBLIC TRANSPORTATION (3).** LEC. 3. Pr., CIVL 3510. Technology and characteristics of public transportation; transportation demand analysis; transit users; innovative technologies. Departmental approval.

**CIVL 7540/7546 TRANSPORTATION SAFETY (3).** LEC. 3. Pr., CIVL 6500 or CIVL 6506. Transportation safety problems and the engineer's role in developing and administering safety programs. Topics include hazardous location identification; analysis of accident data; development and evaluation of accident countermeasures and safety programs. Departmental approval.

**CIVL 7550/7556 ROADSIDE DESIGN (3).** LEC. 3. Pr., CIVL 6500 or CIVL 6506. Concepts of roadside design that can prevent or reduce crash severity. Topics include design, selection, placement and construction of longitudinal barriers, crash cushions, bridge rails, transitions, end terminals, sign posts, and other roadside features. Departmental approval.

**CIVL 7610/7616 STRUCTURAL DYNAMICS I (3).** LEC. 3. Pr., CIVL 6670 or CIVL 6676. Single-degree-of-freedom systems, numerical solution techniques, response spectrum, multi-degree-of-freedom systems, eigen problem solution, mode superposition analysis.

**CIVL 7620/7626 STRUCTURAL DYNAMICS II (3).** LEC. 3. Pr., CIVL 7610 or CIVL 7616. Analysis of MDOF systems by direct numerical integration, continuous systems, nonlinear dynamics response, earthquake response of structures.

**CIVL 7630/7636 ADVANCED STRESS ANALYSIS (3).** LEC. 3. Pr., CIVL 3610. Hooke's 1-D, 2-D, 3-D stress-strain relations and applications, stress and strain transformations and Mohr's circle, material properties and failure theories, biaxial bending, unsymmetrical bending, composite material members, shear center, torsional stress, stress concentrations, beams on elastic foundations.

**CIVL 7640/7646 STABILITY OF STRUCTURES (3).** LEC. 3. Coreq., CIVL 6670. Introduction to stability and failure of compression members, rigid bar buckling, elastic and inelastic buckling of columns, approximate methods of buckling analysis, beam-columns, buckling of frames, torsional buckling, lateral torsional buckling of beams.

**CIVL 7650/7656 ADVANCED ANALYSIS OF FRAMED STRUCTURES (3).** LEC. 3. Pr., CIVL 6670 or CIVL 6676. Matrix analysis of framed structures, elastic supports, specified displacements, member and releases, principle of minimum potential energy, geometric non-linearity, frame stability, substructures.

**CIVL 7660/7666 FINITE ELEMENT METHODS IN STRUCTURAL MECHANICS (3).** LEC. 3. Pr., CIVL 6670 or CIVL 6676. Introduction to finite element analysis; variational principles. 1D, 2D and 3D element formulation; nonlinear (geometric and constitutive) formulations and solutions; eigenvalues problems. Departmental approval.

**CIVL 7670/7676 NUMERICAL TECHNIQUES IN STRUCTURAL ANALYSIS (3).** LEC. 3. Basic concepts of non-linear analyses, formulation of the continuum mechanics incremental equations, total and updated Lagrangian formulations, finite elements for non-linear analyses, non-linear solution strategies.

**CIVL 7680/7686 FATIGUE AND FRACTURE MECHANICS (3).** LEC. 3. Pr., CIVL 4650. Linear-elastic and elastic-plastic fracture mechanics, fatigue, yield criteria, applications to highway structures. Departmental approval.

## Cell and Molecular Biology (CMBL)

**CIVL 7690/7696 ANALYSIS OF PLATE AND SHELL SYSTEMS (3).** LEC. 3. Pr., CIVL 6670 or CIVL 6676. Analysis of isotropic and anisotropic plates with various shapes and boundary conditions due to lateral and in-plane loads; large deflection considerations; numerical techniques; bending and membrane behavior of isotropic shells. Departmental approval.

**CIVL 7710/7716 APPLIED ELASTICITY (3).** LEC. 3. Pr., CIVL 6670 or CIVL 6676. Analysis of stress strain; generalized stress-strain relationships; solution of elasticity problem by potentials; thick cylinders, disks and spheres; energy principles and introduction of variational methods. Departmental approval.

**CIVL 7770/7776 VARIATIONAL METHODS IN STRUCTURAL MECHANICS (3).** LEC. 3. Pr., CIVL 6670 or CIVL 6676. Calculus of variations; derivation of Euler's equations and boundary conditions; applications of energy principles to structures; variational approaches to finite element methods. Departmental approval.

**CIVL 7810/7816 ADVANCED CONSTRUCTION MATERIALS (4).** LEC. 3, LAB. 3. Pr., CIVL 6810 or CIVL 6816. Evaluate soils, unbound and stabilized materials, hot mix asphalt, and cement concrete products; stress-strain relationships; thermal expansion; design and testing of non-traditional construction products. Departmental approval.

**CIVL 7820/7826 ADVANCED PAVEMENT DESIGN AND REHABILITATION (3).** LEC. 3. Pr., CIVL 7810 or CIVL 7816. Pavement management concepts, life cycle costs analysis, design and rehabilitation alternatives, serviceability concepts, empirical thickness selection models, reliability.

**CIVL 7830 ASPHALT CONCRETE MIX DESIGN (3).** LEC. 2, LAB. 3. Marshall and Super pave mix design methods and QC/QA for asphalt concrete are covered. Topics include aggregate, asphalt and mix properties, laboratory testing and proportion optimization.

**CIVL 7840/7846 PAVEMENT MANAGEMENT AND REHABILITATION (3).** LEC. 3. Pr., CIVL 3820. Topics include: network and project level management, pavement distress surveys, non-destructive testing for condition measurements, flexible and rigid pavement maintenance and rehabilitation practices. Departmental approval.

**CIVL 7950 GRADUATE SEMINAR (1).** SEM. 1. SU. Course may be repeated for a maximum of 6 credit hours.

**CIVL 7970/7976 SPECIAL TOPICS IN CIVIL ENGINEERING (1-3).** LEC. Individual student or group endeavor under direct faculty supervision involving special topics of an advanced nature in civil engineering. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CIVL 7980/7986 ENGINEERING PROJECT (1-10).** LEC. Departmental approval. Course may be repeated with change in topics.

**CIVL 7990 RESEARCH AND THESIS (1-10).** MST. Credit to be arranged. Departmental approval.

**CIVL 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Credit to be arranged. Departmental approval.

### Cell and Molecular Biology (CMBL)

Dr. James Barbaree - 844-1647

**CMBL/BIOL 4150 HUMAN GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 4100 and CHEM 2080. Study of the biological interaction of genes, effects of mutation and changes in gene frequency in human populations. Emphasis on molecular approach to study evolutionary changes in human gene pools.

**CMBL/BIOL 5190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3).** LEC. 3. Pr., BIOL 3000 and BIOL 4100 and BIOL 4220 and CHEM 2090. The study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic and biochemical approaches.

**CMBL/BIOL 5500 IMMUNOLOGY (3).** LEC. 3. Pr., BIOL 3200 and BIOL 3000. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effect or mechanisms and medical immunology.

**CMBL/BIOL 5501 IMMUNOLOGY LAB (2).** LAB. 4. Coreq., BIOL 5500. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions and antibody production.

**CMBL 6190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3).** LEC. 3. Pr., BIOL 3000 and BIOL 4100 and BIOL 4050 and CHEM 2090. Study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic and biochemical approaches. Credit will not be given for both CMBL 6190 and BIOL 6190.

**CMBL 6220 INTRODUCTION TO MOLECULAR GENETICS (4).** LEC. 4. Pr., BIOL 3000 and BIOL 4510. Advanced principles of gene expression including replication, transcription and translation; structure and regulation of genes; detailed concepts and techniques in recombinant DNA. Credit will not be given for both CMBL 6220 and BIOL 6230.

**CMBL 6230 VIROLOGY (4).** LEC. 4. Pr., BIOL 3000 and BIOL 3200 and BIOL 4520. Molecular mechanisms of virus biology including virus-cell replication, assembly and release pathogens. Credit will not be given for both CMBL 6230 and BIOL 6230.

**CMBL 6320 PLANT GENE EXPRESSION (4).** LEC. 4. Pr., BIOL 5320. Genetic expression of genetic elements in plants from the recent literature. Credit will not be given for both BIOL and CMBL 6320. Departmental approval.

**CMBL/BIOL 6500 IMMUNOLOGY (3).** LEC. 3. Pr., BIOL 3200 and BIOL 3000. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effect or mechanisms, and medical immunology.

**CMBL/BIOL 6501 TECHNIQUES IN IMMUNOLOGY (2).** LAB. 4. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions and antibody production.

**CMBL/HORT 7070 PLANT BIOTECHNOLOGY (4).** LEC. 2, LAB. 4. Pr., BIOL 3000. Plant biotechnology, including plant tissue culture technologies and genetic transformation and applications to horticultural crop improvement.

**CMBL/VMBS 7080 MOLECULAR ENDOCRINOLOGY (2).** LEC. 2. Pr., VBMS 7070. Examination of the literature of hormonal synthesis, secretion and mechanism of action with emphasis on receptors, second messenger systems and gene regulation. Departmental approval.

**CMBL/BIOL 7270 ULTRASTRUCTURE OF PLANT CELLS AND MICROBES (5).** LEC. 3, LAB. 4. Theory and practice of transmission and scanning electron microscopy and their application to the biological sciences. Credit will not be given for both CMBL 7270 and BIOL 7290. Departmental approval.

**CMBL/BIOL 7290 EVOLUTIONARY GENETICS (3).** LEC. 3. Pr., BIOL 3000 and BIOL 6170. Examines two major topics: the role of population processes as mechanisms for evolution; and evolution at the molecular level. Credit will not be given for both CMBL 7290 and BIOL 7290. Departmental approval.

**CMBL/BIOL 7330 MOLECULAR BIOLOGY OF PLANT DEVELOPMENT (2).** LEC. 2. Pr., BIOL 6130 and BIOL 7280. Physiological, biochemical and molecular aspects of plant growth and development. Credit will not be given for both CMBL 7330 and BIOL 7330. Departmental approval.

**CMBL/PLPA 7400 PLANT VIROLOGY (4).** LEC. 3, LAB. 2. Pr., (PLPA 3000 or PLPA 6000) and CHEM 6180. Introduction to plant viruses and the diseases they cause; virus particle structure and replication strategies; disease identification by symptoms and detection of pathogen; transmission, ecology, epidemiology and control. Departmental approval.

**CMBL/BIOL 7440 ADVANCED CELL BIOLOGY (3).** LEC. 3. Pr., BIOL 4100. Examination of current areas of research in cell and developmental biology by directed reading and discussion. Credit will not be given for both CMBL 7440 and BIOL 7440.

**CMBL/VMBS 7460 BACTERIAL PATHOGENESIS (3).** LEC. 3. Pr., VBMS 7510 or BIOL 4520. Molecular and cellular basis of virulence of bacterial pathogens of animals. Departmental approval.

**CMBL/VMBS 7480 METHODS IN IMMUNOLOGY (5).** LEC. 1, LAB. 8. Theoretical concept underlying immunological methods combined with practical hands-on immunological experimentation focused on application to research in the biological sciences. Departmental approval.

**CMBL/VMBS 7500 CELLULAR AND MOLECULAR IMMUNOLOGY (3).** LEC. 2, LEC/RCT. 1. Pr., BIOL 6500. Current literature in immunology; emphasis on cellular/biochemical/genetic basis of immune response. Spring. Departmental approval.

**CMBL/VMBS 7510 MOLECULAR GENETICS I (5).** LEC. 5. Pr., CHEM 7200. Bacterial, bacteriophage, and eukaryotic genetics, with a focus on gene structure, and molecular mechanisms regulation expression. Critical review of current literature will be emphasized.

**CMBL/VMBS 7520 MOLECULAR GENETICS II (5).** LEC. 5. Pr., VBMS 7510. Genetic mechanisms by which eukaryotic cells replicate, communicate and differentiate. Current literature will be used extensively.

**CMBL/VMBS 7530 ADVANCED SYSTEMATIC BOTANY (3).** LEC. 3. Pr., BIOL 6120. Morphological and molecular approaches to modern systematics of plants.

**CMBL/VMBS 7540 CURRENT TOPICS IN MOLECULAR VIROLOGY (3).** LEC. 3. Pr., VBMS 7510 and VBMS 7520. Viral gene expression and evasion of host defense mechanisms.

**CMBL/VMBS 7660 MOLECULAR GENETICS AND BIOTECHNOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3000. Principles and applications of DNA fingerprinting technologies, gene mapping, genetic information and analysis using internet tools, transgenic technologies. Credit will not be given for both CMBL 7660 and FISH 7660. Departmental approval.

**CMBL/BIOL 7960 READINGS IN MOLECULAR BIOLOGY (1).** RCT. 1. Pr., P/C, BIOL 7220. Oral presentation and discussion of recent scientific publications from a selected area of molecular biology. Credit will not be given for both CMBL 7960 and BIOL 7960. Course may be repeated for a maximum of 4 credit hours.

**CMBL/POUL 8160 LABORATORY TECHNIQUES IN MOLECULAR VIROLOGY (4).** LEC. 1, LAB. 9. Pr., BIOL 4520 and BIOL 4530. Isolation, purification, and identification of viral nucleic acids and proteins. Credit will not be given for both CMBL 8160 and POUL 8160.

**CMBL/PLPA 8880 PHYSIOLOGICAL AND MOLECULAR PLANT PATHOLOGY (3).** LEC. 2, LAB. 2. Pr., PLPA 6000 and CHEM 6180 and BIOL 4230. Comprehensive coverage of physiology and molecular biology of plant-pathogen interactions.

**Communication Disorders (CMDS)**

Dr. Rebekah Pindzola - 844-7916

**CMDS 2500/2503/2504 COMMUNICATION DISORDERS IN SOCIETY (2).** LEC. 2. Information on stuttering, speech, language, voice disorders and hearing impairment and how to interact with individuals with communication disorders.

**CMDS 3000 INTRODUCTION TO SPEECH PATHOLOGY-AUDIOLOGY (3).** LEC. 3. Survey of the field of speech pathology-audiology. Includes history of the profession, the inter-relatedness of the various pathologies, general principles of evaluation and therapy and the profession itself.

**CMDS 3400 THE SPEECH AND HEARING MECHANISM (3).** LEC. 3. Pr., CMDS 3410 and CMDS 3550. Anatomy and physiology of the speech and hearing mechanism.

**CMDS 3410 PHONETICS (3).** LEC. 3. Principles of phonetics and their application to speech.

**CMDS 3550 SPEECH AND HEARING SCIENCE (3).** LEC. 3. The acoustic properties of speech, their relationship to perceptual and physiological phonetics, and instrumentation used in speech science.

**CMDS 4510 ARTICULATION DISORDERS (3).** LEC. 3. Pr., CMDS 3400 and CMDS 3410. Principles of normal and deviant articulation acquisition. Or departmental approval; 2.2 GPA

**CMDS 4520 LANGUAGE ACQUISITION (3).** LEC. 3. Pr., P/C, CMDS 3400 and P/C, CMDS 3410. First language acquisition in childhood and its change throughout the life span. Departmental approval; 2.2 GPA.

**CMDS 4530 FLUENCY DISORDERS (3).** LEC. 3. Pr., P/C, CMDS 3400 and P/C, CMDS 3410. Principles of fluent and disfluent verbal behavior. Or departmental approval; 2.2 GPA.

**CMDS 4540 VOCAL DISORDERS (3).** LEC. 3. Pr., CMDS 3400 and CMDS 3410. Principles of normal and deviant vocal behavior. Or departmental approval; 2.2 GPA.

**CMDS 4560 CHILD AND ADOLESCENT LANGUAGE DISORDER (3).** LEC. 3. Pr., CMDS 4520. Overview of research dealing with the nature, assessment and treatment of language disorders in child and adolescent populations. Or departmental approval; 2.2 GPA.

**CMDS 4580 INTRODUCTION TO CLINICAL PROCEDURES IN SPEECH-LANGUAGE PATHOLOGY (3).** LEC. 3, CLN/LEC. 30. Pr., (CMDS 4510 or CMDS 4520) and (CMDS 4510 or CMDS 4520 or CMDS 4530 or CMDS 4540). Orientation to clinical activities, management methods and preparation of professional reports.

**CMDS 4600 INTRODUCTION TO AUDIOLOGY (3).** LEC. 3. Principles of auditory reception and the problems involved in measuring, evaluating and conserving hearing. 2.2 GPA

**CMDS 4620 HEARING REHABILITATION (3).** LEC. 3. Pr., CMDS 4600. Rehabilitation problems of children and adults in the area of auditory training, speech reading and speech conservation; includes clinical practice. Or departmental approval; 2.2 GPA.

**CMDS 4650 INTRODUCTION TO CLINICAL PROCEDURES IN AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 Audiological instrumentation and test procedures. Or departmental approval; requires a 2.5 GPA to enter.

**CMDS 4910 CLINICAL PRACTICUM IN SPEECH-LANGUAGE PATHOLOGY (1).** PRA. 1. Pr., CMDS 4580. Departmental approval; 2.5 GPA. Course may be repeated for a maximum of 2 credit hours.

**CMDS 4930 DIRECTED STUDY IN COMMUNICATION DISORDERS (1-3).** IND. Directed learning experience in communication disorders involving bibliographic research, writing, gaining expertise with laboratory/clinical procedures or conducting directed research. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CMDS 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CMDS 4997 HONORS THESIS (1-3).** RES. Pr., Honors College. Course may be repeated for a maximum of 6 credit hours.

**CMDS 5100 HEARING SCIENCE (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Introduction to instrumentation and calibration of audiometric equipment. Auditory perception in normal-hearing and hearing-impaired listeners. Departmental approval.

**CMDS 5110 AUDITORY PHYSIOLOGY (3).** LEC. 3. Pr., CMDS 4400. Detailed study of the anatomy and physiology of the human auditory system. Fall. Departmental approval.

**CMDS 5120 AUDIOLOGY CLINICAL METHODS (2).** LEC. 2, LAB. 0. Use of audiometric equipment, administering of audiological tests, recording test results, and interpretation of test findings.

**CMDS 5200 DIAGNOSTIC AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4650. Basic and advanced audiometric techniques to assess the site of lesion in the auditory system. Spring.

**CMDS 5210 MEDICAL ASPECTS OF HEARING DISORDERS (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Study of the disorders of hearing and their evaluation and treatment. Departmental approval.

**CMDS 5220 AMPLIFICATION I (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Background and development of hearing aids and other amplification systems; performance standards and measurement techniques; selection, fitting and dispensing procedures. Departmental approval.

**CMDS 5230 CLINICAL LEVEL I (2).** LEC. 2. Pr., CMDS 4650. Didactic and practical training for performing audiological testing and patient management at clinical level I. Spring. Departmental approval.

**CMDS 5300 CENTRAL AUDITORY PROCESSING (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620 Selected clinical procedures in audiology, including acoustic reflex measures and behavioral test of central auditory function. Departmental approval.

**CMDS 5310 AURAL REHABILITATION (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Psychosocial aspects on hearing loss; clinical and therapeutic management of older persons with hearing disorders including counseling of the hearing-impaired and their families. Departmental approval.

**CMDS 5320 CLINICAL LEVEL II (2).** LEC. 2. Pr., CMDS 5230. Didactic and practical training for performing audiological testing and patient management at Clinical Level II. Summer.

**CMDS 5400 PEDIATRIC AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Etiologic factors, screening, audiologic assessment, differential diagnosis and clinical management of infants and children with hearing disorders. Departmental approval.

**CMDS 5410 AURAL HABILITATION (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. The parameters involved in the management of hearing-impaired school-aged children. Departmental approval.

**CMDS 5420 AMPLIFICATION II (3).** LEC. 3. Pr., CMDS 5220. Review of recent trends in hearing aid technology including digital and Programmable instruments.

**CMDS 5430 CLINICAL LEVEL III (2).** LEC. 2. Pr., CMDS 5230 and CMDS 5320. Didactic and practical training for performing audiological testing and patient management at Clinical Level III.

**CMDS 5500 ELECTROPHYSIOLOGICAL PROCEDURES IN AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Selected neurophysiological clinical procedures in audiology, including electronystagmography and auditory evoked potentials. Departmental approval.

**CMDS 5510 CLINICAL LEVEL IV (2).** LEC. 2. Pr., CMDS 5230 and CMDS 5320 and CMDS 5430 Didactic and practical training for performing audiological testing and patient management at Clinical Level IV. Spring.

**CMDS 5520 HEARING CONSERVATION (3).** LEC. 3. Pr., CMDS 5310. A study of the effects of noise on the auditory system and implementation of hearing conservation programs in industry, schools and the military. Spring.

**CMDS 5570 EVALUATION OF RESEARCH IN SPEECH PATHOLOGY & AUDIOLOGY (3).** LEC. 3. Survey of experimental designs and statistical procedures used in speech-language pathology/audiology literature for consumers of research. Departmental approval.

**CMDS 5600 BALANCE DISORDERS (3).** LEC. 3. Detailed coverage of the assessment and treatment of patients with balance disorders using nystagmography and other techniques. Summer.

**CMDS 5610 IMPLANT TECHNOLOGY (3).** LEC. 3. Detailed study of the assessment and treatment of patients with cochlear implants. Summer.

**CMDS 5620 OUTCOME MEASURES IN AUDIOLOGY (3).** LEC. 3. Pr., CMDS 5120. Application of research methodology to demonstrate efficacy in clinical service delivery in all areas of audiologic practice. Summer.

**CMDS 5630 COUNSELING IN AUDIOLOGY (3).** LEC. 3. Advanced course in the counseling component of rehabilitative audiology.

**CMDS 5700 PROFESSIONAL ISSUES (3).** LEC. 3. Legal and ethical issues in clinical audiology. Fall

**CMDS 5800 THE NEUROLOGICAL BASES OF COMMUNICATION DISORDERS (3).** LEC. 3. Anatomy and physiology of the central nervous system as it relates to speech, language and hearing function and disorders. Departmental approval.

**CMDS 5810 PRIVATE PRACTICE (3).** LEC. 3. Concepts and strategies for private practice in the areas of clinical and industrial audiology.

**CMDS 5910 CLINICAL PROBLEMS IN HEARING (2).** LEC. 2. Pr., CMDS 4650 and CMDS 4600 and CMDS 4620. Class is a clinical practicum. Departmental approval.

**CMDS 5920 CLINICAL INTERNSHIP (5).** INT. 5. SU. Pr., CMDS 5510. Intensive clinical experience at off-campus setting up to 20 hours per week of supervised practicum.

**CMDS 5940 CLINICAL RESIDENCY (6).** LEC. 6. SU. Pr., CMDS 5920. A full time, supervised, nine month residency at an off-campus facility that provides audiological services. Fall, Spring. Course may be repeated for a maximum of 18 credit hours.

## Communication Disorders (CMDS)

- CMDS 5950 AUDIOLOGY GRAND ROUNDS SEMINAR (3).** LEC. 3. Discussion/Seminar in timely clinical issues in audiology, clinical problem solving and case studies in contemporary audiologic service delivery. Summer.
- CMDS 5980 CAPSTONE PROJECT (1).** LEC. 1. A third year project involving applied clinical research or development of an innovative clinical procedure. Course may be repeated for a maximum of 3 credit hours.
- CMDS 7500 CLINICAL PROBLEMS IN SPEECH (2).** LEC. 2. Pr., CMDS 4580 and CMDS 4910. Methods, techniques and clinical management of the disorders of speech. Clinical practice required. Course may be repeated for a maximum of 12 credit hours. Course may be repeated for a maximum of 12 credit hours.
- CMDS 7510 ADVANCED ARTICULATION DISORDERS (3).** LEC. 3. Pr., CMDS 4510. Empirical and theoretical bases for articulatory pathologies.
- CMDS 7520 CLINICAL STRATEGIES IN CHILD AND ADOLESCENT LANGUAGE DISORDERS (3).** LEC. 3. Pr., CMDS 4520. Empirical and theoretical bases for evaluation and treatment of child/adolescent language disorders.
- CMDS 7530 ADVANCED FLUENCY DISORDERS (3).** LEC. 3. Pr., CMDS 4530. Empirical and theoretical bases for dysfluency disorders, diagnoses and therapies.
- CMDS 7540 ADVANCED VOICE DISORDERS (3).** LEC. 3. Pr., CMDS 4540. Empirical and theoretical bases for voice pathologies, diagnoses and therapies.
- CMDS 7550 LANGUAGE AND SPEECH DISORDERS (3).** LEC. 3. Pr., CMDS 4520. Empirical and theoretical bases for speech-language disorders associated with CNS pathologies, diagnoses and therapies.
- CMDS 7560 CLEFT PALATE (3).** LEC. 3. Pr., CMDS 4510. Empirical and theoretical bases for speech/language disorders associated with cleft palate, diagnoses and therapies.
- CMDS 7570 EVALUATION OF RESEARCH IN SPEECH PATHOLOGY AND AUDIOLOGY (3).** LEC. 3. Survey of experimental designs and statistical procedures used in speech-language pathology/audiology literature for consumers of research.
- CMDS 7600 CLINICAL PROBLEMS IN HEARING (2).** LEC. 2. Pr., CMDS 4650 and CMDS 4600 and CMDS 4620. Course may be repeated for a maximum of 12 credit hours.
- CMDS 7800 THE NEUROLOGICAL BASES OF COMMUNICATION DISORDERS (3).** LEC. 3. Anatomy and physiology of the central nervous system as it relates to speech, language and hearing function and disorders.
- CMDS 7810 MOTOR SPEECH DISORDERS (3).** LEC. 3. Pr., CMDS 7800. Empirical and theoretical bases for motor speech disorders, diagnoses and therapies. Departmental approval.
- CMDS 7820 SWALLOWING DISORDERS AND MEDICAL ASPECTS OF SPEECH-LANGUAGE PATHOLOGY (3).** LEC. 3. Pr., CMDS 7800. Overview of the role of speech language pathology in settings with specific emphasis on terminology and procedures used to assess and treat dysphagia, dementia, traumatic brain injury and right hemisphere damage in adult population. Fall. Departmental approval.
- CMDS 7840 AUGMENTATIVE AND ALTERNATIVE COMMUNICATION (3).** LEC. 3. Process and specific equipment involved in assessment, prescription and intervention with adults and children who are unable to use traditional communication modes.
- CMDS 7860 EXPERIMENTAL PHONETICS (3).** LEC. 3. Pr., CMDS 3550. Orientation to acoustic and physiologic instrumentation used in the study of normal and disordered speech.
- CMDS 7920 INTERNSHIP (5).** LEC. 5. SU. Full-time assignment in a facility, such as University Speech and Hearing Clinic, hospital, public school and various community agencies. Course may be repeated for a maximum of 10 credit hours.
- CMDS 7930 DIRECTED STUDIES (1-3).** IND. Conferences, readings, research or reports in a specialized area of communication disorders. Course may be repeated for a maximum of 3 credit hours.
- CMDS 7970 SPECIAL TOPICS SEMINAR (1-3).** SEM. Advanced treatment of contemporary topics and trends, as well as current research aspects of audiology and speech-language pathology. Course may be repeated for a maximum of 3 credit hours.
- CMDS 7990 RESEARCH AND THESIS (1-5).** MST. Course may be repeated with a change in topic.
- CMDS 8100 HEARING SCIENCE (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Introduction to instrumentation and calibration of audiometric equipment. Auditory perception in normal-hearing and hearing impaired listeners. Departmental approval.
- CMDS 8110 AUDITORY PHYSIOLOGY (3).** LEC. 3. Pr., CMDS 4400. Departmental approval. Detailed study of the anatomy and physiology of the human auditory system.
- CMDS 8120 AUDIOLOGY CLINICAL METHODS (2).** LEC. 2, LAB. 0. Use of audiometric equipment, administering of audiologic tests, recording test results, and interpretation of test findings.
- CMDS 8200 DIAGNOSTIC AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4650. Basic and advanced audiometric techniques to assess the site of lesion in the auditory system.
- CMDS 8210 MEDICAL ASPECTS OF HEARING DISORDERS (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Study of the disorders of hearing and their evaluation and treatment.
- CMDS 8220 AMPLIFICATION I (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Background and development of hearing aids and other amplification systems; performance standards and measurement techniques; selection, fitting and dispensing procedures
- CMDS 8230 CLINICAL LEVEL (2).** LEC. 2. Pr., CMDS 4660. Didactic and practical training for performing audiological testing and patient management at clinical level I.
- CMDS 8300 CENTRAL AUDITORY PROCESSING (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Selected clinical procedures in audiology, including acoustic reflex measures and behavioral test of central auditory function.
- CMDS 8310 AURAL REHABILITATION (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Psychosocial aspects on hearing loss; clinical and therapeutic management of older persons with hearing disorders including counseling of the hearing-impaired and their families.
- CMDS 8320 CLINICAL LEVEL II (2).** LEC. 2. Pr., CMDS 6230. Didactic and practical training for performing audiological testing and patient management at Clinical Level II. Summer.
- CMDS 8400 PEDIATRIC AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Etiologic factors, screening, audiologic assessment, differential diagnosis and clinical management of infants and children with hearing disorders.
- CMDS 8410 AURAL HABILITATION (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. The parameters involved in the management of hearing-impaired school-aged children.
- CMDS 8420 AMPLIFICATION II (3).** LEC. 3. Pr., CMDS 6220. Review of recent trends in hearing aid technology including digital and Programmable instruments.
- CMDS 8430 CLINICAL LEVEL III (2).** LEC. 2. Pr., CMDS 6230 and CMDS 6320. Didactic and practical training for performing audiological testing and patient management at Clinical Level III.
- CMDS 8500 ELECTROPHYSIOLOGICAL PROCEDURES IN AUDIOLOGY (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Selected neurophysiological clinical procedures in audiology, including electronystagmography and auditory evoked potentials.
- CMDS 8510 CLINICAL LEVEL IV (2).** LEC. 2. Pr., CMDS 6230 and CMDS 6320. Didactic and practical training for performing audiological testing and patient management at Clinical Level IV.
- CMDS 8520 HEARING CONSERVATION (3).** LEC. 3. Pr., CMDS 6310. A study of the effects of noise on the auditory system and implementation of hearing conservation programs in industry, schools and the military.
- CMDS 8570 EVALUATION OF RESEARCH IN SPEECH PATHOLOGY AND AUDIOLOGY (3).** LEC. 3. Survey of experimental designs and statistical procedures used in speech-language pathology/audiology literature for consumers of research.
- CMDS 8600 BALANCE DISORDERS (3).** LEC. 3. Pr., CMDS 4600 and CMDS 4620. Detailed coverage of the assessment and treatment of patients with balance disorders using nystagmography and other techniques.
- CMDS 8610 IMPLANT TECHNOLOGY (3).** LEC. 3. Detailed study of the assessment and treatment of patients with cochlear implants.
- CMDS 8620 OUTCOME MEASURES IN AUDIOLOGY (3).** LEC. 3. Pr., CMDS 6120. Application of research methodology to demonstrate efficacy in clinical service delivery in all areas of audiologic practice.
- CMDS 8630 COUNSELING IN AUDIOLOGY (3).** LEC. 3. Advanced course in the counseling component of rehabilitative audiology.
- CMDS 8700 PROFESSIONAL ISSUES (3).** LEC. 3. Legal and ethical issues in clinical audiology.
- CMDS 8800 THE NEUROLOGICAL BASES OF COMMUNICATION DISORDERS (3).** LEC. 3. Anatomy and physiology of the central nervous system as it relates to speech, language and hearing function and disorders.
- CMDS 8810 PRIVATE PRACTICE (3).** LEC. 3. Concepts and strategies for private practice in the areas of clinical and industrial audiology.
- CMDS 8910 CLINICAL PROBLEMS IN HEARING (2).** LEC. 2. Pr., CMDS 4660 and CMDS 4600. Class is a clinical practicum.
- CMDS 8920 CLINICAL INTERNSHIP (5).** INT. 5. SU. Pr., CMDS 6610 Intensive clinical experience at off-campus setting up to 20 hours per week of supervised practicum.

## Communication (COMM)

**CMDS 8940 CLINICAL RESIDENCY (6).** INT. 6. SU. Pr., CMDS 6920. A full time, supervised, nine month residency at an off-campus facility that provides audiologic services. Fall, Spring.

**CMDS 8950 AUDIOLOGY GRAND ROUNDS (3).** LEC. 3. Discussion/Seminar in timely clinical issues in audiology, clinical problem solving and case studies in contemporary audiologic service delivery.

**CMDS 8960 AUDIOLOGY GRAND ROUNDS SEMINAR (3).** LEC. 3. Discussion/Seminar in timely clinical issues in audiology, clinical problem solving and case studies in contemporary audiologic service delivery. Summer.

**CMDS 8980 CAPSTONE PROJECT (1).** IND. 1. A third year project involving applied clinical research or development of an innovative clinical procedure.

### Communication (COMM)

Dr. Margaret Fitch-Hauser - 844-2727

**COMM 1000 PUBLIC SPEAKING (3).** LEC. 3. Oral communication theory and practice in a public speaking setting with emphasis on content, organization, delivery, and adaptation to the audience.

**COMM 2010 MESSAGE PREPARATION AND ANALYSIS (3).** LEC. 3. Pr., COMM 1000. Theory underlying the construction of rhetorical messages as well as critical perspectives for the analysis of public discourse.

**COMM 2400 COMMUNICATION IN ORGANIZATIONS (3).** LEC. 3. Communication in modern organizations emphasizing practice in areas such as interviewing, meeting management, and professional presentations.

**COMM 2410 SMALL GROUP COMMUNICATION (3).** LEC. 3. Theory and practice of competent communication in task-oriented small group settings such as committees. Topics include roles, leadership, decision making, problem solving, and conflict management.

**COMM 2910 COMMUNICATION PRACTICUM (1-3).** AAB/PRA. SU. Practical experiences in potential career fields gained while working in professional settings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**COMM 3100 SPEAKING BEFORE AUDIENCES (3).** LEC. 3. Pr., COMM 1000. Refining the knowledge and skills necessary for communicating clearly and effectively in oral presentations. Recommended for COMM majors only.

**COMM 3110/3113/3114 PERSUASIVE DISCOURSE (3).** LEC. 3. Understanding and analyzing persuasive messages. Survey of theoretical approaches to attitude formation and change. Developing skills as a critical evaluation of persuasive messages.

**COMM 3350 VISUAL COMMUNICATION (3).** LEC. 3. Visual literacy, cognition, aesthetics, critical evaluation, and technology in communication, with emphasis on impact of visual media in informative, interpretive, and persuasive communication.

**COMM 3450 INTERCULTURAL COMMUNICATION (3).** LEC. 3. Different types of problems encountered when communicating with different cultures.

**COMM 3500 FOUNDATIONS OF HUMAN COMMUNICATION (3).** LEC. 3. Theories examining the nature of human communication.

**COMM 3600 FOUNDATIONS OF RHETORIC AND SOCIAL INFLUENCE (3).** LEC. 3. Rhetorical theory from its classical roots to contemporary thinkers. Relates rhetorical theory and analysis to understanding persuasive discourse in our society.

**COMM 3700 ARGUMENTATIVE DISCOURSE (3).** LEC. 3. Examination of the critical tools necessary to evaluate arguments in current public discourse.

**COMM 3970 SPECIAL TOPICS IN COMMUNICATION (3-6).** LEC. Topics that range beyond what is covered in other courses within the current curriculum. The specific subject matter is left up to the individual instructor. Course may be repeated for a maximum of 6 credit hours.

**COMM 4100 COMMUNICATION STRATEGIES OF SOCIAL MOVEMENTS (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examines persuasive strategies used in social movements to attract members, solidify support, and effect social change. Departmental approval.

**COMM 4400 GENDER COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examination of the ways in which gender is communicated interpersonally, through small groups and organizations, and through the mass media.

**COMM 4410 THEORIES OF LEADERSHIP (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examination of theory and research in leadership as a communication variable and behavioral practice in small group and organizational settings.

**COMM 4470 HEALTH COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. The history, functions, and concepts central to the practice of health communication.

**COMM 4500 MESSAGE STRUCTURES AND INFORMATION PROCESSING (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Relationship between message structures and information processing in both cognitive and affective domains during speaking and listening.

**COMM 4600 POLITICAL COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Critical analysis and evaluation of political communication.

**COMM 4700 LEGAL COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examination of the trial process including jury selection, opening statement, direct examination, cross examination, and closing arguments.

**COMM 4800 INTERPERSONAL COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. The relationship between communication and the formation of self identity and maintenance of relationships

**COMM 4810 NONVERBAL COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Focuses on the theory of non-language based communication and the impact of these messages on the overall communication process.

**COMM 4850 DISCOURSE IN SOCIAL LIFE (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Language and social interaction as they reflect and shape identity of self, relationships, and group members.

**COMM 4920 INTERNSHIP (3-6).** AAB/INT. 3. SU. Opportunity to apply classroom experience in a job setting. Admission to Internship program. Course may be repeated for a maximum of 6 credit hours.

**COMM 4930 DIRECTED STUDIES IN COMMUNICATION (3).** IND. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Independent study on a specific topic of interest not already addressed in any regular Communication course. May repeat with a change of topic for a maximum of 6 credit hours. Departmental approval.

**COMM 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. COMM 3500 and COMM 3600 and RTVF 3300. Course may be repeated for a maximum of 3 credit hours.

**COMM 4970/4973 SPECIAL TOPICS IN COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Topics in communication. May repeat with a change in topic. Departmental approval.

**COMM 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. COMM 3500 and COMM 3600 and RTVF 3300. Course may be repeated for a maximum of 3 credit hours. 2.3 GPA. Course may be repeated for a maximum of 3 credit hours.

**COMM 7000 COMMUNICATION THEORY (3).** LEC. 3. A critical examination of contemporary theories in the field of communication.

**COMM 7010 HISTORICAL, DESCRIPTIVE, AND CRITICAL APPROACHES TO COMMUNICATION RESEARCH (3).** LEC. 3. Consideration of the scope and nature of these types of research and their contribution to understanding human communication.

**COMM 7020 EMPIRICAL APPROACH TO COMMUNICATION RESEARCH (3).** LEC. 3. Quantitative research in communication; emphasis on understanding and doing empirical research.

**COMM 7230 RHETORICAL CRITICISM (3).** LEC. 3. Advanced methods in rhetorical criticism including tools for the analysis of persuasive messages.

**COMM 7300 APPROACHES TO STUDYING LANGUAGE AND SOCIAL INTERACTION (3).** LEC. 3. Major approaches to studying language and social interaction that collectively make up a substantive area of inquiry known as discourse analysis.

**COMM 7410 DEVELOPMENT OF RHETORICAL THEORY (3).** LEC. 3. Historical survey of rhetorical theory from ancient to contemporary era; special attention to the role of rhetoric in shaping attitudes towards persuasion.

**COMM 7420 SEMINAR IN PERSUASION AND ATTITUDE CHANGE (3).** LEC. 3. A critical examination of current theory and research in the area of the persuasive act and its effects.

**COMM 7430 SEMINAR IN AMERICAN PUBLIC ADDRESS (3).** LEC. 3. Investigates key issues and debates that have emerged in post-WW II America.

**COMM 7440 SEMINAR IN ARGUMENTATION AND DEBATE (3).** SEM. 3. The fundamental theories of argumentation will be analyzed.

**COMM 7450 SEMINAR IN INTRAPERSONAL PROCESSES IN COMMUNICATION (3).** SEM. 3. Theories of cognitive and affective processing of information during speaking and listening.

**COMM 7460 SEMINAR IN INTERPERSONAL COMMUNICATION (3).** SEM. 3. Theories of the structure and function of interpersonal (dyadic) communication focusing on conversational behavior, traits, relationships, and persuasion.

**COMM 7470 SEMINAR IN SMALL GROUP COMMUNICATION (3).** SEM. 3. Advanced study of the principles of communication as they apply to the small group setting.

**COMM 7480 SEMINAR IN ORGANIZATIONAL COMMUNICATION (3).** SEM. 3. An in-depth approach to the study of communication processes within the setting of modern organizations.

**COMM 7490 HEALTH COMMUNICATION (3).** LEC. 3. Examination and application of social science research approaches to the study of health communication.

**COMM 7500 GENDER COMMUNICATION (3).** LEC. 3. Explores current theories and research on the relationship between communication and gender.

## Communication (COMM)

**COMM 7600 MASS COMMUNICATION THEORY (3).** LEC. 3. Explores major areas of concern to the theoretical study of mass communication and the social impact of mediated messages.

**COMM 7610 STUDIES IN POPULAR CULTURE AND MASS COMMUNICATION (3).** LEC. 3. Critical approaches to identifying, interpreting and experiencing popular culture texts within historical, cultural and communication contexts.

**COMM 7620 BROADCAST PROGRAMMING AND CRITICISM (3).** LEC. 3. Explores critical, theoretical, and organizational issues relevant to programming and the production of culture within mass media environments.

**COMM 7630 MEDIA MANAGEMENT (3).** LEC. 3. In-depth analysis of current management issues specific to media managers in a multi-cultural world.

**COMM 7640 SEMINAR IN FILM THEORY AND CRITICISM (3).** SEM. 3. Explores classical and contemporary film theories and criticism.

**COMM 7650 THE MASS MEDIA AND AMERICAN POLITICS (3).** LEC. 3. Examination of the role of the mass communication system in the American political system.

**COMM 7660 CULTURAL STUDIES IN MASS MEDIA (3).** LEC. 3. Examination of communication research approaches to the study of culture and media.

**COMM 7670 CONTEMPORARY ISSUES IN FIRST AMENDMENT LAW (3).** LEC. 3. Exploration of controversial issues and cases in First Amendment Law that have been recently decided, are currently before courts, and have shaped the constitutional landscape in the United States.

**COMM 7680 SPORTS, MEDIA, AND CULTURE (3).** LEC. 3. Cultural implications of the relationship between sports and media.

**COMM 7810 PUBLIC RELATIONS THEORY (3).** LEC. 3. Current areas of concern in the theoretical study of public relations.

**COMM 7820 PUBLIC RELATIONS CAMPAIGNS (3).** LEC. 3. Focuses on the application of Public Relations and communication concepts to real campaign challenges.

**COMM 7830 PUBLIC RELATIONS CASE STUDIES (3).** LEC. 3. Examination of research on Public Relations case studies to provide a theoretical basis for analyzing real-life Public Relations situations.

**COMM 7840 COMMUNICATION TRAINING AND CONSULTING (3).** LEC. 3. The theory, concepts and skills needed to be an effective communications trainer or consultant.

**COMM 7930 DIRECTED STUDIES (1-3).** IND. Conferences, readings, research, and reports in one of the fields listed: a) general communication, b) mass communication, or c) public relations. Course may be repeated for a maximum of 3 credit hours.

**COMM 7970 SPECIAL TOPICS IN COMMUNICATION (3).** SEM. 3. Advanced treatment of contemporary topics, trends, current research findings and opportunities. May be repeated for credit with change in topic.

**COMM 7980 NON-THESIS PROJECT IN COMMUNICATION (3-6).** LEC. SU. Pr., COMM 7000 and COMM 7010 and COMM 7020. Minimum 27 graduate hours including COMM 7000, COMM 7010, COMM 7020. Professional experience in communication area of interest. Must include managerial experience. Only 3 hours will apply to the degree.

**COMM 7990 RESEARCH AND THESIS (1-6).** MST. Course may be repeated with a change in topic.

### JOURNALISM (JRNL)

**JRNL 1100 NEWSPAPER FUNDAMENTALS (3).** LEC. 3. Emphasis on Associated Press Stylebook, word selection in newspaper writing and spelling.

**JRNL 2210 NEWSWRITING (3).** LEC. 3. Pr., JRNL 1100. Introduction to newswriting techniques, with emphasis on learning news values, recognizing parts of a story and writing stories that meet standards of accuracy, grammar, style, spelling, law and ethics.

**JRNL 2310 REPORTING (3).** LEC. 3. Pr., JRNL 1100 and JRNL 2210. Traditional and electronic methods of gathering news; the writing of clear, accurate and meaningful news stories, and codes of ethical journalistic behavior. Includes coverage of speeches and meetings outside of class.

**JRNL 2320 ADVISING STUDENT PUBLICATIONS (3).** LEC. 3. Primarily for non-journalism and non-communication majors. Role and responsibilities of the publication adviser in high school and college.

**JRNL 2910 PRACTICUM IN JOURNALISM (1).** LEC. 1. SU. Pr., JRNL 1100 and JRNL 2210. Required for all Journalism majors. Working a minimum of 45 hours for The Auburn Plainsman in reporting, feature writing, editing and design Departmental approval.

**JRNL 3220 FEATURE WRITING (3).** LEC. 3. Pr., JRNL 1100 and JRNL 2210. Various techniques of writing and selling features, both short and long pieces, for newspapers and magazine markets.

**JRNL 3410 PHOTOJOURNALISM (3).** LEC. 3. Uses, techniques and processes of digital photography for the newspaper, magazine, and web-based industries.

Operations of digital SLRs and PhotoShop and techniques for variety of assignments are addressed.

**JRNL 3470 NEWSPAPER EDITING AND DESIGN (3).** LEC. 3. Pr., JRNL 1100 and JRNL 2210. The basics of newspaper copy editing and design; with emphasis on hands-on techniques.

**JRNL 3510 MULTIMEDIA JOURNALISM (3).** LEC. 3. Pr., JRNL 1100 and JRNL 2210 or RTVF 3380. An introduction to multimedia journalistic storytelling. A reporting and production course where students use various technologies to produce journalism stories for digital platforms. Departmental approval.

**JRNL 4230 ADVANCED REPORTING (3).** LEC. 3. Pr., JRNL 2310 and JRNL 3220 and JRNL 3380. Developing and writing news stories under deadline pressure; investigative and interpretative reporting.

**JRNL 4320 NEWSPAPER MANAGEMENT (3).** LEC. 3. Pr., JRNL 1100. All aspects of newspaper operation, with particular emphasis on problems and opportunities facing print-media management.

**JRNL 4410 JOURNALISM HISTORY (3).** LEC. 3. Issues facing the American press, from colonial times to the present, with emphasis on regional and state issues.

**JRNL 4417 HONORS JOURNALISM HISTORY (3).** LEC. 3. Pr., Honors College. Issues facing the American press, from colonial times to the present, with emphasis on regional and state issues. Credit will not be given for both JRNL 4410 and JRNL 4417.

**JRNL 4430 JOURNALISM WORKSHOP (1).** LEC. 1. Pr., JRNL 2310 and JRNL 3220 and JRNL 3470. Supervised, closely monitored work experience. Should be taken two consecutive semesters. Students must also enroll for one-hour Journalism Special Studies (JRNL 4930) one semester to complete the three-hour requirement. Credit will not be given for both JRNL 4430 and JRNL 4920. Departmental approval.

**JRNL 4470 ADVANCED FEATURE WRITING (3).** LEC. 3. Pr., JRNL 1100 and JRNL 2310 and JRNL 3220 and JRNL 3470. Feature writing skills and magazine and freelance writing.

**JRNL 4480 ADVANCED PUBLICATION DESIGN (3).** LEC. 3. Pr., JRNL 3470. Desktop publishing knowledge required to produce print publications, including brochures and newsletters, and with exposure to web page, advertising and, magazine design.

**JRNL 4490 LITERARY JOURNALISM (3).** LEC. 3. Pr., JRNL 1100. A survey course on the best nonfiction produced by journalists.

**JRNL 4920 JOURNALISM INTERNSHIP (3-6).** INT. Pr., JRNL 2310 and JRNL 2910 and JRNL 3220 and JRNL 3470. Supervised, closely monitored work experience.

**JRNL 4930 DIRECTED STUDIES (1-4).** IND. Research and analysis of specific areas of journalism. Course may be repeated for a maximum of 6 credit hours.

**JRNL 4967 HONORS SPECIAL PROBLEMS (1-3).** LEC. 3. Pr., Honors College. Departmental approval; Course may be repeated for a maximum of 3 credit hours.

**JRNL 4970 SPECIAL TOPICS IN JOURNALISM (3).** LEC. 3. Study of narrowly-defined journalism topics not already covered in the current JRNL curriculum. Fall, Spring. Course may be repeated for a maximum of 6 credit hours.

**JRNL 4997 HONORS THESIS (1-3).** IND. 3. Pr., Honors College. Departmental approval.

### PUBLIC RELATIONS (PRCM)

**PRCM 3040 FOUNDATIONS OF PUBLIC RELATIONS (3).** LEC. 3. Overview of public relations looking at communication skills and technologies necessary for successful public relations.

**PRCM 3050 CASE STUDIES AND ETHICS IN PUBLIC RELATIONS (3).** LEC. 3. Pr., JRNL 1100 and PRCM 3040 Investigation and analysis of public relations problems through case studies.

**PRCM 3080 INTERNATIONAL PUBLIC RELATIONS (3).** LEC. 3. Pr., JRNL 1100 and PRCM 3040. Exploration of public relations theory, research, and practice in an international context.

**PRCM 3090 PUBLIC RELATIONS IN POLITICAL PROCESS (3).** LEC. 3. Pr., PRCM 3090. Surveys the intersection of politics and public relations, offering students an opportunity get familiar with theoretical and practical principles in political processes.

**PRCM 3260 STRATEGIC COMMUNICATION IN PUBLIC RELATIONS (3).** LEC. 3. Pr., JRNL 1100 and PRCM 3040. Framework for the strategy and integration of messages within public relations.

**PRCM 3270 PUBLIC RELATIONS IN THE NOT FOR PROFIT ARENA (3).** LEC. 3. Course focuses on nonprofit organization foundations and the role of public relations within those organizations.

**PRCM 3280 SOCIAL MEDIA AND PUBLIC RELATIONS (3).** LEC. 3. Course examines how new social media impact PR strategies.

**PRCM 4020 STYLE AND DESIGN IN PUBLIC RELATIONS MESSAGES (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and JRNL 1100 and PRCM 3040 and

## Computer Science and Software Engineering (COMP)

**RTVF 3300.** Introduction to the use of style and design in public relations messages. Departmental approval.

**PRCM 4080 WRITING FOR PUBLIC RELATIONS (3).** LEC. 3. Pr., JRNL 1100 and PRCM 3040 and (COMM 3500 or COMM 3600 or RTVF 3300 or JRNL 2310 or JRNL 3320 or JRNL 3470). Departmental approval. Writing skills necessary for the practice of public relations.

**PRCM 4090 PUBLIC RELATIONS CAMPAIGNS (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and JRNL 1100 and PRCM 4080 and PRCM 4510 and RTVF 3300 and (PRCM 4040 or PRCM 3050). Capstone course designed to apply Public Relations and Communication principles to a campaign situation. Departmental approval.

**PRCM 4510 SURVEY RESEARCH METHODS (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and JRNL 1100 and PRCM 3040 and RTVF 3300. Basic research principles and survey research as it is used by mass media and public relations. Departmental approval.

**PRCM 4920 INTERNSHIP (3-6).** AAB/INT. 3. SU. Opportunity to apply classroom experience to real job setting. Course may be repeated for a maximum of 6 credit hours.

**PRCM 4930 DIRECTED STUDIES IN PUBLIC RELATIONS (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and JRNL 1100 and PRCM 3040 and RTVF 3300. Independent Study on a specific topic of interest not already addressed in any regular Public Relations course.

**PRCM 4970 SPECIAL TOPICS IN PUBLIC RELATIONS (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and JRNL 1100 and PRCM 3040 and RTVF 3300. This course focuses on narrowly-defined Public Relations topics not already covered in the current PRCM curriculum.

### RADIO/TV/FILM (RTVF)

**RTVF 2330 LIVE EVENT VIDEO PRODUCTION (3).** LEC. 3. Development and production of live video events.

**RTVF 2350/2353/2354 INTRODUCTION TO FILM STUDIES (3).** LEC. 2, LAB. 2. Introduction to film analysis, modes of film practice and critical approaches to the study of cinema.

**RTVF 2370 ELECTRONIC FIELD PRODUCTION (3).** LEC. 3. The principles and techniques of video tape production with emphasis on portable equipment, including production of electronic news gathering projects and short creative field-produced programs.

**RTVF 2800 MULTIMEDIA PRODUCTION (3).** LEC. 3. Introduction to basic multimedia production, with emphasis on radio and web-based audio/visual production.

**RTVF 3210 SOUNDTRACKS MUSIC MASS MEDIA (3).** LEC. 3. Historical, artistic and economic contexts of music and the mass media.

**RTVF 3300 FOUNDATION OF MASS COMMUNICATION (3).** LEC. 3. Historical and theoretical bases of mass communication in the U. S., emphasizing social, cultural, regulatory and economic aspects.

**RTVF 3350 WRITING FOR RADIO, TELEVISION AND FILM (3).** LEC. 3. The study, practice, and development of writing skills and techniques for radio, television, and film, including commercials, features, PSAs, and dramatic scripts.

**RTVF 3380 BROADCAST NEWSWRITING (3).** LEC. 3. Writing and editing news stories for broadcast.

**RTVF 3420 INTRODUCTION TO FILMMAKING (3).** STU. 3. Developing conceptual and technical skills for communicating ideas through digital films.

**RTVF 3580 REPRODUCING POPULAR CULTURE (3).** LEC. 3. Postmodern study on the widespread recycling of media culture artifacts.

**RTVF 3970 SPECIAL TOPICS IN MEDIA (3).** LEC. 3. Special topics concentration on production, distribution, and exhibition of mass communication. Course may be repeated for a maximum of 6 credit hours.

**RTVF 4100 INTERMEDIATE FILMMAKING (3).** LEC. 3. Further develops narrative and technical filmmaking skills.

**RTVF 4200 HISTORY OF AMERICAN BROADCASTING (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. The social, economic and technological evolution of radio and television in the United States.

**RTVF 4210 POPULAR CULTURE AND MASS COMMUNICATION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examines myths, icons, rituals, heroes, celebrities, genres, narratives, stereotypes as experienced and presented within communication processes.

**RTVF 4240 WOMEN AND MASS MEDIA (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Analysis of the relationship between media messages of women and socio-cultural definitions of women.

**RTVF 4260 MEDIA AND REALITY (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Analysis of the representation of "reality" in the mass media.

**RTVF 4280 DIVERSITY ISSUES MASS MEDIA (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Analysis of the relationship between media messages of minorities and socio-cultural definitions of minorities.

**RTVF 4300 BROADCAST PROGRAMMING AND CRITICISM (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Introduces critical, theoretical, and organizational concepts, strategies, processes, and frameworks for programming for mass media systems.

**RTVF 4310 MEDIA AND SOCIETY (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examination of the relationship between the mass communication industry and a mass society.

**RTVF 4320 BROADCAST MANAGEMENT (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Investigates principles and practices of managing broadcast stations and cable operations.

**RTVF 4340 TV AND THE FAMILY (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examination of the relationship between television and the American Family.

**RTVF 4350 MEDIA RELATIONS (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Major concepts and theories of media relations management with special emphasis on electronic media.

**RTVF 4360 HISTORY OF INTERNATIONAL CINEMA (3).** LEC. 2, LAB. 2. Pr., COMM 3500 and COMM 3600 and RTVF 3300. History of international cinema, including national cinemas, film movements, directors, and style.

**RTVF 4370 MEDIA AND RELIGION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Representations and influences of religions in the mass media.

**RTVF 4380/4383/4384 HISTORY OF THE AMERICAN FILM INDUSTRY (3).** LEC. 2, LAB. 2. Pr., COMM 3500 and COMM 3600 and RTVF 3300. History of the film industry and its relationship to U.S. society.

**RTVF 4390 FILM AUTHORS (3).** LEC. 2, LAB. 1. In-depth study of one or more filmmakers important to the development of film as a popular art form.

**RTVF 4410 BROADCAST NEWS PRODUCTION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Theoretical applications with practical experience in broadcast news program production. Emphasis on individual and team production skills and techniques.

**RTVF 4420 HISTORY OF MEDIA TECHNOLOGY (3).** LEC. 3. History of media technology from 18th-21st centuries.

**RTVF 4580 FAME, CELEBRITY, AND MEDIA CULTURE (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Examination of celebrity and fame as distinguishing cultural phenomena.

**RTVF 4600 ADAPTATION FOR THE SHORT FILM (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300 and RTVF 3420 and RTVF 4100. A survey of ways in which film can be adapted from pre-existing sources to create new works that stand on their own.

**RTVF 4800 ADVANCED MULTIMEDIA PRODUCTION (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 2800 and RTVF 3300. Design and production of advanced multimedia projects. Departmental approval.

**RTVF 4820 SEQUENCE DESIGN (3).** LEC. 3. The conceptual understanding, development and use of images and text for time based media.

**RTVF 4920 INTERNSHIP (3-6).** AAB/INT. 3. SU. Opportunity to apply classroom experience to real job setting. Admission to internship program. Course may be repeated for a maximum of 6 credit hours.

**RTVF 4930 DIRECTED STUDIES IN RADIO/TELEVISION/FILM (3).** AAB/IND. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Independent study on a specific topic of interest not already addressed in any regular Radio/Television/Film courses. Course may be repeated for a maximum of 6 credit hours.

**RTVF 4970 SPECIAL TOPICS IN RADIO/TELEVISION/FILM (3).** LEC. 3. Pr., COMM 3500 and COMM 3600 and RTVF 3300. Study of narrowly-defined RTVF topics not already covered in the current RTVF curriculum. May be repeated with a change in topic.

## Computer Science and Software Engineering (COMP)

Dr. Kai Chang - 844-6310

**COMP 1AA0 COMPUTER COMPETENCY TEST (0).** TST. SU. A comprehensive test of all material covered in COMP 1000 and COMP 1003.

**COMP 1000/1003/1004 PERSONAL COMPUTER APPLICATIONS (2).** LEC. 2. Introduction to personal computers and software applications, including word processing, spreadsheets, databases, and presentation graphics; generation and retrieval of information with the Internet; integration of data among applications.

**COMP 1200 INTRODUCTION TO COMPUTING FOR ENGINEERS AND SCIENTISTS (2).** LEC. 2. Computer programming in a high-level language, with emphasis on use of the computer as a tool for engineering or science.

**COMP 1201 INTRODUCTION TO COMPUTING LABORATORY (1).** LAB. 2. Coreq., COMP 1200. Laboratory activities focused on computer programming in a high-level language.

**COMP 1210 FUNDAMENTALS OF COMPUTING I (3).** LEC. 2, LAB. 3. Introduction to the fundamental concepts of programming from an object-oriented perspective. Emphasis on good software engineering principles and development of the funda-



mental programming skills in the context of a language that supports the object-oriented paradigm.

**COMP 1217 HONORS FUNDAMENTALS OF COMPUTING I (3).** LEC. 2, LAB. 3. Pr., Honors College. Introduction to the fundamental concepts of programming from an object-oriented perspective. Emphasis on good software engineering principles and development of the fundamental programming skills in the context of a language that supports the object-oriented paradigm.

**COMP 2000 NETWORK PROGRAMMING WITH HTML AND JAVA (3).** LEC. 3. Pr., COMP 1000 or ENGR 1110. Introduction to network programming using HTML and Java to build web pages and web-based applications; presentation graphics; retrieval of information from the Internet; integration of data among applications.

**COMP 2210 FUNDAMENTALS OF COMPUTER SCIENCE II (4).** LEC. 3, LAB. 3. Pr., COMP 1210. Continuation of COMP 2200 with emphasis on data structures such as lists, trees, graphs and hash tables.

**COMP 2710 SOFTWARE CONSTRUCTION (3).** LEC. 3. Pr., COMP 2210. Intensive experience in software construction, to include topics such as testing, debugging, and associated tools; configuration management; low-level file and device I/O; systems and event-driven programming.

**COMP 3000 OBJECT-ORIENTED PROGRAMMING FOR ENGINEERS AND SCIENTISTS (3).** LEC. 3. Fundamentals of object-oriented design and programming principles; data abstraction, identifying objects, problem decomposition, design and implementation of classes. Credit for the major will not be given to CSCI and SWEN, and WIRS majors. Departmental approval.

**COMP 3010/3013/3014 SPREADSHEET-BASED APPLICATIONS WITH VISUAL BASIC (3).** LEC. 2, LAB. 3. Pr., COMP 1200-3000 COMP 1200 or higher. Design and implementation of applications such as simulations, spreadsheet front-ends for modeling, interfaces to databases, and multimedia applications.

**COMP 3220 PRINCIPLES OF PROGRAMMING LANGUAGES (3).** LEC. 3. Pr., COMP 2210. Study of programming language principles supporting procedural abstraction, data abstraction, storage allocation, and parallel execution; language types and examples; language translations.

**COMP 3240 DISCRETE STRUCTURES (3).** LEC. 3. Pr., COMP 1210. Characterization of computer science data structures and algorithms in terms of sets and relations, functions, recurrence relations. Use of propositional and predicate calculus to describe algorithms. Proving correctness and running time bounds for algorithms by induction and structural induction.

**COMP 3270 INTRODUCTION TO ALGORITHMS (3).** LEC. 3. Pr., COMP 3240 and COMP 2210. Algorithms for standard computational problems and techniques for analyzing their efficiency; designing efficient algorithms and experimentally evaluating their performance.

**COMP 3350 COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING (3).** LEC. 3. Pr., ELEC 2200 or ELEC 2210. Stored Program Computers, hardware and software components; data representation, instruction sets, addressing modes; assembly language programming; linkers, loader, and operating systems.

**COMP 3500 INTRODUCTION TO OPERATING SYSTEMS (3).** LEC. 3. Pr., COMP 2710 and (COMP 3350 or ELEC 2220). Structure and functions of operating systems; processes and process scheduling; synchronization and mutual exclusion; memory management; auxiliary storage management; resource allocation and deadlock; security, privacy, and ethical concerns; design tradeoffs.

**COMP 3510 EMBEDDED SYSTEMS DEVELOPMENT (3).** LEC. 3. Pr., COMP 2710 and (COMP 3350 or ELEC 2220). Operating system design and analysis for embedded systems: Real-time issues, resource management, scheduling, exception handling, device driver development, kernel development, synchronization, network support.

**COMP 3700 SOFTWARE MODELING AND DESIGN (3).** LEC. 3. Pr., COMP 2710. Current processes, methods, and tools related to modeling and designing software systems.

**COMP 3710 WIRELESS SOFTWARE ENGINEERING (3).** LEC. 3. Pr., COMP 2710. Software engineering for wireless applications: specification, process, testing, and performance evaluation. Design and development of wireless application layer software, including current protocols.

**COMP 4000 SYSTEMS ADMINISTRATION FOR INFORMATION TECHNOLOGY (3).** LEC. 3. Pr., COMP 2000. Principles and techniques of systems administration, including configuration of mail, file servers, print servers, databases systems, and networks. Departmental approval.

**COMP 4200 FORMAL LANGUAGES (3).** LEC. 3. Pr., COMP 3240. Fundamentals of formal languages including mathematical models of regular sets, context-free languages and Turing machines; deterministic and non-deterministic models.

**COMP 4270 ADVANCED ALGORITHMS (3).** LEC. 3. Pr., COMP 3270. Fundamentals of designing and analyzing advanced algorithms. Algorithm design theory; computational complexity; relationship of data structures to algorithm design; study of design strategies including divide-and-conquer, the greedy method, and dynamic programming.

**COMP 4300 COMPUTER ARCHITECTURE (3).** LEC. 3. Pr., COMP 3350. Comparison of computer architectures, emphasizing the relationships between

system software and hardware. Includes processor control and data path organization, memory subsystem design, instruction set design, processor simulation, and quantitative analysis of computer performance.

**COMP 4320 INTRODUCTION TO COMPUTER NETWORKS (3).** LEC. 3. Pr., COMP 3500 or COMP 3510. Fundamentals of computer networks, OSI model, LAN, WAN, packet transmission, interworking, Internet Protocol, WWW and Java technology.

**COMP 4650 INTERFACE DESIGN FOR WIRELESS APPLICATIONS (3).** LEC. 3. Pr., COMP 3270. Principles of user interface design, usability, for wireless devices: Consequences of low bandwidth network connections for interface design; consequences of battery power, small screen, other limited resources on interface design; case studies; design project using technology such as WAP.

**COMP 4710 SENIOR DESIGN PROJECT (3).** LEC. 3. Pr., COMP 3700 or COMP 3710. Development of requirement definitions, architectural design specification, detailed design specification, testing plan and documentation for the software and/or hardware components of a comprehensive project.

**COMP 4730 COMPUTER ETHICS (1).** LEC. 1. Pr., PHIL 1020 or PHIL 1040. Application of ethical principles to computing-related topics, including privacy, property rights, autonomy, access, and diversity.

**COMP 4960 SPECIAL PROBLEMS (1-4).** IND. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**COMP 4970 SPECIAL TOPICS (3-4).** LEC. Investigation of current topics in computer science and software engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**COMP 4997 HONORS THESIS (3-6).** IND. Pr., Honors College. Individual student endeavor consisting of directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**COMP 5000 WEB APPLICATION DEVELOPMENT (3).** LEC. 3. Design and implementation of web sites and associated applications. Emphasis on user interface design and information organization and presentation. Fall, Spring. Departmental approval.

**COMP 5010 INTERACTIVE APPLICATIONS IN VISUAL BASIC (3).** LEC. 3. Pr., COMP 5000. Design and implementation of applications like simulations, front-ends to Excel for modeling, interfaces to databases and multimedia applications. Departmental approval.

**COMP 5020 ADVANCED WEB APPLICATION DEVELOPMENT (3).** LEC. 3. Pr., COMP 5000. Design and implementation of interactive web applications in Java as applets and servlets. Use of concepts like security, internationalization, multithreading and server/client architectures. Departmental approval.

**COMP 5030 OBJECT-ORIENTED TECHNOLOGIES (3).** LEC. 3. Pr., COMP 5000. Object-oriented design and implementation of a variety of applications including databases and intelligent agents with one or more object-oriented programming language. Departmental approval.

**COMP 5120 DATABASE SYSTEMS I (3).** LEC. 3. Pr., COMP 3270. Theoretical and applied issues related to the analysis, design, and implementation of relational database systems.

**COMP 5200 THEORETICAL COMPUTER SCIENCE (3).** LEC. 3. Pr., COMP 4200. The nature of the recursive sets and recursively enumerable sets. Decidability. Context-sensitive grammars and linear-bounded automata, including closure properties; oracles; reduction; the arithmetic hierarchy; the analytic hierarchy. Departmental approval.

**COMP 5210 COMPILER CONSTRUCTION (3).** LEC. 3. Pr., COMP 4200 and COMP 3220. Compiler organization; lexical analysis; parsing; syntax-direction translation; symbol tables; basic dependence analysis; intermediate forms; interpreters vs. compilers; run-time storage management; code generation; error detection and recovery.

**COMP 5220 ADVANCED TOPICS IN PROGRAMMING LANGUAGES (3).** LEC. 3. Pr., COMP 3220. Advanced topics in programming language concepts, design, and implementation.

**COMP 5230 DECLARATIVE PROGRAMMING LANGUAGES AND PRINCIPLES (3).** LEC. 3. Pr., COMP 3220 Functional and logic programming theoretical foundations, models and implementation issues; example language studies.

**COMP 5280 OBJECT ORIENTED PROGRAMMING LANGUAGES AND PRINCIPLES (3).** LEC. 3. Pr., COMP 3220 Object oriented language principles and study of the language support for these principles. Example languages and distributed object programming principles.

**COMP 5320 DESIGN AND ANALYSIS OF COMPUTER NETWORKS (3).** LEC. 3. Pr., COMP 4320. Computer networks design, including multiplexing, switching, routing, internetworking, transport protocols, congestion control, and performance evaluation. Departmental approval.

**COMP 5330 PARALLEL AND DISTRIBUTED COMPUTING (3).** LEC. 3. Pr., COMP 3500 or COMP 3510. Overview of hardware and software issues in parallel systems: fundamental parallel architectures, programming languages, tools and algorithms, parallel applications.

**COMP 5340 NETWORK QUALITY ASSURANCE AND SIMULATION (3).** LEC. 3. Pr., COMP 4320 or ELEC 5220. Theoretical and practical aspects of network simulation and quality assurance.

**COMP 5350 DIGITAL FORENSICS (3).** LEC. 3. Pr., COMP 2710 or ISMN 3080. Departmental approval. Computer compromise and forensics, with focus on computer crime and ways to uncover, protect, and exploit digital evidence.

**COMP 5360 WIRELESS AND MOBILE NETWORKS (3).** LEC. 3. Pr., COMP 4320. Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP personal communication systems, and GSM. Departmental approval.

**COMP 5370 COMPUTER AND NETWORK SECURITY (3).** LEC. 3. Pr., COMP 3270. Fundamentals of computer security. Access Control. Authentication. Digital signatures and watermarks. Modeling and performance assessment. Viruses and worms. Identification of avenues for compromising systems.

**COMP 5380 PERSONAL AREA NETWORKS (3).** LEC. 3. Pr., COMP 4320 or ELEC 5220. Fundamentals of very low power, short-range high-bandwidth personal network technologies such as Bluetooth and direct diffusion.

**COMP 5390 3G AND 4G WIRELESS (3).** LEC. 3. Pr., P/C, COMP 5360 or P/C, ELEC 5110. Exploration of technology types, design issues for handset and network systems, economics. Exploration of standards such as CT2, CT3, IS-91A. Future challenges for 4G.

**COMP 5400 FUNDAMENTALS OF COMPUTER GRAPHICS (3).** LEC. 3. Pr., COMP 2710 and MATH 2660 Graphics hardware and software components, coordinate systems, 2-D and 3-D transformations, 3-D viewing and projection, clipping and windowing, scan conversion and algorithms, visibility determination and shadowing, and software projects using a graphics software package.

**COMP 5500 DISTRIBUTED OPERATING SYSTEMS (3).** LEC. 3. Pr., COMP 4320. Basic concepts of distributed systems. Concurrent process communication and synchronization mechanisms, distributed process scheduling, distributed file systems, distributed shared memory, distributed system security and case studies.

**COMP 5510 NETWORKED MULTIMEDIA SYSTEMS (3).** LEC. 3. Pr., COMP 4320. Basic concepts, architecture and design of networked multimedia systems. Departmental approval.

**COMP 5520 NETWORK AND OPERATING SYSTEM ADMINISTRATION (3).** LEC. 3. Pr., COMP 4320. Studies of the installation, configuration and management of traditional, distributed and networked system software. Network integration of different systems. Performance monitoring, safety and security issues together with policies, politics and the laws regarding system software management.

**COMP 5600 ARTIFICIAL INTELLIGENCE (3).** LEC. 3. Pr., COMP 3270 and COMP 4640. Introduction to intelligent agents, search knowledge representation and reasoning, machine learning. Departmental approval.

**COMP 5610 ARTIFICIAL INTELLIGENCE PROGRAM (3).** LEC. 3. Pr., COMP 5600. Design and implementation of advanced artificial intelligence techniques including expert systems, planning, logic, and constraint programming, knowledge representation and heuristic search methods. Departmental approval.

**COMP 5620 USER INTERFACE DESIGN AND EVALUATION (3).** LEC. 3. Pr., COMP 4640. Theory and practice of designing interfaces for interactive systems, usability engineering techniques; implementing and evaluating interfaces. Departmental approval.

**COMP 5640 INTELLIGENT AND INTERACTIVE SYSTEMS (3).** LEC. 3. Pr., COMP 3270. Theory and design of intelligent and interactive software; treatments of intelligent agents and human-computer interaction.

**COMP 5700 SOFTWARE PROCESS (3).** LEC. 3. Pr., COMP 3700 or COMP 3710. Process models of the software life cycle as well as methods and tools for software development. Departmental approval.

**COMP 5710 SOFTWARE QUALITY ASSURANCE (3).** LEC. 3. Pr., COMP 3700 or COMP 3710. Processes, methods, and tools associated with the production of robust, high-quality software. Departmental approval.

**COMP 5720 REAL TIME AND EMBEDDED SYSTEMS (3).** LEC. 3. Pr., COMP 3500 or COMP 3510. Concepts of real-time and embedded computer systems. Studies of real-time algorithm issues such as timeliness, time-constrained scheduling and communication. Embedded system issues such as limited memory, low power, and high latency communication. Fall, Spring.

**COMP 6000/6006 WEB APPLICATION DEVELOPMENT (3).** LEC. 3. Design and implementation of web sites and associated applications. Emphasis on user interface design and information organization and presentation. Fall, Spring. Departmental approval.

**COMP 6010/6016 INTERACTIVE APPLICATIONS IN VISUAL BASIC (3).** LEC. 3. Pr., COMP 6000. Design and implementation of applications like simulations, front-ends to Excel for modeling, interfaces to databases and multimedia applications. Additional Pr: Departmental approval.

**COMP 6020/6026 ADVANCED WEB APPLICATION DEVELOPMENT (3).** LEC. 3. Pr., COMP 6000 Design and implementation of interactive web applications in Java as applets and servlets. Use of concepts like security, internationalization, multi-threading and server/client architectures. Fall, Spring. Departmental approval.

**COMP 6030/6036 OBJECT-ORIENTED TECHNOLOGIES (3).** LEC. 3. Pr., COMP 6000. Object-oriented design and implementation of a variety of applications including databases and intelligent agents with one or more object-oriented programming language. Departmental approval.

**COMP 6120/6126 DATABASE SYSTEMS I (3).** LEC. 3. Theoretical and applied issues related to the analysis, design, and implementation of relational database systems. Departmental approval.

**COMP 6200/6206 THEORETICAL COMPUTER SCIENCE (3).** LEC. 3. The nature of the recursive sets and recursively enumerable sets. Decidability. Context-sensitive grammars, and linear-bounded automata, including closure properties; oracles; reduction; the arithmetic hierarchy; the analytic hierarchy. ADDITIONAL PREREQUISITES: Departmental approval.

**COMP 6210/6216 COMPILER CONSTRUCTION (3).** LEC. 3. Compiler organization; lexical analysis; parsing; syntax- direction translation; symbol tables; basic dependence analysis; intermediate forms; interpreters vs. compilers; run-time storage management; code generation; error detection and recovery. Departmental approval.

**COMP 6220/6226 ADVANCED TOPICS IN PROGRAMMING LANGUAGES (3).** LEC. 3. Advanced topics in programming language concepts, design, and implementation. Departmental approval.

**COMP 6230/6236 DECLARATIVE PROGRAMMING LANGUAGES AND PRINCIPLES (3).** LEC. 3. Functional and logic programming theoretical foundations, models and implementation issues; example language studies. Departmental approval.

**COMP 6280/6286 OBJECT ORIENTED PROGRAMMING LANGUAGES AND PRINCIPLES (3).** LEC. 3. Object oriented language principles and study of the language support for these principles. Example languages distributed object programming principles. Departmental approval.

**COMP 6320/6326 DESIGN AND ANALYSIS OF COMPUTER NETWORKS (3).** LEC. 3. Computer networks design, including multiplexing, switching, routing, inter-networking, transport protocols, congestion control, and performance evaluation. Departmental approval.

**COMP 6330/6336 PARALLEL AND DISTRIBUTED COMPUTING (3).** LEC. 3. Overview of hardware and software issues in parallel systems: fundamental parallel architectures, programming languages, tools and algorithms, parallel applications. Departmental approval.

**COMP 6340/6346 NETWORK QUALITY ASSURANCE AND SIMULATION (3).** LEC. 3. Theoretical and practical aspects of network simulation and quality assurance. Departmental approval.

**COMP 6350/6356 DIGITAL FORENSICS (3).** LEC. 3. Pr., COMP 2710 or ISMN 3080. Departmental approval. Computer compromise and forensics, with focus on computer crime and ways to uncover, protect, and exploit digital evidence.

**COMP 6360/6366 WIRELESS AND MOBILE NETWORKS (3).** LEC. 3. Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP personal communication systems, and GSM. Departmental approval.

**COMP 6370/6376 COMPUTER AND NETWORK SECURITY (3).** LEC. 3. Fundamentals of computer security. Access Control. Authentication. Digital signatures and watermarks. Modeling and performance assessment. Viruses and worms. Identification of avenues for compromising systems. Departmental approval.

**COMP 6380/6386 PERSONAL AREA NETWORKS (3).** LEC. 3. Fundamentals of very low power, short-range high-bandwidth personal network technologies such as Bluetooth and direct diffusion. Departmental approval.

**COMP 6390/6396 3G AND 4G WIRELESS (3).** LEC. 3. Pr., P/C, COMP 6360 or COMP 6366 or P/C, ELEC 6110 or ELEC 6116. Exploration of technology types, design issues for handset and network systems, economics. Exploration of standards such as CT2, CT3, IS-91A. Future challenges for 4G. Departmental approval.

**COMP 6400/6406 FUNDAMENTALS OF COMPUTER GRAPHICS (3).** LEC. 3. Graphics hardware and software components, coordinate systems, 2-D and 3-D transformations, 3-D viewing and projection, clipping and windowing, scan conversion and algorithms, visibility determination and shadowing, and software projects using a graphics software package. Departmental approval.

**COMP 6500/6506 DISTRIBUTED OPERATING SYSTEMS (3).** LEC. 3. Basic concepts of distributed systems. Concurrent process communication and synchronization mechanisms, distributed process scheduling, distributed file systems, distributed shared memory, distributed system security and case studies. Departmental approval.

**COMP 6510/6516 NETWORKED MULTIMEDIA SYSTEMS (3).** LEC. 3. Basic concepts, architecture and design of networked multimedia systems. Departmental approval.

**COMP 6520/6526 NETWORK AND OPERATING SYSTEM ADMINISTRATION (3).** LEC. 3. Studies of the installation, configuration and management of traditional, distributed and networked system software. Network integration of different systems. Performance monitoring, safety and security issues together with policies, politics and the laws regarding system software management. Departmental approval.

**COMP 6600/6606 ARTIFICIAL INTELLIGENCE (3).** LEC. 3. Introduction to intelligent agents, search knowledge representation and reasoning, machine learning. Departmental approval.

**COMP 6610/6616 ARTIFICIAL INTELLIGENCE PROGRAMMING (3).** LEC. 3. Pr., COMP 6600. Design and implementation of advanced artificial intelligence techniques including expert systems, planning, logic and constraint programming, knowledge representation and heuristic search methods. Departmental approval.

**COMP 6620/6626 USER INTERFACE DESIGN AND EVALUATION (3).** LEC. 3. Theory and practice of designing interfaces for interactive systems, usability engineering techniques; implementing and evaluating interfaces. Departmental approval.

**COMP 6640/6646 INTELLIGENT AND INTERACTIVE SYSTEMS (3).** LEC. 3. Pr., COMP 3270. Theory and design of intelligent and interactive software; treatments of intelligent agents and human-computer interaction.

**COMP 6700/6706 SOFTWARE PROCESS (3).** LEC. 3. Process models of the software life cycle as well as methods and tools for software development. Departmental approval.

**COMP 6710/6716 SOFTWARE QUALITY ASSURANCE (3).** LEC. 3. Processes, methods, and tools associated with the production of robust, high-quality software. Departmental approval.

**COMP 6720/6726 REAL TIME AND EMBEDDED SYSTEMS 125 (3).** LEC. 3. Concepts of real-time and embedded computer systems. Studies of real-time algorithm issues such as timeliness, time-constrained scheduling and communication. Embedded system issues such as limited memory, low power, and high latency communication. Fall, Spring. Departmental approval.

**COMP 7120/7126 DATABASE SYSTEMS II (3).** LEC. 3. Pr., COMP 6120 or COMP 6126. Theoretical and applied issues related to the analysis, design, and implementation of object-oriented database systems. Departmental approval.

**COMP 7210/7216 ADVANCED COMPILER DESIGN (3).** LEC. 3. Pr., COMP 6210 or COMP 6216. Optimizing compilers, dependence analysis, parallelizing compilers. Compilation for non-imperative languages. Compiling object-oriented languages. Departmental approval.

**COMP 7220/7226 PROGRAMMING LANGUAGE DESIGN AND SPECIFICATIONS (3).** LEC. 3. Pr., COMP 6220. Issues related to programming language design. Lambda calculus as a formalism for specification. Predicate logic. Higher-order logics. Completeness and consistency. Data representations issues. Translation: interpretation vs. compilation. Type theory. Departmental approval.

**COMP 7270/7276 ADVANCED TOPICS IN ALGORITHMS (3).** LEC. 3. In-depth study of advanced topics in algorithms. Departmental approval.

**COMP 7280/7286 PROGRAMMING LANGUAGE SEMANTICS (3).** LEC. 3. Pr., COMP 6220 or COMP 6226. Survey of techniques for programming language semantic specification. Hoare triples. Axiomatic semantics. Structural operational semantics. Domain theory. Denotational semantics of a functional language. Denotational semantics of imperative languages. Lambda calculus. Departmental approval.

**COMP 7300/7306 ADVANCED COMPUTER ARCHITECTURE (3).** LEC. 3. Modern instruction level parallel computer design, including superscalar and very-long instruction word processor design. Departmental approval.

**COMP 7310/7316 VLSI CAD TOOL DESIGN (3).** LEC. 3. Pr., COMP 6210. Design of CAD tools for VLSI design, including high-level synthesis and hardware-software co-design, logic synthesis, floor planning, optimization, placement and routing. Software development of a CAD tool as a comprehensive project. Departmental approval.

**COMP 7320/7326 ADVANCED COMPUTER NETWORKS (3).** LEC. 3. Pr., COMP 6320 or COMP 6326. Advanced network topics, including ISDN, ATM, active networks, security, Internet, wireless and mobile networks, and network management. Departmental approval.

**COMP 7330/7336 TOPICS IN PARALLEL AND DISTRIBUTED COMPUTING (3).** LEC. 3. Pr., COMP 6330 or COMP 6336. Parallel programming languages, environments and tools, parallel algorithms performance issues, distributed memory systems, group communication, fault tolerance. Departmental approval.

**COMP 7340/7346 HIGH SPEED NETWORKS (3).** LEC. 3. Pr., COMP 6320 or COMP 6326. High-speed networks design, including ATM and gigabit Ethernet, quality of service, ATM traffic, congestion control ATM switching, and signaling. Departmental approval.

**COMP 7350/7356 MULTIMEDIA NETWORKING (3).** LEC. 3. Pr., COMP 6320 or COMP 6326. Multimedia network requirements, coding, compression, multicast, traffic shaping and analysis, quality of service, scheduling, buffer design and congestion control. Departmental approval.

**COMP 7360/7366 WIRELESS AND MOBILE NETWORKS (3).** LEC. 3. Pr., COMP 6320 or COMP 6326. Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP, personal communication systems, and GSM. Departmental approval.

**COMP 7370/7376 ADVANCED COMPUTER AND NETWORK SECURITY (3).** LEC. 3. Pr., COMP 6370 or COMP 6376. Advanced, research-based examination

of computer network attack and defense techniques, viruses and other malware; operating system vulnerabilities and safeguards. Departmental approval.

**COMP 7400/7406 ADVANCED COMPUTER GRAPHICS (3).** LEC. 3. Pr., COMP 6400 or COMP 6406. Advanced 3-D topics including visual realism issues, visible surface determination algorithms, illumination and shading models, surface and solid modeling, advanced modeling techniques, special purpose graphics architectures, and animation. Software projects will be assigned. Departmental approval.

**COMP 7440 SIMULATION OF COMPUTER NETWORKS (3).** LEC. 3. Research-based examination of network simulation, including TCP/IP networks, wireless networks and verification and validation of a network simulation. Departmental approval.

**COMP 7500/7506 ADVANCED TOPICS IN OPERATING SYSTEMS (3).** LEC. 3. Pr., COMP 6500 or COMP 6506. Advanced topics in operating system concepts, design and implementation. Departmental approval.

**COMP 7600/7606 COMPUTATIONAL INTELLIGENCE (3).** LEC. 3. Pr., COMP 6600 or COMP 6606. A study of computational intelligence with emphasis on the design and implementation of neural, genetic and fuzzy computing techniques. Departmental approval.

**COMP 7610/7616 COMPUTATIONAL COGNITION (3).** LEC. 3. Pr., COMP 6600 or COMP 6606. Computational models of cognition, including knowledge representations and process mechanisms like means-ends analysis, semantic networks, frames. Departmental approval.

**COMP 7620/7626 HUMAN-COMPUTER INTERACTION (3).** LEC. 3. Coreq., COMP 6620. Theoretical principles and practical aspects of interaction between humans and computers, design and evaluation of interactive systems. Departmental approval.

**COMP 7700/7706 SOFTWARE ARCHITECTURE (3).** LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Methods and tools related to the analysis, specification and design of software architecture. Departmental approval.

**COMP 7710/7716 SOFTWARE ENVIRONMENTS (3).** LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Issues associated with the design, implementation, and use of software engineering environments. Departmental approval.

**COMP 7720/7726 SOFTWARE RE-ENGINEERING (3).** LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Process, methods and tools associated with re-engineering software systems. Departmental approval.

**COMP 7730/7736 FORMAL METHODS FOR SOFTWARE (3).** LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Precise, abstract models for characterizing and reasoning about properties of software systems. Departmental approval.

**COMP 7740 AGENT-DIRECTED SIMULATION (3).** LEC. 3. Pr., COMP 6700 or COMP 6706. Covers entire simulation software development life cycle including problem formulation, system and objectives definition, conceptual modeling, model design, implementation, analysis of simulation data, and credibility assessment including verification and validation. Special emphasis is given to modeling aspects using agent-directed simulation methodology. Departmental approval.

**COMP 7930 DIRECTED STUDY (1-3).** IND. Course may be repeated with a change in topic. Departmental approval. Course may be repeated with change in topics.

**COMP 7950/7956 INTRODUCTION TO GRADUATE STUDY IN COMPUTER SCIENCE AND SOFTWARE ENGINEERING (1).** LEC. 1. SU. Introduction to graduate research and study topics in computer science and software engineering.

**COMP 7970/7976 SPECIAL TOPICS (1-3).** LEC. Course may be repeated with a change in topic.

**COMP 7980/7986 MASTER OF SOFTWARE ENGINEERING DESIGN PROJECT (1-15).** IND. SU. Planning, implementation, and completion of a design project. Project culminates in both a written report and an oral presentation. Course may be repeated with a change in topic.

**COMP 7990 RESEARCH AND THESIS (1-15).** MST. Course may be repeated with a change in topic.

**COMP 8120 CURRENT TOPICS IN DATABASE SYSTEMS (3).** LEC. 3. Pr., COMP 6120 or COMP 6126. Theoretical and applied research issues related to database systems. Topics will reflect current research in the field. Departmental approval.

**COMP 8220 RESEARCH TOPICS IN PROGRAMMING LANGUAGES (3).** LEC. 3. Pr., COMP 7220 or COMP 7226. Topics of current research in the area of programming languages, their design, and implementation. Departmental approval.

**COMP 8320/8326 RESEARCH TOPICS IN COMPUTER NETWORKS (3).** LEC. 3. Pr., COMP 6320 or COMP 6326. Current research in wireless and mobile networks, high-speed networks, active networks, WDM networks, and performance modeling. Departmental approval.

**COMP 8330 ADVANCED TOPICS IN PARALLEL AND DISTRIBUTED COMPUTING (3).** LEC. 3. Pr., COMP 6330 or COMP 6336. Parallelizing compiler, theory of concurrency, advanced parallel algorithms, load balancing, migration, performance evaluation, distributed architectures. Departmental approval

## Curriculum and Teaching (CTCH)

**COMP 8400 CURRENT TOPICS IN COMPUTER GRAPHICS (3).** LEC. 3. Pr., COMP 7400 or COMP 7406. In-depth study of current research topics in computer graphics. Topics may include theoretical, performance implementation, and system integration issues. Extensive literature survey, issue identification, performance comparison, and future research trends will be discussed. Departmental approval.

**COMP 8500 RESEARCH TOPICS IN OPERATING SYSTEMS (3).** LEC. 3. Pr., COMP 7500 or COMP 7506. Topics of current research in the area of operating systems their design, and implementation. Departmental approval.

**COMP 8600 ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE (3).** LEC. 3. Pr., COMP 6610 or COMP 6616 or COMP 7600 or COMP 7606 or COMP 7610 or COMP 7616. In-depth study of current research topics in Artificial Intelligence, e.g., reasoning mechanisms, heuristic search methods, cognitive modeling. Departmental approval.

**COMP 8620 ADVANCED TOPICS IN HUMAN-COMPUTER INTERACTION (3).** LEC. 3. Pr., COMP 7620 or COMP 7626. In-depth study of current research topics in Human-Computer Interaction, e.g., evaluation and assessment methods, multi-modal interfaces, educational technology. Departmental approval.

**COMP 8700/8706 CURRENT TOPICS IN SOFTWARE ENGINEERING (3).** LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Current theoretical and applied research issues in software engineering. Departmental approval.

**COMP 8930 DIRECTED STUDY (1-3).** IND. Course may be repeated for a maximum of 6 credit hours.

**COMP 8970 SPECIAL TOPICS (1-3).** IND. Course may be repeated with change in topic.

**COMP 8990 RESEARCH AND DISSERTATION (1-15).** DSR. Course may be repeated with a change in topic.

### Cooperative Education (COOP)

Dr. Kim M. Durbin - 844-5410

**COOP 4920 COOPERATIVE WORK EXPERIENCE (0).** PRA. A practical, professional, full-time, curriculum-related work experience in industry, business, or government. Under joint supervision of employer and university. Departmental approval.

### Curriculum and Teaching (CTCH)

Dr. Nancy Barry - 844-4434

#### CAREER AND TECHNICAL EDUCATION

Dr. Bonnie White - 844-6884

**CTCT 1200 KEYBOARDING AND FORMATTING (3).** LEC. 1, LAB. 4. Mastery of alphanumeric keyboard with basic keyboarding and formatting applications of business documents. (Students with previous keyboarding/typewriting instruction consult with Business/Marketing Education faculty for placement.)

**CTCT 2100 POWER EQUIPMENT TECHNOLOGY (3).** LEC. 2, LAB. 3. Repair and maintenance of small air-cooled engines and power equipment in Agriculture. Credit will not be given for both CTCT 2100 and CTCT 3100.

**CTCT 2200/2203 DOCUMENT PROCESSING (3).** LEC. 1, LAB. 4. Advanced formatting, processing, and evaluation of business correspondence, as well as administrative and employment documents. Includes basic computer literacy skills.

**CTCT 3000/3003 LEADERSHIP SKILLS FOR PERSONAL AND ORGANIZATIONAL DEVELOPMENT (3).** LEC. 3. Organizational and leadership skills needed to become successful professionals in work or community activities; skills and strategies for conducting efficient meetings. Departmental approval.

**CTCT 3200/3203 RECORDS MANAGEMENT (2).** LEC. 2. Integrated records management systems, records management functions, classification systems, micrographics, electronic records, and records management careers. Departmental approval.

**CTCT 3240/3243 INFORMATION PROCESSING I (3).** LEC. 2, LAB. 2. Pr., CTCT 2200 or CTCT 2203. Exploration of organizational needs for text-based information processing. Functions and capabilities of text-based information processing components. Departmental approval.

**CTCT 3250/3253 INFORMATION PROCESSING II (3).** LEC. 2, LAB. 2. Pr., CTCT 3240 or CTCT 3243. Decision-making and business problem solving using micro-computer software applications including spreadsheets, database management programs, and operating systems. Departmental approval.

**CTCT 4000/4003 CLASSROOM/LABORATORY MANAGEMENT, ORGANIZATION AND EVALUATION IN CAREER AND TECHNICAL EDUCATION (2).** LEC. 2. Pr., Admission to Teacher Education. Organization, objectives, principles, management, and evaluation of career and technical education classrooms, laboratories, and programs.

**CTCT 4030 CAREER AND TECHNICAL STUDENT ORGANIZATIONS (3).** LEC. 3. Survey of career and technical student organizations; procedures involved in developing and implementing informal and co-curricular educational programs for students and preparing students for state and national competitions.

**CTCT 4140 AGRICULTURAL STRUCTURE AND METAL FABRICATION TECHNOLOGY (3).** LEC. 2, LAB. 3. Materials selection and construction procedures for carpentry, concrete, masonry, electricity, plumbing, and metal fabrication.

**CTCT 4160 SUPERVISED AGRICULTURAL EXPERIENCE PROGRAMS (2).** LEC. 2. Responsibility for SAEP planning, supervision, and evaluation of entrepreneurship, placement, exploratory, analytical, and experimental SAEPs and record books; completing award applications.

**CTCT 4200/4203 MANAGING OFFICE SYSTEMS (3).** LEC. 2, LAB. 2. Pr., CTCT 3250 or CTCT 3253. Capstone course with emphasis on integration of information processing procedures, administrative support, and management functions. Departmental approval.

**CTCT 4900 DIRECTED STUDIES (1-6).** IND. SU. The student's learning efforts are guided toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 4910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Provides experience relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 4920 INTERNSHIP (10).** INT. SU. Pr., Admission to Teacher Education. Supervised internship experiences in a school or other appropriate setting. Evaluation and analysis of the internship experience. Admission to internship.

**CTCT 4940/4943 DIRECTED FIELD EXPERIENCE IN AREA OF SPECIALIZATION (1-3).** FLD. SU. Supervised occupational work experience in an approved specialization-related occupation. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTCT 4970 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6).** LEC. Current or special topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 5050/5053 METHODS OF TEACHING IN AREA OF SPECIALIZATION (3).** LEC. 2, LAB. 2. Pr., Admission to Teacher Education. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within career and technical education. Credit will not be allowed for both CTCT 5050/5053 and CTCT 6050/6056.

**CTCT 5060 PROGRAM PLANNING IN AREA OF SPECIALIZATION (3).** LEC. 3. Pr., CTCT 5050 or CTCT 5053. Admission to Teacher Education. Introduction to principles and practices involved in designing education programs in the area of specialization. Credit will not be given for both CTCT 5060 and CTCT 6060/6066.

**CTCT 5080/5083 COORDINATION AND SUPERVISION OF WORK-BASED LEARNING (3).** LEC. 3. Pr., Admission to Teacher Education. Coordination, placement, and supervision of students in work-experience programs; development of employability skills and habits in students.

**CTCT 6050/6056 METHODS OF TEACHING IN AREA OF SPECIALIZATION (3).** LEC. 2, LAB. 2. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within the area of specialization. Credit will not be given for both CTCT 5050/5053 and CTCT 6050/6056. Admission to alternative master's program.

**CTCT 6060/6066 PROGRAM PLANNING IN AREA OF SPECIALIZATION (3).** LEC. 3. Introduction to principles and practices involved in designing educational programs in the area of specialization. Credit will not be given for both CTCT 6060/6066 and CTCT 5060. Admission to alternative master's program.

**CTCT 6080/6086 COORDINATION AND SUPERVISION OF WORK-BASED LEARNING (3).** LEC. 3. Coordination, placement, and supervision of students in work-experience programs; development of employability skills and habits in students. Departmental approval.

**CTCT 7000/7006 FOUNDATIONS OF CAREER AND TECHNICAL EDUCATION (3).** LEC. 3. Philosophical, historical, economic, and sociological perspectives of vocational education in relation to the organization of vocational education programs.

**CTCT 7010/7016 YOUTH PROGRAM DEVELOPMENT (3).** LEC. 3. Developing, managing, and evaluating formal and informal youth education programs; training volunteers for youth development programs; securing and developing supporting resources. Departmental approval.

**CTCT 7100 TEACHING MECHANICAL TECHNOLOGY (3).** LEC. 2, LAB. 2. Theory and practice of managing agricultural mechanics laboratories, theories of machine operation, and maintaining laboratory equipment.

**CTCT 7120 COURSES OF STUDY IN AGRISCIENCE EDUCATION (3).** LEC. 3. Pr., CTCT 5060 or CTCT 6060 or CTCT 5063 or CTCT 6066. Emerging technologies in agriscience education; principles and procedures of curriculum construction applied to courses of study in agriscience education. Departmental approval.

**CTCT 7200/7206 CAREER AND OCCUPATIONAL INFORMATION (3).** LEC. 3. Trends and issues in occupational structure, job qualifications and requirements, and sources of occupational information for new and emerging occupations; analysis of career education models for students. Departmental approval.

**CTCT 7240/7246 ADMINISTRATIVE MANAGEMENT (3).** LEC. 3. Pr., CTCT 4200 or CTCT 4203. Management of office systems, information and personnel. Managing and controlling administrative services. Departmental approval.

## Curriculum and Teaching (CTCH)

**CTCT 7300/7306 LEARNING RESOURCES IN AREA OF SPECIALIZATION (3).** LEC. 3. Pr., CTCT 5050 or CTCT 6050 or CTCT 5053 or CTCT 6056. Selecting, developing, utilizing, and evaluating instructional resources and technology for teaching. Departmental approval.

**CTCT 7710/7716 ADVANCED TEACHING METHODS (3).** LEC. 3. Pr., (CTCT 5050 or CTCT 5053) or (CTCT 6050 or CTCT 6056). Analysis of research in theories of teaching and learning, effective teacher characteristics, learning styles, teaching methodologies, and diversity in teaching. Departmental approval.

**CTCT 7720/7726 ADVANCED PROGRAM PLANNING IN AREA OF SPECIALIZATION (3).** LEC. 3. Pr., CTCT 5060 or CTCT 6060 or CTCT 5063 or CTCT 6066. Issues affecting the development and management of educational programs; strategies for improving educational programs. Departmental approval.

**CTCT 7730/7736 PROGRAM EVALUATION (3).** LEC. 3. Pr., (CTCT 7720 or CTCT 7726). Principles and procedures used in evaluating academic- related programs. Alternative approaches to evaluation and practical guidelines for conducting evaluations. Departmental approval.

**CTCT 7750/7756 ADMINISTRATION OF CAREER AND TECHNICAL EDUCATION (3).** LEC. 2, LAB. 2. Introduction to concepts, theories and practices related to administration, organizational behavior, and leadership in secondary and post-secondary vocational education programs. Departmental approval.

**CTCT 7760/7766 COMPREHENSIVE PLANNING IN CAREER AND TECHNICAL EDUCATION (3).** LEC. 2, LAB. 2. Pr., (CTCT 7750 or CTCT 7756). Processes of comprehensive planning for vocational education programs at high school and secondary school levels using local, state, and regional data. Departmental approval.

**CTCT 7770/7776 CLINICAL SUPERVISION (3).** LEC. 3. Pr., (CTCT 7710 or CTCT 7716). Theories, concepts, models, and techniques of student teacher and beginning teacher supervision by administrators, school district personnel, and university supervisors. Recommended for individuals who supervise or plan to supervise student teachers. Departmental approval.

**CTCT 7780/7786 RESEARCH IN CAREER AND TECHNICAL EDUCATION (3).** LEC. 3. Review, analysis and interpretation of research procedures and data with emphasis on designing new research in vocational and adult education. Departmental approval.

**CTCT 7810 SUPERVISED COLLEGE TEACHING (1).** LEC. 1. SU. Practical experience in the classroom under the supervision of a faculty mentor. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

**CTCT 7900/7906 DIRECTED STUDIES (1-3).** IND. SU. Independent learning effort directed toward desired objectives. Includes evaluation at regular intervals by student and professor. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTCT 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-3).** PRA. SU. Experiences closely relating theory and practice. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTCT 7920/7926 INTERNSHIP (1-10).** INT. SU. Pr., CTCT 6050 or CTCT 6056. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**CTCT 7950/7956 SEMINAR IN AREA OF SPECIALIZATION (1-3).** SEM. SU. Presentation by graduate students of research projects and/or findings. Analysis of procedures and findings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTCT 7960/7966 SPECIAL PROBLEMS (1-3).** IND. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTCT 7970/7976 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6).** LEC. Current or advanced topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 7990 RESEARCH AND THESIS (1-10).** MST. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**CTCT 8730/8736 CURRICULUM DEVELOPMENT IN CAREER AND TECHNICAL EDUCATION (3).** LEC. 3. Pr., CTCT 7730 or CTCT 7736. Principles of career and technical education curriculum planning, identification of educational needs of students, selecting technical content, and evaluating materials. May count either CTCT 8730 or CTCT 8736.

**CTCT 8770/8776 SUPERVISION OF INSTRUCTION (3).** LEC. 3. Pr., CTCT 7770 or CTCT 7776. Theories and models to become effective supervisors of vocational and adult education programs; philosophies and styles of supervision used to improve schools, instruction, curriculum and personnel. Departmental approval.

**CTCT 8800/8806 TEACHER EDUCATION (3).** LEC. 3. Emphasis on beliefs, philosophy, issues, research, roles, student selection, curriculum, methodology, internships, organization, and administration of teacher education programs. Departmental approval.

**CTCT 8810 SUPERVISED COLLEGE TEACHING (1-10).** LEC. 3. Practical experience in the classroom under the supervision of a faculty mentor. Course may be repeated for a maximum of 10 credit hours.

**CTCT 8900 DIRECTED STUDIES (1-6).** IND. SU. Independent learning efforts at desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 8910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Experiences closely relating theory and practice. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 8920 INTERNSHIP (1-10).** INT. SU. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**CTCT 8950 SEMINAR IN AREA OF SPECIALIZATION (1-6).** SEM. SU. Selected concepts and theoretical formulations of common interest. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 8960 SPECIAL PROBLEMS (1-6).** IND. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 8970 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6).** LEC. Current or advanced topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTCT 8980/8986 FIELD PROJECT (1-10).** FLD. 1. SU. Field project. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**CTCT 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Departmental approval. Course may be repeated for a maximum of 20 credit hours.

## EARLY CHILDHOOD EDUCATION (CTEC)

Dr. Edna Brabham 844-6793

**CTEC 3020 PRIMARY MATH AND SCIENCE (3).** LEC. 3. Pr., Admission to Teacher Education. Exploration of learning and pedagogy for the development of math and science concepts appropriate for children in Kindergarten through Grade 3.

**CTEC 3030 INTUITIVE THOUGHT AND SYMBOLIC FUNCTION (3).** LEC. 3. Pr., Admission to Teacher Education. Coreq., CTEC 4911. Young children's intuitive thought for pre-service teachers.

**CTEC 3150 LANGUAGE DEVELOPMENT: IMPLICATIONS FOR THE CHILDHOOD EDUCATOR (3).** LEC. 3. Applications of language development theories to teaching children. Emphasis on the effects theories have on curriculum and teaching.

**CTEC 3200 A WORKING THEORY FOR THE CONSTRUCTIVIST EDUCATOR (3).** LEC. 3. Pr., Admission to Teacher Education. Constructivist theory for pre-service teachers preparing to teach at the early childhood level.

**CTEC 4200 THE CONSTRUCTIVIST TEACHER: STRATEGIES AND TECHNIQUES (3).** LEC. 3. Pr., CTEC 3200 Admission to Teacher Education. Construction of an operational knowledge of established constructive curriculum strategies and techniques.

**CTEC 4210 THE CONSTRUCTIVIST TEACHER: GROWING PROFESSIONALLY (3).** LEC. 3. Pr., CTEC 4200. Admission to Teacher Education. Coreq., CTEC 4920. The roles and responsibilities of being an early childhood professional.

**CTEC 4900 DIRECTED STUDIES (1-6).** IND. SU. Reading, research or other work undertaken independently by a student focused on a content area of special interest. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEC 4910 PRACTICUM (1-6).** PRA. SU. Students and faculty cooperatively select and execute an appropriate field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEC 4911 PRACTICUM IN THE PRESCHOOL (3).** PRA. SU. Pr., CTEC 3200. Admission to Teacher Education. Laboratory experiences with children from birth to five years of age designed to help students relate theory to practice.

**CTEC 4912 PRACTICUM IN PRIMARY GRADES (3).** PRA. SU. Pr., CTEC 3200. Admission to Teacher Education. Coreq., CTEC 4200. Laboratory experiences with children 5 through 9 years of age help students relate theory to practice.

**CTEC 4920 INTERNSHIP (10).** AAB/INT. SU. Pr., Admission to Teacher Education. Experience in a setting serving pre-primary or primary- school children with varying abilities. Admission to internship.

**CTEC 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTEC 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Student thesis is finalized in this course. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTEC 7200 EARLY CHILDHOOD EDUCATION PERSPECTIVE (3).** LEC. 3. Historical overview of current issues, trends, and programs in early childhood education.

## Curriculum and Teaching (CTCH)

**CTEC 7210 ORIGINS OF THOUGHT (3).** LEC. 3. Piaget's theories of how thought develops in young children. Comparison of the social and biological roots of thought.

**CTEC 7260 PLAY AND EARLY CHILDHOOD EDUCATION (3).** LEC. 3. Examination of children's play from a constructivist theoretical perspective and translation of theory into early childhood educational practice.

**CTEC 7270 THEORY-BASED PROBLEMS IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. In-depth exploration of a problem related to the thought, writing and research that form the theoretical foundations of constructivist approaches in early childhood education. Course may be repeated for a maximum of 9 credit hours.

**CTEC 7510 RESEARCH STUDIES IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. How to read, review, analyze and interpret significant research studies in early childhood education.

**CTEC 7520 CURRICULUM AND TEACHING IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. Reappraisal of experiences and content for children by focusing on the nature of the learner and the nature of the knowledge to be learned.

**CTEC 7530 ORGANIZATION OF PROGRAM IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. Organization, administration, and supervision of early childhood programs.

**CTEC 7540 EVALUATION OF PROGRAMS IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. Assessment and evaluation of all program components from a constructivist perspective.

**CTEC 7900 DIRECTED STUDIES (1-6).** IND. SU. Independent learning objectives related to the student's area of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEC 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEC 7920 INTERNSHIP (1-9).** INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CTEC 7970 SPECIAL TOPICS (3-9).** LEC. Cooperative pursuit of selected concepts and theories, normally in small groups. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CTEC 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with a change in topic.

**CTEC 8240 RESEARCH IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. Review, analysis and interpretation of available research with emphasis on designing new research to meet the needs of young children. Master's degree.

**CTEC 8270 THEORY-BASED PROBLEMS IN EARLY CHILDHOOD EDUCATION (3).** LEC. 3. In-depth exploration of problems related to the thought, writings, and research that form the theoretical foundations of constructivist approaches to early childhood education. Master's degree. Course may be repeated for a maximum of 6 credit hours.

**CTEC 8720 DESIGNING EARLY CHILDHOOD CURRICULUM (3).** LEC. 3. Application of early childhood history, philosophy, program analysis and constructivist theory to the design of early childhood curriculum. Master's Degree.

**CTEC 8850 CONSTRUCTIVIST INVESTIGATIONS IN EARLY CHILDHOOD SETTINGS (3).** LEC. 3. Analysis and interpretation of the design of constructivist investigation. Master's degree.

**CTEC 8950 ALTERNATIVE RESIDENCE SEMINAR (2-4).** SEM. 2. SU. Must complete this two semester sequence during the fall and spring semesters. Credit does not count toward minimum requirements for the doctoral program. Enrollment in Alternative Residence Program.

**CTEC 8970 SPECIAL TOPICS (3-9).** LEC. Cooperative pursuit of selected concepts and theories, normally in small groups. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CTEC 8980 FIELD PROJECT (1-3).** FLD. SU. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTEC 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with a change in topic.

### ELEMENTARY EDUCATION (CTEE)

Dr. Theresa McCormick - 844-6795

**CTEE 3100 INTRODUCTION TO ELEMENTARY EDUCATION (3).** LEC. 3. Pr., Admission to Teacher Education. Knowledge, skills, and dispositions necessary for elementary education, with emphasis on professional expectations and school structure.

**CTEE 4010 CURRICULUM: SOCIAL SCIENCE (3).** LEC. 2, LAB. 3. Pr., Admission to Teacher Education. Exploration and pedagogy for age-appropriate instruction of children in kindergarten through grade six in order to develop rational and participatory citizens.

**CTEE 4020 CURRICULUM: LANGUAGE ARTS (3).** LEC. 2, LAB. 3. Pr., Admission to Teacher Education. Content and methodology of teaching language arts (reading, writing, listening, speaking, and viewing) in kindergarten through grade six in order to develop communicative competence.

**CTEE 4030 CURRICULUM: NATURAL SCIENCE (3).** LEC. 2, LAB. 3. Pr., Admission to Teacher Education. Coreq., CTEE 4040. Current trends, practices and methods in teaching science in the elementary school.

**CTEE 4040 CURRICULUM: MATHEMATICS (3).** LEC. 2, LAB. 3. Pr., Admission to Teacher Education. Coreq., CTEE 4030. Principles, current thinking and approaches to the teaching of elementary school mathematics.

**CTEE 4190 EFFECTIVE CLASSROOM MANAGEMENT IN THE ELEMENTARY SCHOOL (3).** LEC. 2, LAB. 2. Pr., Admission to Teacher Education. Through exploration, discussion, reflection, and analysis students will study issues pertaining to inclusive/multicultural K-6 classrooms. Issues related to classroom management (e.g. behavior and time management), students with special needs, parent/community relations, legal mandates, technology, planning, and professionalism.

**CTEE 4900 DIRECTED STUDIES (1-6).** IND. SU. Reading, research, or other work undertaken by a student focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEE 4910 PRACTICUM (1-6).** AAB/PRA. SU. Students and faculty cooperatively select an appropriate field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEE 4920 INTERNSHIP (10).** AAB/INT. 10. SU. Pr., Admission to Teacher Education. Supervised teaching in a public elementary school accompanied by scheduled discussions to analyze and evaluate the intern's experience. Admission to internship.

**CTEE 4950 PROFESSIONAL DEVELOPMENT SEMINAR (1-4).** AAB/SEM. 1. SU. Pr., Admission to Teacher Education. Reflection, exploration, and study of elementary education practices in kindergarten through grade six. Course may be repeated for a maximum of 4 credit hours.

**CTEE 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTEE 4970 SPECIAL TOPICS (1-6).** AAB/LEC. Cooperatively selected concepts and theories pursued, normally in small groups. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEE 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. The student thesis is finalized in this course. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTEE 7010 APPROACHES TO TEACHING (3).** LEC. 3. Organizational patterns, planning and approaches to instruction in the elementary school.

**CTEE 7410 CURRICULUM AND TEACHING IN SOCIAL SCIENCE (GRADES K-6) (3).** LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) social science education.

**CTEE 7420 CURRICULUM AND TEACHING IN LANGUAGE ARTS (GRADES K-6) (3).** LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) language arts education.

**CTEE 7430 CURRICULUM AND TEACHING IN NATURAL SCIENCE (GRADES K-6) (3).** LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) natural science education.

**CTEE 7440 CURRICULUM AND TEACHING IN MATHEMATICS (GRADES K-6) (3).** LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) mathematics education.

**CTEE 7490 THE ELEMENTARY SCHOOL PROGRAM (3).** LEC. 3. Major curriculum areas and teaching practices in the modern elementary school. Implications of research and theory for the total elementary school program.

**CTEE 7510 RESEARCH STUDIES IN EDUCATION IN AREAS OF SPECIALIZATION (3).** LEC. 3. A review, analysis and interpretation of data with emphasis on designing research to meet the changing needs of the school.

**CTEE 7530 ORGANIZATION OF PROGRAMS IN ELEMENTARY EDUCATION (3).** LEC. 3. Organization and development of basic and supplementary materials for guiding teachers and school systems in improvement of curriculum and teaching practices.

**CTEE 7540 EVALUATION OF PROGRAMS IN AREAS OF SPECIALIZATION (3).** LEC. 3. Evaluation methods and exploration of evaluation literature in areas of specialization.

**CTEE 7900 DIRECTED STUDIES (1-6).** IND. SU. Independent study related to student's respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEE 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** AAB/PRA. SU. Provides individual students with experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

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**CTEE 7920 INTERNSHIP (1-9).** INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CTEE 7970 SPECIAL TOPICS (1-6).** AAB. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEE 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated for a maximum of 10 credit hours.

**CTEE 8950 ALTERNATIVE RESIDENCE SEMINAR (2).** LEC. 2. SU. Students must complete this two semester sequence during the fall and spring semesters. Credit does not count toward minimum requirements for the doctoral program. Enrollment in Alternative Residence Program.

**CTEE 8970 SPECIAL TOPICS (1-6).** LEC. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTEE 8980 FIELD PROJECT (1-10).** FLD. SU. Course may be repeated for a maximum of 10 credit hours.

**CTEE 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated for a maximum of 20 credit hours.

### ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (CTES)

Dr. Robert Leier - 844-6882

**CTES 5410 LANGUAGE MINORITY STUDENTS K-12 (3).** LEC. 3. Non-major course to prepare elementary and secondary teachers to work effectively with English language learners (ELLs). Topics include instructional models for teaching ELLs.

**CTES 6410 LANGUAGE MINORITY STUDENTS K-12 (3).** LEC. 3. Non-major course to prepare elementary and secondary teachers to work effectively with English language learners (ELLs). Topics include instructional models for teaching ELLs.

**CTES 7400 TECHNOLOGY AND MEDIA IN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES EDUCATION (ESOL) (3).** LEC. 3. Application of instructional technology in second language instruction, authentic materials in the ESL classroom.

**CTES 7420/7426 APPLIED LINGUISTICS IN SECOND LANGUAGE ACQUISITION (3).** LEC. 3. Provides basic knowledge of phonetics, morphology, syntax, semantics, pragmatics, psycholinguistics, sociolinguistics and language variation to teach English language learners. Credit will not be given for both CTES 7420 and CTES 7426.

**CTES 7460/7466 TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES IN P-12 (3).** LEC. 3. Teaching practices and curriculum selection in P-12 ESOL. Credit will not be given for both CTES 7460 and CTES 7466.

**CTES 7470/7476 ISSUES IN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES EDUCATION (ESOL) (3).** LEC. 3. Examination of central issues in the teaching and learning of ESOL including language policy, language diversity and multiculturalism. Credit will not be given for both CTES 7470 and CTES 7476.

**CTES 7480/7486 ASSESSMENT IN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL) (3).** LEC. 3. Theoretical perspectives on assessment of English Language Learners. Developing, administering and analyzing assessment instruments. Credit will not be given for both CTES 7480 and CTES 7486.

**CTES 7920 INTERNSHIP (3-9).** AAB/INT. SU. Supervised teaching in a K-12 public school accompanied by scheduled discussions to analyze and evaluate the intern's experience.

### MIDDLE SCHOOL EDUCATION (CTMD)

Dr. Nancy Barry - 844-4434

**CTMD 4010 TEACHING MATHEMATICS: MIDDLE SCHOOL (4).** LEC. 2, LAB. 4. Pr., Admission to Teacher Education. Specific teaching strategies for a comprehensive middle school program grades 4-8.

**CTMD 4190 CURRICULUM AND TEACHING IN THE MIDDLE SCHOOL (3).** LEC. 2, LAB. 2. Pr., Admission to Teacher Education. To introduce and prepare undergraduate education students for the middle school student, middle school teaching, and middle level philosophy while incorporating reflective decision making.

**CTMD 4900 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed at desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMD 4910 PRACTICUM IN MIDDLE SCHOOL EDUCATION (1-6).** PRA. SU. Provides experience relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMD 4920 INTERNSHIP (10).** INT. 10. SU. Supervised teaching in a public middle or secondary school, accompanied by scheduled discussions to analyze and evaluate the intern's experience. Admission to Internship.

**CTMD 4970 SPECIAL TOPICS (1-4).** LEC. Course may be repeated for a maximum of 4 credit hours.

**CTMD 7900 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed toward desired objectives related to the respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMD 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMD 7970 SPECIAL TOPICS (1-6).** LEC. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

### MUSIC EDUCATION (CTMU)

Dr. Kimberly Walls - 844-6892

**CTMU 3040 MUSIC AND RELATED ARTS (4).** LEC. 2, LAB. 4. Pr., Admission to Teacher Education. Interdisciplinary instruction appropriate for students' developmental characteristics which synthesize the content, professional resources, curriculum goals and instructional strategies of music.

**CTMU 4900 DIRECTED STUDIES (1-6).** IND. SU. Independent reading, research or other work focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMU 4910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Pr., Admission to Teacher Education. Cooperatively selected field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMU 4920 INTERNSHIP (10).** AAB/INT. 10. SU. Pr., P/C, CTSE 4200 or P/C, CTSE 4203. Admission to Teacher Education. Supervised on-the-job experience in a school, college or other appropriate setting, accompanied by regularly scheduled discussions with supervising faculty provide evaluation and analysis of the intern experience.

**CTMU 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTMU 4970 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6).** LEC. Cooperatively selected concepts and theories pursued, normally in small groups. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMU 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. The student's thesis is finalized in this course. Course may be repeated for a maximum of 3 credit hours.

**CTMU 5940 ELEMENTARY/MIDDLE SCHOOL MUSIC METHODS (3).** LEC. 3. Pr., Admission to Teacher Education. Methodology, materials, organization and activities for elementary and middle school music programs. Includes professional field experiences in public school music programs.

**CTMU 5960 SECONDARY MUSIC METHODS (3).** LEC. 3. Pr., Admission to Teacher Education. Methodology, materials, organization and activities for secondary music programs. Includes professional field experiences in public school music programs.

**CTMU 6940 ELEMENTARY/MIDDLE SCHOOL MUSIC METHODS (3).** LEC. 3. Methodology, materials, organization and activities for elementary and middle school music programs. Includes professional field experiences in public school music programs. Admission to Alternative Master's Certification Program.

**CTMU 6960 SECONDARY MUSIC METHODS (3).** LEC. 3. Methodology, materials, organization and activities for secondary music programs. Includes professional field experiences in public school music programs. Admission to Alternative Master's Certification Program

**CTMU 7510/7516 RESEARCH STUDIES IN MUSIC EDUCATION (3).** RES. 3. Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of school musicians.

**CTMU 7520/7526 CURRICULUM AND TEACHING IN MUSIC EDUCATION (3).** LEC. 3. Teaching practices and evaluation of experiences and content for curriculum improvements. Students develop recommendations for music curriculum.

**CTMU 7530/7536 ORGANIZATION OF PROGRAM IN MUSIC EDUCATION (3).** LEC. 3. Program, organization and development of basic and supplementary materials for guiding teachers, facilities and school systems in continuous improvement of curriculum and teaching practices in music education.

**CTMU 7540/7546 EVALUATION OF PROGRAM IN MUSIC EDUCATION (3).** LEC. 3. Evaluation and investigation of teaching effectiveness including the utilization of human and material resources and the coordination of areas of specialization and issues in evaluation which are unique to music education settings.

**CTMU 7550/7556 APPLICATIONS OF TECHNOLOGY IN MUSIC EDUCATION (3).** LEC. 3. An overview of applications of current technology in music classroom, studios, and offices.

**CTMU 7560/7566 DIGITAL MEDIA PRODUCTION FOR MUSIC EDUCATION (3).** LEC. 3. Current tools, skills, and concepts for creating aural and visual interactive applications.

**CTMU 7570 MUSIC INSTRUCTION MULTIMEDIA RESEARCH AND DEVELOPMENT (3).** LEC. 3. Pr., CTMU 7550 or CTMU 7556. Current research

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music instructional technology, design of interactive applications. Departmental approval.

**CTMU 7900/7906 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed toward desired objectives related to student's respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMU 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTMU 7920/7926 INTERNSHIP (1-10).** INT. SU. Pr., P/C, CTSE 4200 or P/C, CTSE 4203. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**CTMU 7970/7976 SPECIAL TOPICS (1-9).** LEC. Provides an opportunity for graduate students and professors to pursue cooperatively selected topics. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CTMU 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**CTMU 8950 ALTERNATIVE RESIDENCE SEMINAR (2).** SEM. 2. SU. Students must complete this two semester sequence during the fall and spring semesters. Credit does not count toward minimum requirements for the doctoral program. Enrollment in Alternative Residence Program.

**CTMU 8980/8986 FIELD PROJECT (1-3).** FLD. SU. Course may be repeated for a maximum of 3 credit hours.

**CTMU 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

### READING EDUCATION (CTRD)

Dr. Bruce Murray - 844-6934

**CTRD 1000 CRITICAL READING (2).** LEC. 2. Strategies for reading expository text, with emphasis on vocabulary learning and text structures, toward goal of critical evaluation of evidence for authors' main-idea claims.

**CTRD 3700 FUNDAMENTALS OF LANGUAGE AND LITERACY INSTRUCTION I (3).** LEC. 2, LAB. 2. Pr., Admission to Teacher Education. Theoretical foundations of language and literacy development of children and implications for teaching. Clinical experiences with children.

**CTRD 3710 FUNDAMENTALS OF LANGUAGE AND LITERACY INSTRUCTION II (3).** LEC. 2, LAB. 2. Pr., CTRD 3700. Admission to Teacher Education. Research-based theory and teaching strategies to meet the language and literacy needs of all children, especially those at risk of reading difficulties. Includes laboratory teaching experience.

**CTRD 4900 DIRECTED STUDIES (1-6).** IND. SU. Independent reading, research, or other work focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTRD 5030 THE READING OF ADOLESCENTS (3).** LEC. 3. Reading patterns of adolescents and uses of young adult literature in reading and English language arts programs, grades 6-12.

**CTRD 5700 DEVELOPMENTAL READING K-12 (3).** LEC. 3. Pr., Admission to Teacher Education. Theoretical and research foundations for a balanced approach to reading assessment and instruction, K-12.

**CTRD 5710 LITERACY AND INQUIRY IN THE CONTENT AREAS: GRADES 6-12 (3).** LEC. 3. Pr., Admission to Teacher Education. Strategies to enhance literacy and inquiry for student's content-area learning in the middle and secondary school.

**CTRD 6030 THE READING OF ADOLESCENTS (3).** LEC. 3. Reading patterns of adolescents and uses of young adult literature in reading and English language arts programs, grades 6-12.

**CTRD 6700/6706 DEVELOPMENTAL READING K-12 (3).** LEC. 3. Theoretical and research foundations for a balanced approach to reading assessment and instruction, K-12. Admission to Alternative Master's Certification Program.

**CTRD 6710/6716 LITERACY AND INQUIRY IN THE CONTENT AREAS: GRADES 6-12 (3).** LEC. 3. Strategies to enhance literacy and inquiry for student's content-area learning in the middle and secondary school.

**CTRD 7400 ASSESSMENT AND INSTRUCTION FOR READING INTERVENTION (3).** LEC. 3. Research-based analysis of causal factors in reading difficulties, assessment strategies, and effective teaching with delayed readers. Includes practicum.

**CTRD 7510 RESEARCH STUDIES IN READING EDUCATION (3).** RES. 3. Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.

**CTRD 7520 CURRICULUM AND TEACHING IN READING EDUCATION (3).** LEC. 3. Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.

**CTRD 7530 ORGANIZATION OF PROGRAM IN READING EDUCATION (3).** LEC. 3. Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.

**CTRD 7540 EVALUATION OF PROGRAM IN READING EDUCATION (3).** LEC. 3. Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

**CTRD 7900 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed toward desired objectives related to respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTRD 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTRD 7920 INTERNSHIP (1-9).** INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**CTRD 7970/7976 SPECIAL TOPICS (1-6).** LEC. Provides an opportunity for graduate students and professors to pursue cooperatively selected topics. Departmental approval.

**CTRD 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**CTRD 8950 ALTERNATIVE RESIDENCE SEMINAR (2).** SEM. 2. SU. Required of students in an alternative residence plan. These students must complete this two semester sequence during the fall and spring semesters. Credit does not count toward minimum requirements for the doctoral program. Enrolled in Alternative Residence Program.

**CTRD 8980 FIELD PROJECT (1-10).** FLD. SU. Course may be repeated for a maximum of 10 credit hours.

**CTRD 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

### SECONDARY EDUCATION (CTSE)

Dr. Nancy Barry - 844-4434

**CTSE 1020 DEVELOPMENTAL STUDIES: MATHEMATICS (2).** LEC. 1, LAB. 2. Develops mathematics skills conducive to successful college study. Credit counted toward enrollment, but not graduation. Departmental approval.

**CTSE 1030 DEVELOPMENTAL STUDIES: ENGLISH LANGUAGE ARTS (2).** LEC. 1, LAB. 2. SU. Develops reading/study and composition skills conducive to successful college study. Credit not counted toward graduation. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

**CTSE 4000 TECHNOLOGY IN SCIENCE EDUCATION (2).** LEC. 2. Introduction and application of current and emerging instructional and communication technologies for integration in the secondary science program.

**CTSE 4030 CURRICULUM AND TEACHING I: MATHEMATICS (4).** LEC. 2, LAB. 4. Pr., Admission to Teacher Education. Strategies for teaching and evaluating high school mathematics.

**CTSE 4050 CURRICULUM AND TEACHING I: SOCIAL SCIENCE (4).** LEC. 2, LAB. 4. Pr., CTSE 4210/CTSE 4210. Admission to Teacher Education. Application of current educational research and instructional strategies to the design of meaningful social studies instruction and assessment.

**CTSE 4060 CURRICULUM AND TEACHING II: SOCIAL SCIENCE (4).** LEC. 2, LAB. 4. Pr., CTSE 4050 and CTSE 4210. Admission to Teacher Education. Curriculum decision making and planning for instruction, evaluation, and classroom management.

**CTSE 4070/4073 CURRICULUM AND TEACHING I: FOREIGN LANGUAGE (4).** LEC. 2, LAB. 4. Pr., Admission to Teacher Education. Strategies for teaching foreign language students with a special emphasis on developing good instruction for comprehensible input and emerging speech tasks.

**CTSE 4080/4083 CURRICULUM AND TEACHING II: FOREIGN LANGUAGE (4).** LEC. 2, LAB. 4. Pr., CTSE 4070 or CTSE 4073. Admission to Teacher Education. Teaching strategies based on language acquisition theories that are appropriate for teaching foreign language students.

**CTSE 4090 CURRICULUM AND TEACHING I: SCIENCE (4).** LEC. 2, LAB. 4. Pr., Admission to Teacher Education. Planning, teaching strategies, evaluation techniques and classroom management procedures needed to be a successful science teacher.

**CTSE 4100 CURRICULUM AND TEACHING II: SCIENCE (4).** LEC. 2, LAB. 4. Pr., CTSE 4090. Admission to Teacher Education. Higher-order reasoning and process skills using state and national standards as guides. Theoretical and applied approaches.

**CTSE 4150 CURRICULUM AND TEACHING I: ENGLISH LANGUAGE ARTS (4).** LEC. 2, LAB. 4. Pr., CTSE 5010 and CTSE 5020, CTSE 5010. Admission to Teacher



## Economics (ECON)

Education. Teaching the expressive English language arts, writing and speaking, in middle and high school classrooms.

**CTSE 4160 CURRICULUM AND TEACHING II: ENGLISH LANGUAGE ARTS (4).** LEC. 2, LAB. 4. Pr., CTRD 5030 and CTRD 5710. Admission to Teacher Education. Teaching the receptive English language arts; reading, listening, and viewing; in middle and high school classrooms.

**CTSE 4200/4203 MANAGING MIDDLE AND HIGH SCHOOL CLASSROOMS (2).** LEC. 2. Pr., P/C, CTSE 7920 or P/C, CTSE 7926 or P/C, CTMU 7920 or P/C, CTMU 7926 or P/C, CTMU 4920 or P/C, CTSE 4920. Admission to Teacher Education. The role of the teacher in classroom management. Methods for developing a positive learning environment.

**CTSE 4210 SOCIAL SCIENCE CONCEPTS AND METHODS (3).** LEC. 3. For pre-service teachers. Organizing social science disciplinary knowledge into an integrated framework that is meaningful, useful, and relevant to high school students. 15 hours in social sciences (2000 level or above).

**CTSE 4900 DIRECTED STUDIES (1-6).** IND. SU. Independent reading, research, or other work focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTSE 4910 PRACTICUM (1-6).** PRA. SU. Pr., Admission to Teacher Education. Cooperatively selected field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTSE 4920 INTERNSHIP (10).** AAB/INT. 10. SU. Coreq., CTSE 4200 or CTSE 4203. Admission to Teacher Education. Supervised teaching in a public secondary school, accompanied by scheduled discussions to analyze and evaluate the intern's experience. Admission to internship.

**CTSE 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. SU. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTSE 4970 SPECIAL TOPICS (1-4).** LEC. Cooperatively selected concepts and theories pursued, normally in small groups. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

**CTSE 4997 HONORS THESIS (1-3).** IND. SU. Pr., Honors College. The student thesis is finalized in this course. Course may be repeated for a maximum of 3 credit hours.

**CTSE 5010 LANGUAGE STUDY FOR TEACHERS (3).** LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. Departmental approval.

**CTSE 5020 RHETORIC AND COMPOSITION FOR TEACHERS (3).** LEC. 3. Theories of rhetoric and composition applicable to middle and high school classrooms; implications for planning writing curricula, instruction, and assessment/evaluation.

**CTSE 5040 TECHNOLOGY AND APPLICATIONS IN SECONDARY MATHEMATICS EDUCATION (4).** LEC. 2, LAB. 4. Pr., MATH 2660. Admission to Teacher Education. Use of technological tools to enhance mathematics teaching and learning. Credit will not be given for both CTSE5040 and CTSE 6040.

**CTSE 5710 LANGUAGE STUDY FOR TEACHERS (3).** LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. Departmental approval.

**CTSE 6010 LANGUAGE STUDY FOR TEACHERS (3).** LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. Departmental approval.

**CTSE 6020 RHETORIC AND COMPOSITION FOR TEACHERS (3).** LEC. 3. Theories of rhetoric and composition applicable to middle and high school classrooms; implications for planning writing curricula, instruction, and assessment/evaluation.

**CTSE 6040 TECHNOLOGY AND APPLICATIONS IN SECONDARY MATHEMATICS EDUCATION (4).** LEC. 2, LAB. 4. Use of technological tools to enhance mathematics teaching and learning. Credit will not be given for both CTSE 5040 and CTSE 6040.

**CTSE 6710 LANGUAGE STUDY FOR TEACHERS (3).** LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics.

**CTSE 7090 INQUIRY METHODS OF SCIENCE TEACHING (4).** LEC. 4. Study and practice of various inquiry based methods for teaching science as new teachers, including demonstration, laboratory, and inquiry projects. Departmental approval.

**CTSE 7490 THE SECONDARY SCHOOL PROGRAM (3).** LEC. 3. Implications of research and theory for the total secondary school program. Departmental approval.

**CTSE 7510 RESEARCH STUDIES IN AREA OF SPECIALIZATION (3).** LEC. 3. Research methodology, landmark studies, critique and application of research in the area of specialization.

**CTSE 7520/7526 CURRICULUM AND TEACHING IN AREA OF SPECIALIZATION (3).** LEC. 3. In-depth study of the theory and instructional practices that the foreign language profession would like to see as organizing principles for the study of culture through language. Use of the tools of ethnography to study cultural perspectives in the native and target cultures. Credit will not be given for both CTSE 7520 and CTSE 7526.

**CTSE 7530/7536 ORGANIZATION OF PROGRAM IN AREA OF SPECIALIZATION (3).** LEC. 3. Program models, components, and standards in the area of specialization. Credit will not be given for both CTSE 7530 and CTSE 7536.

**CTSE 7540/7546 EVALUATION OF PROGRAM IN AREA OF SPECIALIZATION (3).** LEC. 3. Theoretical perspectives of evaluation and methods of evaluating learners, teachers, and curricula. Credit will not be given for both CTSE 7540 and CTSE 7546.

**CTSE 7900/7906 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed toward desired objectives related to their respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTSE 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-6).** AAB/PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTSE 7920/7926 INTERNSHIP (10).** AAB/INT. 10. SU. Pr., P/C, CTSE 4200 or P/C, CTSE 4203. Supervised teaching in a public secondary school, accompanied by scheduled discussions to analyze and evaluate the intern's experience. Course may be repeated for a maximum of 10 credit hours. Departmental approval.

**CTSE 7970 SPECIAL TOPICS (1-6).** LEC. Provides an opportunity for the graduate student and professor to pursue selected topics in depth. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**CTSE 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**CTSE 8950 ALTERNATIVE RESIDENCE SEMINAR (2).** SEM. SU. Required of students in alternative residence plan. These students must complete this two semester sequence during the fall and spring semesters. Credit does not count toward minimum requirements for the doctoral program. Enrolled in Alternative Residence Program.

**CTSE 8980/8986 FIELD PROJECT (1-3).** FLD. SU. Students review literature pertaining to a problem they have identified in their own practice, form hypotheses, plan intervention, collect data, analyze and interpret results, write summary of the project following approved guidelines, and orally defend the results of their project. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**CTSE 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

## Economics (ECON)

Economics Department - 844-2901

**ECON 2020 PRINCIPLES OF MICROECONOMICS (3).** LEC. 3. Social Science II Core. Economic principles emphasizing scarcity/choice, consumer behavior, supply/demand, markets, production/cost, globalization of markets, role of government market/government failure.

**ECON 2027 HONORS PRINCIPLES OF MICROECONOMICS (3).** LEC. 3. Pr., Honors College. Social Science II Core. Economic principles emphasizing scarcity/choice, consumer behavior, supply/demand, markets, production/cost, globalization of markets, role of government, market government failure.

**ECON 2030 PRINCIPLES OF MACROECONOMICS (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Economic principles emphasizing economic aggregates, including: measuring economic performance, macroeconomic theory, inflation and unemployment, money and banking and fiscal and monetary policy.

**ECON 2037 HONORS PRINCIPLES OF MACROECONOMICS (3).** LEC. 3. Pr., Honors College. ECON 2027 Economic principles emphasizing economic aggregates, including: measuring economic performance, macroeconomic theory, inflation and unemployment, money and banking and fiscal and monetary policy.

**ECON 3020 INTERMEDIATE MICROECONOMICS (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Theory of pricing under varying market conditions and distribution of income among the factors of production.

**ECON 3030 INTERMEDIATE MACROECONOMICS (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. A study of national economic aggregates and the market determination of output, employment, and inflation. An introduction to economic monetary and fiscal policy on the economy.

**ECON 3100 LAW AND ECONOMICS (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Description of the many substantive areas in which law has an economics foundation and an analysis of how law affects economic relations.

## Economics (ECON)

**ECON 3200 MONEY AND BANKING (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Theoretical and institutional analysis of monetary systems, foreign exchange and commercial banking.

**ECON 3300 ECONOMICS OF SPORTS (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Economic analysis of professional and collegiate sports, including the structure of competition and performance in individual and team sports.

**ECON 3400 FORENSIC ECONOMICS (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Application of economic analysis to matters of litigation, especially the calculation of economic damages, or economic loss.

**ECON 3500 COMPARATIVE ECONOMIC SYSTEMS (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Analysis of alternative government approaches to solving basic economic problems.

**ECON 3600 MATHEMATICAL METHODS FOR ECONOMISTS (3).** LEC. 3. Pr., ECON 2030 or ECON 2037 and STAT 2610. The fundamental mathematical and quantitative methods employed by economists. The application of calculus, probability, statistics, and linear algebra to economics. An introduction to multivariate regression analysis and the testing of economic hypotheses.

**ECON 3700 HISTORY OF ECONOMIC THOUGHT (3).** LEC. 3. Pr., (ECON 2030 or ECON 2037). The development of economic ideas, principles and systems of analysis from early times to the present.

**ECON 3800 PUBLIC CHOICE (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Economic analysis of public sector decision making. Emphasis on actions taken by voters, bureaucrats, and lobbyists elected to influence public sector outcomes.

**ECON 4000 ECONOMICS OF WORK AND PAY (3).** LEC. 3. Pr., ECON 2020 or ECON 2027. Theoretical and institutional examination of the labor market, including wage theories, unionism, occupational choice and public policy.

**ECON 4100 INDUSTRIAL ORGANIZATION (3).** LEC. 3. Pr., ECON 2020. Relationship of market structure to the pricing behavior and economic performance of firms. Topics include regulation, research and development and technical change.

**ECON 4200 GOVERNMENT, BUSINESS AND SOCIETY (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Economic role of government in a free enterprise economy. Application of microeconomic theory to policy issues, particularly antitrust and regulation.

**ECON 4300 INTERNATIONAL ECONOMICS (3).** LEC. 3. Pr., or ECON 2037 or ECON 2030. Economic consequences of free trade, including identification and measurement of gains and losses. Analysis of trade restrictions such as quotas, tariffs and VERs, Examination of labor and capital movements between nations.

**ECON 4500 ECONOMIC HISTORY OF EUROPE (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Survey of the economic development of Europe and the resulting impact on the U.S. and the world economics. Departmental approval.

**ECON 4600 ECONOMETRICS I (3).** LEC. 3. Pr., ECON 3600 and STAT 2610. This course provides students with a basic statistical toolbox that can be used to analyze economic data and evaluate economic models. We cover topics relating to simple and multivariate linear regressions, maximum likelihood estimation, serial correlation and heteroscedasticity, simultaneous equations, qualitative response models, and basic time series.

**ECON 4700 BUSINESS HISTORY OF THE UNITED STATES (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. The study of business as the driving force in American economic history. Departmental approval.

**ECON 4920 INTERNSHIP (1-3).** AAB/INT. SU. Pr., ECON 2030 and ECON 2037. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ECON 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. ECON 3020 Directed readings on a topic of special interest. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ECON 4970 SPECIAL TOPICS (1-3).** AAB/IND. SU. Investigation and research into economic problems of special interest to the student and instructor. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ECON 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. ECON 3020. Directed honors thesis research. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ECON 5020 ADVANCED MICROECONOMICS (3).** LEC. 3. Pr., ECON 3020 and MATH 1610. Mathematical analysis of market-based pricing and production. Includes the economics of information and uncertainty, and strategic behavior. Departmental approval.

**ECON 5030 MACROECONOMIC THEORY AND POLICY (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Analysis of the national economy and impact of government policies on aggregate economic variables. Departmental approval.

**ECON 5100 ECONOMICS OF GROWTH AND DEVELOPMENT (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Cause/effects of economic growth and development. Measuring growth, role of government policy, growth and trade, investment, etc.

**ECON 5200 URBAN AND REGIONAL ECONOMIC DEVELOPMENT (3).** LEC. 3. Pr., ECON 2030 or ECON 2037 and ECON 3020. Nature/causes of state/local economic development, including plant location, residential location, interregional trade and factor flows, public policy.

**ECON 5400 ECONOMIC HISTORY OF THE UNITED STATES (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Survey of the economic advancement of the United States from European origins to the present. Departmental approval.

**ECON 5600 BUSINESS AND ECONOMIC FORECASTING (3).** LEC. 3. Pr., ECON 2030 or ECON 2037 and STAT 2610 or STAT 2010. Interpretation of macroeconomic forecasting methods and development of competency in forecasting at the firm level. Departmental approval.

**ECON 5700 HEALTH ECONOMICS (3).** LEC. 3. Pr., ECON 3020. Analysis of the economics of health care, including demand for and supply of health care, and health care policy. Departmental approval.

**ECON 5800 GOVERNMENT SPENDING AND TAXATION (3).** LEC. 3. Pr., ECON 3020. The economic rationale for government expenditures, economic consequences of public spending, and methods of taxation and funding of government programs. Departmental approval.

**ECON 6020 ADVANCED MICROECONOMICS (3).** LEC. 3. Pr., ECON 3020 and MATH 1610. Mathematical analysis of market-based pricing and production. Includes the economics of information and uncertainty, and strategic behavior.

**ECON 6030 MACROECONOMIC THEORY AND POLICY (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Analysis of the national economy and impact of government policies on aggregate economic variables. Departmental approval.

**ECON 6100 ECONOMICS OF GROWTH AND DEVELOPMENT (3).** LEC. 3. Pr., or ECON 2030 or ECON 2037. Cause/effects of economic growth and development. Measuring growth, role of government policy, growth and trade, investment, etc.

**ECON 6200 URBAN AND REGIONAL ECONOMIC DEVELOPMENT (3).** LEC. 3. Pr., ECON 2030 or ECON 2037 and ECON 3020. Nature/causes of state/local economic development, including plant location, residential location, interregional trade and factor flows, public policy.

**ECON 6400 ECONOMIC HISTORY OF THE UNITED STATES (3).** LEC. 3. Pr., ECON 2030 or ECON 2037. Survey of the economic advancement of the United States from European origins to the present. Departmental approval.

**ECON 6600 BUSINESS AND ECONOMIC FORECASTING (3).** LEC. 3. Pr., ECON 2030 or ECON 2037 and STAT 2610 or STAT 2010. Interpretation of macroeconomic forecasting methods and development of competency in forecasting at the firm level. Departmental approval.

**ECON 6700/6706 HEALTH ECONOMICS (3).** LEC. 3. Pr., ECON 3020. Analysis of the economics of health care, including demand for and supply of health care, and health care policy. Departmental approval.

**ECON 6800 GOVERNMENT SPENDING AND TAXATION (3).** LEC. 3. Pr., ECON 3020. The economic rationale for government expenditures, economic consequences of public spending, and methods of taxation and funding of government programs. Departmental approval.

**ECON 7000 MANAGERIAL ECONOMICS (3).** LEC. 3. Microeconomic theories of the firm and of markets, with emphasis on their applications to current business issues. Consent of MBA program director.

**ECON 7110 MICROECONOMICS I (3).** LEC. 3. Pr., ECON 3020. Consumer behavior and market models of competition and monopoly. Traditional and contemporary theories of consumer/ household behavior under constraint; models of competitive behavior. Departmental approval.

**ECON 7120 MICROECONOMICS II (3).** LEC. 3. Pr., ECON 7110. Analysis of producer behavior, including production theory, cost theory, profit maximization, theories of various market structures and derived demand for inputs. Departmental approval.

**ECON 7130 MATHEMATICAL ECONOMICS (3).** LEC. 3. Pr., ECON 3020 and ECON 6030. Fundamental mathematical methods in economics and econometrics: linear and matrix algebra, calculus, comparative statistics, optimization, concavity, constrained optimization dynamics difference equations, and differential equations. Departmental approval.

**ECON 7210 MACROECONOMICS I (3).** LEC. 3. Pr., ECON 6030. Evaluation of fundamental theoretical and policy-oriented issues in macroeconomics, emphasizing post-Keynesian developments. Departmental approval.

**ECON 7220 MACROECONOMICS II (3).** LEC. 3. Pr., ECON 6030. Foundations of macroeconomics, neoclassical production and growth theory, overlapping generations models, optimal saving, open economy macroeconomics, applied time series macrodynamics. Departmental approval.

**ECON 7310 ECONOMETRICS I (3).** LEC. 3. Advanced treatment of the standard linear model of least square theory, including assumptions and properties of the SLM, and the statistical testing of behavioral hypotheses. Departmental approval.

**ECON 7320 ECONOMETRICS II (3).** LEC. 3. Pr., ECON 7310. Econometric techniques employed in advanced empirical research. Topics include estimation and inference in simultaneous equation systems, limited dependent variables, non-nested testing, time-series analysis.

**ECON 7410 HISTORY OF ECONOMIC THOUGHT I (3).** LEC. 3. Pr., ECON 3700. Analysis and study of classical contributions to economics, from early times to Karl Marx. Departmental approval.

**Education (EDUC)**

Dr. Peggy Dagley 844-4448

**EDUC 1010 ORIENTATION TO TEACHER EDUCATION (1).** LEC. 1. SU. Orientation to the teaching profession.

**Educational Foundations, Leadership and Technology (EFLT)**

Ms. Sherida Downer - 844-4460

ADULT EDUCATION (ADED)

Dr. James Witte - 844-3054

**ECON 7420 HISTORY OF ECONOMIC THOUGHT II (3).** LEC. 3. Pr., ECON 3700. Neoclassical economics including Mill, Jevons, early Austrians, early French contributors, Veblenian institutional economics, and Alfred Marshall. Departmental approval.

**ECON 7990 RESEARCH AND THESIS (1-6).** MST. Departmental approval. Course may be repeated with change in topics.

**ECON 8110 ADVANCED MICROECONOMICS I (3).** LEC. 3. Pr., ECON 7120. Advanced analysis, integrating the economics of time and uncertainty into mainline price theory. Departmental approval.

**ECON 8120 ADVANCED MICROECONOMICS II (3).** LEC. 3. Pr., ECON 7120. Advanced analysis, integrating imperfect information and strategic behavior into economic models of trade and investment. Departmental approval.

**ECON 8210 TOPICS IN MACROECONOMICS (3).** LEC. 3. Pr., ECON 7220. Goals, procedures and achievements in attaining monetary objectives domestically and abroad. Emphasis on macro-money models and effects of monetary policy on economic activity. Departmental approval.

**ECON 8310 MICROECONOMETRICS (3).** LEC. 3. Pr., ECON 7320. Analysis of limited dependent variable models, including Logit, Probit and Tobit models, censored and truncated regression models, frontier models and mixture models. Departmental approval.

**ECON 8320 TOPICS IN MACROECONOMETRICS (3).** LEC. 3. Pr., ECON 7320. The analysis of economic time series and the identification and estimation of parameters in multi-equation economic models.

**ECON 8420 ECONOMIC INSTITUTIONS AND CONTEMPORARY ECONOMIC THEORY (3).** LEC. 3. How contemporary economic theory helps explain the emergence, hey-day and decline of economic institutions, including "Social" and regulatory institutions. Departmental approval.

**ECON 8510 ECONOMICS OF TAXATION (3).** LEC. 3. Pr., ECON 7120. Examines tax structures in the U.S. evaluates tax reform proposals and the effects of taxation on resource allocation and economic welfare. Departmental approval.

**ECON 8520 PUBLIC CHOICE (3).** LEC. 3. Advanced analysis of governmental expenditures and other not-for-profit sectors of the economy. Departmental approval.

**ECON 8530 ECONOMIC ANALYSIS OF THE LAW (3).** LEC. 3. Pr., ECON 3020. Advanced analysis of the substantive areas in which law has an economic foundation and ways law affects economic relations. Departmental approval.

**ECON 8540 SEMINAR IN ENVIRONMENTAL ECONOMICS (3).** LEC. 3. Pr., ECON 3020. Advanced analysis of pricing and allocation of renewable and non-renewable resources. Departmental approval.

**ECON 8550 EXTERNALITIES AND PUBLIC GOODS (3).** LEC. 3. Pr., ECON 7120. Advanced analysis of pricing and allocation of economic goods when property rights are not well defined. Departmental approval.

**ECON 8610 INDUSTRIAL ORGANIZATION I (3).** LEC. 3. Pr., ECON 7120. Determinants of market structure, effects of market structure on industry performance, theory of the firm, research and development, advertising and vertical integration. Departmental approval.

**ECON 8620 INDUSTRIAL ORGANIZATION II (3).** LEC. 3. Pr., ECON 7120. Primary focus is on case studies in the history and current practice of regulation in the United States at all levels. Departmental approval.

**ECON 8710 INTERNATIONAL TRADE (3).** LEC. 3. Trade theory: classical, neo-classical, factor proportions, and industrial organization. Applied trade theory and empirical applications. Departmental approval.

**ECON 8720 INTERNATIONAL MACROECONOMICS (3).** LEC. 3. Theoretical and applied time series analysis at open economy macroeconomic models, international monetary and financial theory, balance of payments theory, and exchange rates. Departmental approval.

**ECON 8810 LABOR MARKET ANALYSIS (3).** LEC. 3. Pr., ECON 7110. Analysis of labor markets, and determination of wages and other terms of employment. Emphasis on academic studies of labor market issues. Departmental approval.

**ECON 8820 TOPICS IN LABOR ECONOMICS (3).** LEC. 3. Pr., ECON 7110. Selected topics, including education and on-the-job training. Labor mobility/immigration, employment discrimination, and the impact of labor unions. Departmental approval.

**ECON 8970 SPECIAL PROBLEMS (1-3).** LEC. SU. Variable content in the economics area. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ECON 8980 ECONOMICS WORKSHOP (1).** LEC. 1. Individual research project, presentations, and discussion of the economics profession. Departmental approval.

**ECON 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Departmental approval. Course may be repeated with change in topics.

**ADED 4010 LEARNING RESOURCES IN AREA OF SPECIALIZATION (3).** LEC. 3. Pr., ADED 4050 Selecting, developing, utilizing, and evaluating instructional resources and technology for teaching. Departmental approval.

**ADED 4050 METHODS OF TEACHING IN ADULT EDUCATION (3).** LEC. 2, LAB. 2. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within adult education.

**ADED 4600 NATURE OF ADULT EDUCATION (3).** LEC. 3. History and principles of adult education applied to the development and implementation of programs in remedial, occupational, continuing, and life-long learning.

**ADED 4610 DIRECTED WORK EXPERIENCE (3).** LEC. 3. SU. Pr., ADED 4600. In-service, supervised work experience individually designated for part-time or summer work experience. Departmental approval.

**ADED 4620 COMMUNITY CONCEPTS, PROGRAMS, AND RESOURCES IN ADULT EDUCATION (3).** LEC. 3. Pr., ADED 4600 Processes by which adult education is merged with community organizations to maximize the effective use of physical and human resources. Departmental approval.

**ADED 4650 TEACHING THE DISADVANTAGED ADULT (3).** LEC. 3. Pr., ADED 4600. Problems of the disadvantaged adult with emphasis on the unique sociological, psychological, and physiological factors that influence learning and participation in remedial learning activities. Departmental approval.

**ADED 4660 TEACHING IN THE NON-SCHOOL SETTING (3).** LEC. 3. Planning, conducting, and supervising instruction for adults in varied non-school settings. Departmental approval.

**ADED 4900 INDEPENDENT STUDY (1-6).** IND. Independent study directed toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 4910 PRACTICUM (1-6).** PRA. SU. Experience relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 4920 PROFESSIONAL INTERNSHIP IN ADULT EDUCATION (9).** INT. 9. SU. Supervised internship experiences in a school or other appropriate setting. Evaluation and analysis of the internship experience. or Minor.

**ADED 4970 SPECIAL TOPICS (1-6).** LEC. Current or special topics within adult education. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 7010/7016 LEARNING RESOURCES (3).** LEC. 3. Selecting, developing, utilizing, and evaluating instructional resources and technology for teaching.

**ADED 7050 METHODS OF TEACHING IN ADULT EDUCATION (3).** LEC. 2, LAB. 2. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within adult education.

**ADED 7060 CURRICULUM AND PROGRAM PLANNING IN ADULT EDUCATION (3).** LEC. 3. Introduction to principles and practices involved in designing education programs in the area of specialization.

**ADED 7600/7606 NATURE OF ADULT EDUCATION (3).** LEC. 3. History and principles of adult education applied to the development and implementation of programs in remedial, occupational, continuing and life-long learning.

**ADED 7620 COMMUNITY CONCEPTS, PROGRAMS, AND RESOURCES IN ADULT EDUCATION (3).** LEC. 3. Processes by which adult education is merged with community organizations to maximize the effective use of physical and human resources. Departmental approval.

**ADED 7640 WORKFORCE EDUCATION (3).** LEC. 3. Identification and evaluation of basic skills problems in the workplace. Strategies for addressing workplace education issues.

**ADED 7650/7656 TEACHING THE DISADVANTAGED ADULT (3).** LEC. 3. Problems of the disadvantaged adult with emphasis on the unique sociological, psychological, and physiological factors that influence learning and participation in remedial learning activities.

**ADED 7900 DIRECTED STUDIES (1-3).** IND. SU. Independent study directed toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

## *Educational Foundations, Leadership and Technology (EFLT)*

**ADED 7910 PRACTICUM (1-3).** PRA. SU. Experiences closely relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ADED 7920 INTERNSHIP (1-10).** INT. SU. Pr., ADED 7050. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. Course may be repeated for a maximum of 10 credit hours.

**ADED 7950 SEMINAR (1-3).** SEM. SU. Presentation of research projects, analysis of procedures, and findings. Course may be repeated for a maximum of 3 credit hours.

**ADED 7960 READINGS (1-3).** IND. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 7970 SPECIAL TOPICS (1-6).** LEC. Current or advanced topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 7990 RESEARCH AND THESIS (1-10).** MST. Individualized support and direction for students writing their thesis. Departmental approval. Course may be repeated with change in topics.

**ADED 8900 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 8910 PRACTICUM (1-6).** PRA. SU. Experiences closely relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 8920 INTERNSHIP (1-10).** INT. SU. Supervised internship experiences in a school, college, or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**ADED 8950 SEMINAR (1-6).** SEM. SU. Presentation by graduate students of research projects and/or analysis of procedures and findings. Course may be repeated for a maximum of 6 credit hours.

**ADED 8960 SPECIAL PROBLEMS (1-6).** IND. Critical analysis of current and classical research writings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 8970 SPECIAL TOPICS (1-6).** LEC. Current or advanced topics within adult education. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ADED 8980 FIELD PROJECT (1-10).** FLD. SU. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**ADED 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Individualized support and direction for students writing their dissertation. Course may be repeated for a maximum of 10 hours Departmental approval.

### EDUCATIONAL LEADERSHIP (EDLD)

Dr. Ellen Reames - 844-4460

**EDLD 7200 SUPERVISION AND PERSONNEL MANAGEMENT (3).** LEC. 3. Supervision theory and practice with responsibility for leadership in the recruitment, evaluation and staff development of employees.

**EDLD 7210 MULTIPROFESSIONAL LEADERSHIP (3).** LEC. 3. Theories, concepts and principles of leadership from a multi-disciplinary, multi-professional perspective. Students will apply knowledge to practice in diverse settings and situations.

**EDLD 7220 ORGANIZATIONAL AND SCHOOL MANAGEMENT (3).** LEC. 3. Procedures and practices in school educational management. Covers business management, facilities, student activities, library services, transportation, and student records.

**EDLD 7230 STUDENT SERVICES ADMINISTRATION IN POSTSECONDARY EDUCATION (3).** LEC. 3. Organization, administration and evaluation of student personnel services in post-secondary education.

**EDLD 7240 LEADERSHIP IN LEGAL ISSUES (3).** LEC. 3. Constitutional and statutory provisions for education and an analysis of judicial decisions affecting education K-16.

**EDLD 7270 OVERVIEW OF POSTSECONDARY EDUCATION (3).** LEC. 3. Overview of the history and evolution of post-secondary education in North America.

**EDLD 7330 INTRODUCTION TO CURRICULUM AND INSTRUCTIONAL LEADERSHIP (3).** LEC. 3. Principles of curriculum development and the leadership skills required to enact it with emphasis on school settings.

**EDLD 7340 OVERVIEW OF CURRICULUM PROCESSES (3).** LEC. 3. Curriculum as a field of study; the first course required for the ASC concentration in curriculum; an overview of curriculum history, processes, models, and designs.

**EDLD 7500 PRINCIPAL LEADERSHIP (3).** LEC. 3. Designed to serve instructional leaders in K-12 settings concerning leadership dispositions and leadership theory important to promoting student success and achievement.

**EDLD 7510 ACTION RESEARCH AND DATA ANALYSIS (3).** LEC. 3. Research methodologies to improve instructional and school-based decision-making action, qualitative, and case study techniques applied to school, classroom, or school-community observation.

**EDLD 7520 LEADERSHIP AND THE LEARNING ORGANIZATION (3).** LEC. 3. Management of schools as learning organizations; issues related to student learning and achievement through attention to organizational components.

**EDLD 7530 PLANNING AND CONTINUOUS IMPROVEMENT (3).** LEC. 3. Development of frameworks for collection, analysis, and use of school data for the improvement of instruction, the learning environment, and student achievement.

**EDLD 7540 INSTRUCTIONAL AND CURRICULAR LEADERSHIP (3).** LEC. 3. Curriculum design and development; areas of study include student needs, organizational mission and goals, data driven improvement, change process, diverse faculty, curriculum alignment tools.

**EDLD 7550 EDUCATIONAL FINANCE AND RESOURCE MANAGEMENT (3).** LEC. 3. Preparation of pro-active leaders in school business affairs; use of action research and components of a comprehensive, ongoing, planning and budgeting program; facilities management.

**EDLD 7560 EDUCATIONAL SYSTEMS AND COMMUNITIES (3).** LEC. 3. Change theory, forecasting, trend analysis and application of these concepts to student achievement and school improvement efforts.

**EDLD 7570 LEGAL AND ETHICAL ISSUES (3).** LEC. 3. Ethical and legal provisions for education communities: emphasis on the support of and belief in the cultural value of a diverse and educated democratic society.

**EDLD 7580 SUPERVISION AND PERSONNEL ISSUES IN EDUCATION (3).** LEC. 3. Policies and practices related to teacher recruitment, selection, evaluation, and professional development; faculty/staff developmental processes that impact student achievement and school improvement efforts.

**EDLD 7900 DIRECTED STUDIES (1-9).** IND. SU. Independent study directed toward desired objectives. Includes evaluation by professor and student at regular intervals. Course may be repeated for a maximum of 9 credit hours.

**EDLD 7910 PRACTICUM IN ATHLETIC ADMINISTRATION (1-6).** PRA. Experience in the management of specific administrative offices. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**EDLD 7920 ADMINISTRATIVE INTERNSHIP (1-6).** AAB/INT. Opportunities for interns to internalize and employ administrative skills learned during graduate coursework. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**EDLD 7930 ADMINISTRATIVE INTERNSHIP/RESIDENCY (1-6).** INT. Ongoing field-based experiences in educational administration; observation, participation, and leading with practicing administrators in school systems. Course may be repeated for a maximum of 6 credit hours.

**EDLD 7970 SPECIAL TOPICS (1-9).** LEC. Variable content for advanced studies in the area of educational leadership. Course may be repeated for a maximum of 9 credit hours.

**EDLD 8200 ASSESSMENT AND EVALUATION IN LEARNING ORGANIZATIONS (3).** LEC. 3. Study of assessment and evaluation practices that enable learning organizations to use data for decision-making purposes.

**EDLD 8210 EDUCATIONAL LEADERSHIP: THEORY & PRACTICE (3).** LEC. 3. Leadership theory and applications for K-12 settings.

**EDLD 8220 PERSONAL AND PROFESSIONAL DEVELOPMENT (3).** LEC. 3. Includes theoretical frameworks and applications for successful and systematic mentoring of professionals in organizations.

**EDLD 8230 SYSTEMIC PLANNING AND BUDGETING (3).** LEC. 3. Covers the components and implementation of a comprehensive ongoing planning and budgeting program for learning organizations.

**EDLD 8240 TRENDS AND ISSUES IN EDUCATIONAL ADMINISTRATION (3).** LEC. 3. Trends and issues affecting educational institutions with particular attention to development of administrative procedures to cope with educational changes.

**EDLD 8250 ORGANIZATIONAL POWER, POLITICS AND POLICY FORMATION (3).** LEC. 3. Analysis of social forces, antecedent movements, and political actions affecting organizations. The study of policy development and practice.

**EDLD 8260 THEORY AND DEVELOPMENT OF ORGANIZATIONS (3).** LEC. 3. Theoretical frameworks of educational organizations.

**EDLD 8270 LEADERSHIP IN FINANCE AND MANAGEMENT (3).** LEC. 3. Educational finance including revenues, expenditures, cost, budgeting and accounting, and the local, state and federal role in supporting education.

**EDLD 8280/8286 THEORY AND DEVELOPMENT OF ORGANIZATIONS (3).** LEC. 3. Theoretical frameworks of educational organizations. Credit will not be given for EDLD 8280 and EDLD 8286.

## Educational Foundations, Leadership and Technology (EFLT)

**EDLD 8300 CURRICULUM THEORY AND PRACTICE (3).** LEC. 3. Pr., EDLD 7340. Advanced course dealing with application of curriculum theories with an emphasis on the impact of philosophical and theoretical beliefs on practice. Departmental approval; or other General Curriculum course.

**EDLD 8310 LEADERSHIP IN THE DEVELOPMENT AND APPLICATION OF CURRICULUM AND THEORY DESIGN (3).** LEC. 3. Pr., EDLD 7340 and EDLD 8300. Application of transformative leadership in the design, delivery, and evaluation of curriculum in a wide variety of organizational settings. Departmental approval.

**EDLD 8320 CURRICULUM LEADERSHIP FOR ORGANIZATIONS (3).** LEC. 3. Pr., EDLD 7340 and EDLD 8300 and EDLD 8310. For those considering a career in upper level management. focuses on context, societal, and political influences related to curriculum processes and organizational change. Departmental approval.

**EDLD 8340 TRANSFORMATIONAL PROCESSES AND ORGANIZATIONAL CHANGE (3).** LEC. 3. Organizational and transformational change at personal, interpersonal, and institutional levels.

**EDLD 8400 ETHICS FOR LEADERS (3).** LEC. 3. Theory and practice of ethics and the role of ethical and personal integrity for leaders in the context of educational organizations and the communities they serve.

**EDLD 8480 INSTITUTIONAL RESEARCH AND DECISION SUPPORT (3).** LEC. 3. Components of institutional research and assessment programs that can support the comprehensive planning, decision support, and management needs of the institution.

**EDLD 8500 THE PROFESSORIATE (3).** LEC. 3. Study of differences and similarities in faculty roles, work, and career paths using various disciplinary and institutional lenses.

**EDLD 8510 SEMINAR IN COLLEGE TEACHING (3).** LEC. 3. Overview of major issues in Higher Education and methods of instruction in college teaching. Involves use of experiential learning, group and collaborative activities such as microteaching, case studies, e-mail dialogue and reflective writing.

**EDLD 8940 DIRECTED FIELD EXPERIENCE IN EDUCATIONAL LEADERSHIP (1-6).** FLD. Field-based experience in diverse settings to develop knowledge, skills, and abilities in an area of special interest. Course may be repeated for a maximum of 6 credit hours.

**EDLD 8950 SEMINAR (3).** SEM. 3. Professional and social integration into doctoral program; enhancement of professional knowledge through structured inquiry, professional dialogue, and reflective thinking. Course may be repeated for a maximum of 6 credit hours.

**EDLD 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Individualized support and direction for students writing their dissertation. Course may be repeated for a maximum of 10 hours. Course may be repeated with change in topics.

### EDUCATIONAL MEDIA (EDMD)

Dr. Sara Wolf - 844-3082

**EDMD 3300 UTILIZATION OF INSTRUCTIONAL TECHNOLOGY FOR EDUCATORS (2).** LEC. 1, LAB. 2. Basics of current and emerging instructional & communication technologies with primary emphasis on curricular integration. Location, selection, and application of technology resources (WWW, commercially authored software, etc.) for curricular needs with emphasis on developmental stages, learning styles and learning technologies. Limited to majors requiring teaching certification.

**EDMD 5000 INSTRUCTIONAL TECHNOLOGY FOR TEACHING AND LEARNING (3).** LEC. 3. Introduction to the systematic application of instructional technologies in teaching and learning environments.

**EDMD 5100 MEDIA FOR CHILDREN (3).** LEC. 3. Examination and evaluation of current literature in print and other formats, including oral literature. Focuses on literary and instructional criteria for selecting and utilizing media.

**EDMD 6000/6006 INSTRUCTIONAL TECHNOLOGY FOR TEACHING AND LEARNING (3).** LEC. 3. Introduction to the systematic application of instructional technologies in teaching and learning environments.

**EDMD 6100 MEDIA FOR CHILDREN (3).** LEC. 3. Examination and evaluation of current literature in print and other formats, including oral literature. Focuses on literary and instructional criteria for selecting and utilizing media.

**EDMD 7000/7006 INSTRUCTIONAL DESIGN AND DEVELOPMENT (3).** LEC. 3. Theory, problems, procedures, and standards in the utilization of technology in instructional design and development.

**EDMD 7010/7016 INSTRUCTIONAL AND INFORMATION TECHNOLOGIES (3).** LEC. 3. Evaluation, selection, and use of traditional and current technologies for instruction, information, and administration in learning environments.

**EDMD 7020/7026 PRINCIPLES OF GRAPHIC DESIGN FOR INSTRUCTION (3).** LEC. 3. Principles of graphic design and visual literacy to facilitate the presentation of information. Criteria for graphics utilization examined. Credit will not be given for EDMD 7020 and EDMD 7026.

**EDMD 7100/7106 SELECTION AND USE OF MEDIA FOR YOUTH (3).** LEC. 3. Evaluation, selection, and use of print and non-print media for youth, including materials for multi-cultural, special and gifted education.

**EDMD 7110 BIBLIOGRAPHIC DESCRIPTION, ORGANIZATION AND CONTROL (3).** LEC. 3. Principles and procedures of describing, classifying and organizing resources with applications using new technologies.

**EDMD 7120/7126 INFORMATION SOURCES, SERVICES AND INSTRUCTION (3).** LEC. 3. An overview of information needs, services, and print and electronic resources; ways to teach information literacy skills.

**EDMD 7130 ADMINISTRATION OF MEDIA AND TECHNOLOGY SERVICES (3).** LEC. 3. Functions of and planning for media and technology services. Budget, evaluation, facilities, guidelines, legal issues, personnel and policies.

**EDMD 7200 COMPUTER-BASED INSTRUCTIONAL DESIGN (3).** LEC. 3. Applying computer-based instructional design skills, students will develop instructional products using desktop publishing, hypermedia and optical technologies.

**EDMD 7210/7216 INTEGRATION OF TECHNOLOGY INTO CURRICULUM (3).** LEC. 3. Learner competence in integration of technology into curriculum, including designing and writing software and plans for using computers in instruction.

**EDMD 7220/7226 VIDEO-BASED INSTRUCTIONAL DESIGN (3).** LEC. 3. Development and integration of video into learning prescriptions. Emphasis on the assigning of video in a total systems approach to curriculum building.

**EDMD 7230/7236 THEORY AND PRACTICE OF DISTANCE EDUCATION (3).** LEC. 3. Theories, concepts, and tools that support distance education, with emphasis on application in design, development, and implementation of distance education instruction. Credit will not be given for both EDMD 7230 and EDMD 7236.

**EDMD 7300/7306 RESEARCH IN INSTRUCTIONAL TECHNOLOGY (3).** LEC. 3. Pr., ERMA 7200 or FOUN 7200 or ERMA 7206 or FOUN 7206. A forum for sharing research perspectives, exploring processes involved in defining research problems and analyzing research theories, problems, and methods in instructional technology. Credit will not be given for EDMD 7300 and EDMD 7306.

**EDMD 7310 EVALUATION OF MEDIA AND TECHNOLOGY PROGRAMS (3).** LEC. 3. Factors contributing to effective media and technology programs. Understanding of research process and experience with media and technology services assumed.

**EDMD 7320/7326 ADVANCED INFORMATION SOURCES AND SERVICES (3).** LEC. 3. Electronic databases, advanced searching techniques, information representation, and the role of the media specialist in networking and creating electronic information sources. Previous coursework such as EDMD 7120 or equivalent is needed.

**EDMD 7900 DIRECTED STUDIES (1-6).** IND. SU. Independent study directed toward desired objectives. Includes evaluation by professor of student's work accomplished at regular intervals. Course may be repeated for a maximum of 6 credit hours.

**EDMD 7910 PRACTICUM (1-6).** PRA. SU. Experiences closely relating theory and practice, usually conducted in realistic settings. Course may be repeated for a maximum of 6 credit hours.

**EDMD 7920 INTERNSHIP (1-6).** INT. SU. Supervised experience in a school media center or other appropriate setting. These experiences, accompanied by regularly scheduled meetings with the university supervisor, provide evaluation and analysis of the intern experience. Course may be repeated for a maximum of 6 credit hours.

**EDMD 7940/7946 DIRECTED FIELD EXPERIENCE (3-6).** FLD. SU. Pr., FOUN 7200 or ERMA 7200 or ERMA 7206 or FOUN 7206. Field-based study in the area of media and technology. Addresses a scholarly concern of the student and is conducted using valid research techniques. Credit will not be given for EDMD 7940 and EDMD 7946. Course may be repeated for a maximum of 6 credit hours.

**EDMD 7970 SPECIAL TOPICS IN INSTRUCTIONAL TECHNOLOGY (3-9).** LEC. Opportunity for study of current topics related to the field of instructional technology. Course may be repeated for a maximum of 9 credit hours.

### EDUCATIONAL PSYCHOLOGY (EPSY)

Dr. Paris Strom - 844-3077

**EPSY 7400/7406 ED PSYCH & EDUCATIONAL IMPLICA (3).** LEC. 3. Educational psychology theory and research addressing critical problems, challenges, and opportunities in education or other growth-oriented settings. Content ranges from the study of learning to educational evaluation and authentic assessment.

**EPSY 7410 THE INDIVIDUAL IN THE TEACHING-LEARNING PROCESS (3).** LEC. 3. The study of human growth, development, and motivation theory and research, including culture, socio-economic status, language, gender and race as a base for understanding individual differences and their sources.

**EPSY 7420/7426 LEARNING THEORY AND EDUCATIONAL PRACTICE (3).** LEC. 3. Pr., (EPSY 7400 or FOUN 7400) or (EPSY 7406 or FOUN 7406). Advanced study of learning theory and research with an emphasis on application to effective design, implementation, and evaluation of instruction. Motivation and management models will also be addressed. Departmental approval.

**EPSY 7430 MOTIVATION AND ACHIEVEMENT (3).** LEC. 3. Social, cultural, and psychological antecedents of achievement motivation are examined. This process

requires reviewing theories and research, and emphasis is placed on discerning implications for practice and policy.

**EPSY 7440 CLASSROOM MANAGEMENT: SKILLS AND REFLECTION (3).** LEC. 3. Advanced study and analysis of existing classroom management/discipline models including observation/action research activity.

**EPSY 7450 PERSONAL AND PROFESSIONAL DEVELOPMENT AND PERSONALITY DYNAMICS (3).** LEC. 3. Survey of different theories and models of personality leading to in-depth study of theories and models most applicable for use in conceiving of and building personal and professional development plans.

**EPSY 7900 DIRECTED STUDIES (1-6).** IND. SU. Special study in which the student's learning efforts are guided toward desired objectives. Course may be repeated for a maximum of 6 credit hours.

**EPSY 7970 SPECIAL TOPICS IN FOUNDATION OF EDUCATION (3-6).** LEC. Consideration of historical, philosophical, social, psychological, measurement, statistics or research issues, and their impact on education. Course may be repeated for a maximum of 6 credit hours.

**EPSY 8410/8416 LEARNING IN THE SOCIAL CONTEXT (3).** LEC. 3. Pr., (FOUN 7420 or FOUN 7426 or EPSY 7420 or EPSY 7426). Examination of the complex nature of learning as a socially- shared and individualized process. Topics may include the social construction of knowledge, scaffolded instruction, cognitive apprenticeships, and problem based learning. Credit will not be given for EPSY 8410 and EPSY 8416.

**EPSY 8430 TOPICAL SEMINAR IN LEARNING, COGNITION, AND INSTRUCTION (3).** LEC. 3. An intensive and advanced study of research and theory on selected topics. Examples include folk theories of mind and alternative methods of studying thinking.

**EPSY 8440 ED PSYCH APPRENT SEMINAR (3).** LEC. 3. Focuses on the historical foundations of educational psychology as well as possibilities for future disciplinary development.

**EPSY 8540 EDUCATIONAL PSYCHOLOGY RESEARCH APPRENTICESHIP SEMINAR (3).** LEC. 3. A structured context for students to begin applying what they have learned from their research methods and statistic courses. Students will design and conduct research that contributes to the educational psychological knowledge base.

**EPSY 8640 EDUCATIONAL PSYCHOLOGY LEARNING AND INSTRUCTION APPRENTICESHIP SEMINAR (3).** LEC. 3. A structured opportunity for students to begin applying educational psychological concepts and theories in the classroom. Students will study theories of learning and instruction and begin to translate and implement these theories into practice.

**EPSY 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Individualized support and direction for students writing their dissertations. Courses may be repeated for a maximum of 10 hours. Course may be repeated with changes in topic.

EDUCATIONAL RESEARCH, MEASUREMENT AND ANALYSIS (ERMA)  
Dr. Margaret Ross - 844-3084

**ERMA 7100 ADVANCED STUDY OF EDUCATIONAL MEASUREMENT AND EVALUATION (3).** LEC. 3. Educational measurement and evaluation with special emphasis on uses of measurement data such as standardized testing and emerging evaluation models such as alternative and authentic assessment.

**ERMA 7110 EDUCATIONAL PSYCHOLOGY AND ASSESSMENT (3).** LEC. 3. Study of educational psychology as it applies to understanding the teaching-learning process. Measurement and evaluation skills will also be covered.

**ERMA 7200/7206 BASIC METHODS IN EDUCATION RESEARCH (3).** LEC. 3. Major modes of inquiry in contemporary educational research including experimental, casual comparative, descriptive, qualitative inquiry, and action research models.

**ERMA 7210 THEORY AND METHODOLOGY OF QUALITATIVE RESEARCH (3).** LEC. 3. Major modes of qualitative research, their underlying philosophical assumptions about knowledge, and the major strategies for collecting and analyzing relevant data.

**ERMA 7220 APPLIED QUALITATIVE RESEARCH (3).** LEC. 3. Pr., (ERMA 7210 or FOUN 7210). Study of detailed strategies of data collection, principles of observation, interviewing, focus groups, recording and coding data, triangulation, strategies for analyzing coded data, and writing up of one's findings.

**ERMA 7300/7306 DESIGN AND ANALYSIS IN EDUCATION I (3).** LEC. 3. Pr., (FOUN 7200 or ERMA 7200 or FOUN 7206 or ERMA 7206). Basic methods of inferential analysis including t-tests, between and within subjects ANOVA, mixed ANOVAs and hierarchical designs as they are utilized in educational research. Departmental approval.

**ERMA 7310/7316 DESIGN AND ANALYSIS IN EDUCATION II (3).** LEC. 3. Pr., (FOUN 7300 or ERMA 7300) or (FOUN 7306 or ERMA 7306). Bivariate and multiple correlation and regression analysis, trend analysis, analysis of covariance, logistic regression, and path analysis as they are utilized in educational research. Departmental approval.

**ERMA 7900 DIRECTED STUDIES (1-6).** IND. SU. Special study in which the student's learning efforts are guided toward desired objectives. Course may be repeated for a maximum of 6 credit hours.

**ERMA 7970 SPECIAL TOPICS IN FOUNDATION OF EDUCATION (3-6).** LEC. Consideration of historical, philosophical, social, psychological, measurement, statistics or research issues, and their impact on education. Course may be repeated for a maximum of 6 credit hours.

**ERMA 8100 PROGRAM EVALUATION (3).** LEC. 3. Study of various theories and models of curriculum evaluation, methodological issues regarding planning and conducting evaluation studies, reporting and using information from evaluation.

**ERMA 8120 TEACHER EVALUATION (3).** LEC. 3. Analysis of research on teaching, classroom observation methods, teaching portfolios, supervision of teachers, license and certification assessment, ethical and legal consideration, and using information to improve teaching.

**ERMA 8200/8206 SURVEY RESEARCH METHODS (3).** LEC. 3. Overview of survey research, sampling issues, selection and construction of survey instruments, response effects, issues influencing response rate, reliability and validity of survey data, and analysis of survey data.

**ERMA 8320 DESIGN AND ANALYSIS IN EDUCATION III (3).** LEC. 3. Pr., (FOUN 7310 or ERMA 7310) or (ERMA 7316 or FOUN 7316). Discriminate analysis, MANOVA, canonical correlation, exploratory and confirmatory factor analysis, and hierarchical linear modeling as they are utilized in educational research. Departmental approval.

**ERMA 8330 NON-PARAMETRIC DATA ANALYSIS IN EDUCATION RESEARCH (3).** LEC. 3. Pr., FOUN 7300 or ERMA 7300 or ERMA 7306. Common non-parametric statistical tests appropriate for use with nominal and ordinal data in educational applications. These include rank-order correlation, sign tests, median tests, analysis of variance of ranks and log-linear analysis. Departmental approval.

**ERMA 8340 A PRACTICAL INTRODUCTION TO STRUCTURAL EQUATION MODELING (3).** LEC. 3. Pr., (FOUN 8320 or ERMA 8320). Theory and practice of structural equation modeling techniques as they are utilized in educational research will be developed by expanding concepts of multiple linear regression and exploratory factor analysis to allow for correlation and causally related latent constructs. Departmental approval.

**ERMA 8350 ADVANCED MEASUREMENT THEORY (3).** LEC. 3. Pr., (FOUN 7300 or ERMA 7300 or ERMA 7306 or FOUN 7306) and (FOUN 7310 or ERMA 7310 or FOUN 7316 or ERMA 7316). Introduction to classical and modern (IRT) test theory, measurement properties, differential item functioning, standard and adaptive testing.

**ERMA 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Individualized support and direction for students writing their dissertations. Courses may be repeated for a maximum of 10 hours. Course may be repeated with change in topic.

#### CULTURAL FOUNDATIONS (FOUN)

Dr. James Kaminsky 844-3592

**FOUN 3000 DIVERSITY OF LEARNERS AND SETTINGS (3).** LEC. 2, LAB. 3. Pr., 2 GPA. Exploration of socio-cultural factors and individual differences; understanding diversity and communication with students with different cultural backgrounds, abilities, and values; combines class-based as well as community-based discovery learning, known as service learning, that links theory and practice and involves students in active participation in a local agency or service center.

**FOUN 3100 CHILD DEVELOPMENT, LEARNING, MOTIVATION AND ASSESSMENT (6).** LEC. 5, LAB. 3. Pr., EDUC 3000 or (FOUN 3000 and RSED 3000). Admission to Teacher Education. Cognitive, psychosocial, and moral aspects of child development; integration of development, learning, motivation, assessment, and evaluation in context of instructional planning.

**FOUN 3110 ADOLESCENT DEVELOPMENT, LEARNING, MOTIVATION AND ASSESSMENT I (3).** LEC. 2, LAB. 3. Pr., EDUC 3000 or (FOUN 3000 and RSED 3000). Admission to Teacher Education. An integrated approach to the effective instruction of the adolescent learner in context.

**FOUN 3120 ADOLESCENT DEVELOPMENT, LEARNING, MOTIVATION AND ASSESSMENT II (3).** LEC. 3. Pr., FOUN 3110 and EDUC 3000 or (FOUN 3000 and RSED 3000). Admission to Teacher Education. Study of the adolescent development, learning, motivation, evaluation, and assessment concepts central to effective instruction.

**FOUN 7000 CULTURAL FOUNDATIONS OF EDUCATION (3).** LEC. 3. Advanced study of culture and its impact on the development and structure of education and schooling. Utilizing historical, philosophical, anthropological, and sociological perspectives, contemporary issues regarding the nature and practice of schooling will be examined.

**FOUN 7010 HISTORY OF AMERICAN EDUCATION (3).** LEC. 3. Examination of ideas, actors, and events which influenced the emergence of the formal school system, beginning with early American forms of education.

**FOUN 7020 SOCIAL AND CULTURAL DIVERSITY IN AMERICAN EDUCATION (3).** LEC. 3. Advanced study of education's response to cultural pluralism. The impact of religious, ethnic, social, and racial diversity on the structure of the American public school will be examined.

**FOUN 7030 MODERNITY, PHILOSOPHY AND THE CURRICULUM (3).** LEC. 3. Advanced study of the philosophical assumptions of curriculum development within the context of modernity.

## Electrical and Computer Engineering (ELEC)

**FOUN 7040 PHILOSOPHY AND EDUCATIONAL RESEARCH (3).** LEC. 3. Advanced philosophical study of educational research within the context of education's professional culture.

**FOUN 7900 DIRECTED STUDIES (1-6).** IND. SU. Special study in which the student's learning efforts are guided toward desired objectives. Course may be repeated for a maximum of 6 credit hours.

**FOUN 7970 SPECIAL TOPICS IN FOUNDATIONS OF EDUCATION (3-6).** LEC. Consideration of historical, philosophical, social, psychological, measurement, statistics or research issues, and their impact on education. Course may be repeated for a maximum of 6 credit hours.

**FOUN 8010 MODERN EDUCATION AND COMPARATIVE PERSPECTIVES (3).** LEC. 3. Advanced comparative study of selected contemporary educational issues within the American and international urban context.

**FOUN 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Individualized support and direction for students writing their dissertations. Courses may be repeated for a maximum of 10 hours. Course may be repeated with change in topic.

### Electrical and Computer Engineering (ELEC)

Dr. Mark Nelms - 844-1800

**ELEC 2110 ELECTRIC CIRCUIT ANALYSIS (4).** LEC. 3, LAB. 3. Pr., PHYS 1610 and (COMP 1200 or COMP 1210) and P/C, ENGR 1110 and P/C, MATH 2650. Basic laws and concepts; resistive circuits; first-order transient circuits; phasors and frequency response of circuits; RMS values and complex power.

**ELEC 2120 LINEAR SIGNALS AND SYSTEMS ANALYSIS (3).** LEC. 3. Pr., ELEC 2110 and MATH 2650. Time-domain and frequency-domain methods for modeling and analyzing continuous and discrete-data signals and systems.

**ELEC 2200 DIGITAL LOGIC CIRCUITS (3).** LEC. 3. Pr., COMP 1200 or COMP 1210. Electronic devices and digital circuits; binary numbers; Boolean algebra and switching functions; gates and flip-flops; combinational and sequential logic circuits; hierarchical design of digital systems; computer-aided design, tools for digital design, simulation, and testing.

**ELEC 2210 DIGITAL ELECTRONICS (4).** LEC. 3, LAB. 3. Pr., ELEC 2110 and ELEC 2200. History of electronics; semiconductors; biasing and operation of PN junction diodes; field-effect transistors and bipolar junction transistors; logic families and logic technologies; flip-flops and memory circuitry.

**ELEC 2220 COMPUTER SYSTEMS (3).** LEC. 3. Pr., ELEC 2210 or ELEC 2200. Computer hardware and software organization, processor programming models, data representation, assembly language programming, design of memory systems, input and output device interfacing and programming and multiprocessing.

**ELEC 3030 RF SYSTEMS LAB (1).** LAB. 3. Pr., ELEC 2210 Assembly, testing and analysis of an AM/FM radio. Integration of basic concepts of electronics, electromagnetics, and signals and systems.

**ELEC 3040 ELECTRICAL SYSTEM DESIGN LAB (1).** LAB. 3. Pr., ELEC 2220 and ELEC 3030 and P/C, ELEC 3500. Exploration and integration of electrical engineering concepts and professional practice issues through the design of a contemporary engineering system.

**ELEC 3050 EMBEDDED SYSTEM DESIGN LAB (1).** LAB. 3. Pr., ELEC 2210 and ELEC 2220. Development and integration of microcontroller-based hardware and software to design an embedded system to meet specified requirements. Issues related to professional practice.

**ELEC 3060 WIRELESS DESIGN LABORATORY (1).** LAB. 3. Pr., ELEC 3400. Laboratory experiments geared towards understanding the implementation and testing of components used in wireless communication systems.

**ELEC 3310 FUNDAMENTALS OF APPLIED ELECTROMAGNETICS (3).** LEC. 3. Pr., MATH 2660 and ELEC 2110. Transmission lines are studied as a bridge to understanding electromagnetic theory. Then, electric and magnetic fields are studied using vector algebra, culminating in Maxwell's equations.

**ELEC 3320 ELECTROMAGNETICS FOR WIRELESS COMMUNICATION (3).** LEC. 3. Pr., ELEC 3310. Maxwell's equations are used in the study of plane waves, guided waves, fiberoptics, electromagnetic compatibility and interference, antennas and radiation, and satellite communication systems.

**ELEC 3400 COMMUNICATION SYSTEMS (3).** LEC. 3. Pr., ELEC 3800. Pulse code modulation, line coding, information rate, equalization, amplitude modulation, angle modulation, noise in communication systems.

**ELEC 3500 CONTROL SYSTEMS (3).** LEC. 3. Pr., ELEC 2120. Analog and discrete transfer function models, system response specifications, control system characteristics, root locus analysis and design, frequency response analysis and design.

**ELEC 3600 ELECTRIC POWER ENGINEERING (3).** LEC. 3. Pr., ELEC 2110. Introduction to the basic concepts in electric power engineering.

**ELEC 3700 ANALOG ELECTRONICS (3).** LEC. 3. Pr., ELEC 2210 and ELEC 2120. Design and analysis of single-stage and multistage transistor amplifiers; biasing for integrated circuit design; small-signal modeling; operational amplifier circuits; IC design techniques; noise and RF amplifiers; D/A and A/D converters.

**ELEC 3800 RANDOM SIGNALS AND SYSTEMS (3).** LEC. 3. Pr., ELEC 2120. Analysis of random signals and noise, system reliability, responses of linear systems to random inputs, optimal filter design.

**ELEC 3810 FUNDAMENTALS OF ELECTRICAL ENGINEERING (3).** LEC. 3. Pr., P/C, MATH 2650. Electrical circuit analysis; electronic devices, digital systems, amplifier concepts, power devices and systems.

**ELEC 3820 INDUSTRIAL INSTRUMENTATION (3).** LEC. 2, LAB. 3. Pr., ELEC 3810. Principles of instrumentation. The detection and measurement of physical quantities with emphasis on sensors and signal processing. Programmable logic controllers.

**ELEC 4000 SENIOR DESIGN PROJECTS (3).** LEC. 3. Pr., ELEC 3040 or ELEC 3050 or ELEC 3060. A capstone design project which draws on the accumulated curricular experience. Particular project sections may have additional requisites.

**ELEC 4220 DIGITAL SYSTEM DESIGN (3).** LEC. 2, LAB. 3. Pr., ELEC 2210 and ELEC 2200. Hierarchical, modular design of digital systems, synchronous and asynchronous sequential circuit analysis and design, programmable logic devices and field programmable gate arrays, and circuit simulation for design verification and analysis.

**ELEC 4800 INSTRUMENTATION ENGINEERING (3).** LEC. 2, LAB. 3. Pr., ELEC 3040 or ELEC 3050. Study and application of sensors, instrumentation and computer technology to research and industrial process control.

**ELEC 4810 LONG TERM TECHNOLOGY DEVELOPMENT AND PROJECT MANAGEMENT (1-2).** LAB. Pr., ELEC 2120. Students participate in ongoing electrical, computer, or wireless engineering design projects and competitions while learning project management and organization strategies. May be repeated for up to three credit hours. Departmental approval.

**ELEC 4960 SPECIAL PROBLEMS (1-3).** IND. Departmental approval. Course may be repeated with change in topics.

**ELEC 4970 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5).** LEC. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

**ELEC 4980 SPECIAL PROJECTS IN ELECTRICAL ENGINEERING (1-3).** IND. Departmental approval. Course may be repeated with change in topics.

**ELEC 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ELEC 5100 WIRELESS COMMUNICATION SYSTEMS (3).** LEC. 3. Pr., ELEC 3400 and ELEC 3320. Introduction to mobile cellular radio and wireless personal communications, cellular concept, mobile radio propagation, modulation techniques, multiple access techniques, wireless systems and standards.

**ELEC 5110 WIRELESS NETWORKS (3).** LEC. 3. Pr., ELEC 3400. Introduction to wireless broadband, satellite communication, wireless local area networks, Bluetooth and Home RF standards and Internet protocol and wireless access.

**ELEC 5120 TELECOMMUNICATION NETWORKS (3).** LEC. 3. Pr., ELEC 3400. Plain Old Telephone System (POTS), Public Switching Telephone Network (PSTN), circuit switching, packet switching, frame relay, local subscriber loop, trunk, Signal System 7 (SS7), ISDN, DSL, ATM, SONET, wavelength division multiplexing (WDM), SMDS, voice over IP, network management.

**ELEC 5130 RF DEVICES AND CIRCUITS (3).** LEC. 3. Pr., ELEC 3700. Introduction to RF semiconductor devices and circuits targeted for wireless applications.

**ELEC 5150 INFORMATION SECURITY (3).** LEC. 3. Emerging protocols, standards and technologies of information security; design of information network security, firewall, virtual private networks and secured applications. Departmental approval.

**ELEC 5190 INTRODUCTION TO DIGITAL AND ANALOG IC DESIGN (3).** LEC. 3. Pr., ELEC 2210 and ELEC 3700. Digital IC design using the Verilog, analog and mixed signal IC design using industry standard tools; emphasis on front-end design skills.

**ELEC 5200 COMPUTER ARCHITECTURE AND DESIGN (3).** LEC. 3. Pr., ELEC 4200. Structural organization and hardware design of digital computers; register transfers; micro-operations, control units and timing; instruction set design; input/output devices, multiprocessors, automated hardware design aids.

**ELEC 5220 INFORMATION NETWORKS AND TECHNOLOGY (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. Architectures, protocols, standards and technologies of information networks; design and implementation of information networks based on requirements; applications of information networks for data, audio and video communications.

**ELEC 5230 PARALLEL PROCESSING (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. Hardware components of multiprocessor systems including processor, inter-connection, memory and control architectures; software elements of parallel processing.

**ELEC 5240 NEURAL NETWORKS (3).** LEC. 3. Pr., ELEC 2120. Principles, architectures, and technologies of neural networks; design and implementation of neural networks using electronics and optics; applications of neural networks.

**ELEC 5250 COMPUTER AIDED DESIGN OF DIGITAL CIRCUITS (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. Computer-automated design of digital logic circuits, using discrete gates, programmable logic devices, and standard cells; hardware description languages, circuit simulation for design verification and analysis, fault diagnosis and testing.

**ELEC 5260 EMBEDDED COMPUTING SYSTEMS (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. The design of systems containing embedded computers. Microcontroller technology, assembly language and C programming, input/output interfacing, data acquisition hardware, interrupts, and timing. Real-time operating systems and application programming. Embedded system application examples.

**ELEC 5270 LOW-POWER DESIGN OF ELECTRONIC CIRCUITS (3).** LEC. 3. Pr., ELEC 2210. Design of digital circuits and systems for reduced power consumption, power analysis algorithms, low-power MOS technologies, low-power design architectures for FPGAs, memory, and microprocessors, reduction of power in testing of circuits. Departmental approval.

**ELEC 5280 BUILT-IN-SELF-TEST (3).** LEC. 3. Pr., ELEC 2200 and ELEC 2210. Testing during product life-cycle, fault models and detection, design for testability, test pattern generation, output response analysis, concurrent fault detection, manufacturing and system use, built-in self-test approaches and applications.

**ELEC 5310 DESIGN OF ANTENNAS AND ANTENNA SYSTEMS (3).** LEC. 3. Pr., P/C, ELEC 3320. Application of electromagnetic and circuit concepts to the design of practical antennas and antenna systems.

**ELEC 5320 ELECTROMAGNETIC COMPATIBILITY (3).** LEC. 3. Pr., ELEC 3320 and ELEC 3700. Electromagnetic noise coupling, designing for electromagnetic compatibility (EMC), EMC regulation, noise sources, standard techniques for eliminating noise, circuit layout for reduced electromagnetic interference (EMI).

**ELEC 5340 MICROWAVE AND RF ENGINEERING (3).** LEC. 3. Pr., ELEC 3320 and ELEC 3700. Application of electromagnetic and electronic concepts to the design of practical microwave devices and circuits typically used in wireless communications.

**ELEC 5350 RADAR AND SONAR PRINCIPLES (3).** LEC. 3. Pr., ELEC 3320 and ELEC 3800. Study of the fundamentals of RADAR systems including detection of non-deterministic signals in noise, and introduction to the principles of wave acoustics with emphasis on SONAR systems.

**ELEC 5410 DIGITAL SIGNAL PROCESSING (3).** LEC. 3. Pr., ELEC 3800. Digital processing of signals, sampling difference equations, discrete-time Fourier transforms, discrete and fast Fourier transforms, digital filter design.

**ELEC 5430 DIGITAL IMAGE PROCESSING (3).** LEC. 3. Pr., ELEC 3400 and ELEC 3800. Digital image processing principles and applications such as enhancement, restoration and compression.

**ELEC 5530 MOBILE ROBOT DESIGN (3).** LEC. 3. Pr., ELEC 2210 and (ELEC 3040 or ELEC 3050). Fundamentals of mobile robot design, including motor control, sensor integration, path planning, navigation, and localization.

**ELEC 5610 POWER ELECTRONICS (3).** LEC. 3. Pr., ELEC 3700 and ELEC 3600. Power electronic circuits, components, and devices.

**ELEC 5620 POWER SYSTEM ANALYSIS (3).** LEC. 3. Pr., ELEC 3600. Power system modeling, power flow analysis, analysis of faulted power systems. Departmental approval.

**ELEC 5630 ELECTRIC MACHINES (3).** LEC. 3. Pr., ELEC 3600. Fundamentals of the electromagnetic-mechanical energy conversion process. Principles of operation, application, and control of ac and dc motors and generators. Departmental approval.

**ELEC 5650 POWER SYSTEM PROTECTION (3).** LEC. 3. Pr., ELEC 3600. Fault analysis using symmetrical components. Power switchgear, including switches, disconnects, fuses, relays and circuit breakers. Fundamentals of electric power system protection, including bus, transformer and line protection.

**ELEC 5700 SEMICONDUCTOR FUNDAMENTALS (3).** LEC. 3. Pr., ELEC 3700. Introduction to semiconductors: crystal structure, energy band theory, equilibrium electron and hole statistics, doping, generation and recombination processes, carrier drift and diffusion, transport equations.

**ELEC 5710 SEMICONDUCTOR DEVICES (3).** LEC. 3. Pr., ELEC 5700. Introduction to semiconductor devices: pn junctions, junction diode based devices, optoelectronic devices, bipolar transistors, field effect transistors.

**ELEC 5730 MICROELECTRONIC FABRICATION (3).** LEC. 2, LAB. 3. Pr., ELEC 2210. Introduction to monolithic integrated circuit technology. Bipolar and MOS processes and structures. Elements of layout, design, fabrication, and applications. Experiments in microelectronic technologies. Departmental approval.

**ELEC 5740 ELECTRONICS MANUFACTURING (3).** LEC. 2, LAB. 3. Pr., ELEC 3700. Materials and processes used to manufacture electronic products. Particular attention is given to substrate technology and electronics assembly. Departmental approval.

**ELEC 5750 INTRODUCTION TO PLASMA ENGINEERING (3).** LEC. 3. Pr., ELEC 3320. Electrical breakdown and discharges in gases, basic plasma theories, applications of plasmas, plasma processing for microelectronic fabrication. Departmental approval.

**ELEC 5760 SOLID STATE SENSORS (3).** LEC. 3. Pr., ELEC 3700. Theory, technology and design of micro-mechanical sensors, electrochemical micro sensors, photo detectors, and integrated smart sensors. Departmental approval.

**ELEC 5770 VLSI DESIGN (3).** LEC. 3. Pr., ELEC 2210 and ELEC 2220. Review of MOS transistor fundamentals, CMOS logic circuits; VLSI fabrication and design rules; clocking strategies and sequential design; performance estimation; memories and programmable arrays; standard cell design methodologies; computer aided design (CAD) tools.

**ELEC 5780 ANALOG CIRCUIT DESIGN (3).** LEC. 3. Pr., ELEC 3700. Circuit design techniques used for implementing analog integrated circuits in both CMOS and bipolar technologies. Departmental approval.

**ELEC 5810 COMPUTED IMAGING SYSTEMS (3).** LEC. 3. Pr., ELEC 2120. Introduction to computed imaging systems such as magnetic resonance imaging (MRI), computed tomography (CT), and synthetic aperture radar (SAR). Departmental approval.

**ELEC 5820 MEMS TECHNOLOGY (3).** LEC. 3. Introduction to Micro-Electro-Mechanical Systems (MEMS), the study of the materials and microfabrication processes used to fabricate MEMS devices, the principles of operation of MEMS devices, and an introduction to the different application areas of MEMS devices. Departmental approval.

**ELEC 5970 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5).** LEC. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

**ELEC 6100/6106 WIRELESS COMMUNICATION SYSTEMS (3).** LEC. 3. Pr., ELEC 3400 and ELEC 3320. Introduction to mobile cellular radio and wireless personal communications, cellular concept, mobile radio propagation, modulation techniques, multiple access techniques, wireless systems and standards.

**ELEC 6110/6116 WIRELESS NETWORKS (3).** LEC. 3. Pr., ELEC 3400. Introduction to wireless broadband, satellite communication, wireless local area networks, Bluetooth and Home RF standards and Internet protocol and wireless access.

**ELEC 6120/6126 TELECOMMUNICATION NETWORKS (3).** LEC. 3. Pr., ELEC 3400. Plain Old Telephone System (POTS), Public Switching Telephone Network (PSTN), circuit switching, packet switching, frame relay, local subscriber loop, trunk, Signal System 7 (SS7), ISDN, DSL, ATM, SONET, wavelength division multiplexing (WDM), SMDS, voice over IP, network management.

**ELEC 6130/6136 RF DEVICES AND CIRCUITS (3).** LEC. 3. Pr., ELEC 3700. Introduction to RF semiconductor devices and circuits targeted for wireless applications.

**ELEC 6150/6156 INFORMATION SECURITY (3).** LEC. 3. Emerging protocols, standards and technologies of information security; design of information network security, firewall, virtual private networks and secured applications. Departmental approval.

**ELEC 6190/6196 INTRODUCTION TO DIGITAL AND ANALOG IC DESIGN (3).** LEC. 3. Pr., ELEC 2210 and ELEC 3700. Introduction to digital and analog integrated circuit (IC) design with emphasis on front-end IC design skills. Digital IC designs using Verilog hardware description language. Analog IC designs using Cadence analog IC design tools. Gain hands-on experience through digital and analog IC design projects.

**ELEC 6200/6206 COMPUTER ARCHITECTURE AND DESIGN (3).** LEC. 3. Pr., ELEC 4200. Structural organization and hardware design of digital computers; register transfers; micro-operations, control units and timing; instruction set design; input/output devices, multiprocessors, automated hardware design aids.

**ELEC 6220/6226 INFORMATION NETWORKS AND TECHNOLOGY (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. Architectures, protocols, standards and technologies of information networks; design and implementation of information networks based on requirements; applications of information networks for data, audio and video communications.

**ELEC 6230/6236 PARALLEL PROCESSING (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. Hardware components of multiprocessor systems including processor, inter-connection, memory and control architectures; software elements of parallel processing.

**ELEC 6240/6246 NEURAL NETWORKS (3).** LEC. 3. Pr., ELEC 2120. Principles, architectures, and technologies of neural networks; design and implementation of neural networks using electronics and optics; applications of neural networks.

**ELEC 6250/6256 COMPUTER AIDED DESIGN OF DIGITAL CIRCUITS (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. Computer-automated design of digital logic circuits, using discrete gates, programmable logic devices, and standard cells; hardware description languages, circuit simulation for design verification and analysis, fault diagnosis and testing.

**ELEC 6260/6266 EMBEDDED COMPUTING SYSTEMS (3).** LEC. 3. Pr., ELEC 2220 or COMP 3350. The design of systems containing embedded computers. Microcontroller technology, assembly language and C programming, input/output interfacing, data acquisition hardware, interrupts, and timing. Real-time operating systems and application programming. Embedded system application examples.

**ELEC 6270/6276 LOW-POWER DESIGN OF ELECTRONIC CIRCUITS (3).** LEC. 3. Pr., ELEC 2210. Design of digital circuits and systems for reduced power



## Electrical and Computer Engineering (ELEC)

consumption, power analysis algorithms, low-power MOS technologies, low-power design architectures for FPGAs, memory, and microprocessors, reduction of power in testing of circuits. Departmental approval.

**ELEC 6280/6286 BUILT-IN-SELF-TEST (3).** LEC. 3. Pr., ELEC 2200 and ELEC 2210. Testing during product life-cycle, fault models and detection, design for testability, test pattern generation, output response analysis, concurrent fault detection, manufacturing and system use, built-in self-test approaches and applications.

**ELEC 6310/6316 DESIGN OF ANTENNAS AND ANTENNA SYSTEMS (3).** LEC. 3. Pr., P/C, ELEC 3320. Application of electromagnetic and circuit concepts to the design of practical antennas and antenna systems.

**ELEC 6320/6326 ELECTROMAGNETIC COMPATIBILITY (3).** LEC. 3. Pr., ELEC 3320 and ELEC 3700. Electromagnetic noise coupling, designing for electromagnetic compatibility (EMC), EMC regulation, noise sources, standard techniques for eliminating noise, circuit layout for reduced electromagnetic interference (EMI).

**ELEC 6340/6346 MICROWAVE AND RF ENGINEERING (3).** LEC. 3. Pr., ELEC 3320 and ELEC 3700. Application of electromagnetic and electronic concepts to the design of practical microwave devices and circuits typically used in wireless communications.

**ELEC 6350/6356 RADAR AND SONAR PRINCIPLES (3).** LEC. 3. Pr., ELEC 3320 and ELEC 3800. Study of the fundamentals of RADAR systems including detection of non-deterministic signals in noise, and introduction to the principles of wave acoustics with emphasis on SONAR systems.

**ELEC 6410/6416 DIGITAL SIGNAL PROCESSING (3).** LEC. 3. Pr., ELEC 3800. Digital processing of signals, sampling difference equations, discrete-time Fourier transforms, discrete and fast Fourier transforms, digital filter design.

**ELEC 6430/6436 DIGITAL IMAGE PROCESSING (3).** LEC. 3. Pr., ELEC 3400 and ELEC 3800. Digital image processing principles and applications such as enhancement, restoration and compression.

**ELEC 6530/6536 MOBILE ROBOT DESIGN (3).** LEC. 3. Pr., ELEC 2210 and (ELEC 3040 or ELEC 3050). Fundamentals of mobile robot design, including motor control, sensor integration, path planning, navigation, and localization.

**ELEC 6610/6616 POWER ELECTRONICS (3).** LEC. 3. Pr., ELEC 3600 and ELEC 3700. Power electronic circuits, components, and devices.

**ELEC 6620/6626 POWER SYSTEM ANALYSIS (3).** LEC. 3. Pr., ELEC 3600. Power system modeling, power flow analysis, analysis of faulted power systems. Departmental approval.

**ELEC 6630/6636 ELECTRIC MACHINES (3).** LEC. 3. Pr., ELEC 3600. Fundamentals of the electromagnetic-mechanical energy conversion process. Principles of operation, application, and control of ac and dc motors and generators. Departmental approval.

**ELEC 6650/6656 POWER SYSTEM PROTECTION (3).** LEC. 3. Pr., ELEC 3600. Fault analysis using symmetrical components. Power switchgear, including switches, disconnects, fuses, relays and circuit breakers. Fundamentals of electric power system protection, including bus, transformer and line protection.

**ELEC 6700/6706 SEMICONDUCTOR FUNDAMENTALS (3).** LEC. 3. Pr., ELEC 3700 Introduction to semiconductors: crystal structure, energy band theory, equilibrium electron and hole statistics, doping, generation and recombination processes, carrier drift and diffusion, transport equations.

**ELEC 6710/6716 SEMICONDUCTOR DEVICES (3).** LEC. 3. Pr., ELEC 5700 or ELEC 6700 or ELEC 6706. Introduction to semiconductor devices: pn junctions, junction diode based devices, optoelectronic devices, bipolar transistors, field effect transistors.

**ELEC 6730/6736 MICROELECTRONIC FABRICATION (3).** LEC. 2, LAB. 3. Pr., ELEC 2210. Introduction to monolithic integrated circuit technology. Bipolar and MOS processes and structures. Elements of layout, design, fabrication, and applications. Experiments in microelectronic technologies. Departmental approval.

**ELEC 6740/6746 ELECTRONICS MANUFACTURING (3).** LEC. 2, LAB. 3. Pr., ELEC 3700. Materials and processes used to manufacture electronic products. Particular attention is given to substrate technology and electronics assembly. Departmental approval.

**ELEC 6750/6756 INTRODUCTION TO PLASMA ENGINEERING (3).** LEC. 3. Pr., ELEC 3320. Electrical breakdown and discharges in gases, basic plasma theories, applications of plasmas, plasma processing for microelectronic fabrication. Departmental approval.

**ELEC 6760/6766 SOLID STATE SENSORS (3).** LEC. 3. Pr., ELEC 3700 Theory, technology and design of micro-mechanical sensors, electrochemical microsensors, photodetectors, and integrated smart sensors. Departmental approval.

**ELEC 6770/6776 VLSI DESIGN (3).** LEC. 3. Pr., ELEC 2210 and ELEC 2220. Review of MOS transistor fundamentals, CMOS logic circuits; VLSI fabrication and design rules; clocking strategies and sequential design; performance estimation; memories and programmable arrays; standard cell design methodologies; computer aided design (CAD) tools.

**ELEC 6780/6786 ANALOG CIRCUIT DESIGN (3).** LEC. 3. Pr., ELEC 3700. Circuit design techniques used for implementing analog integrated circuits in both CMOS and bipolar technologies. Departmental approval.

**ELEC 6810/6816 COMPUTED IMAGING SYSTEMS (3).** LEC. 3. Pr., ELEC 2120. Introduction to computed imaging systems such as magnetic resonance imaging (MRI), computed tomography (CT), and synthetic aperture radar (SAR). Departmental approval.

**ELEC 6820/6826 MEMS TECHNOLOGY (3).** LEC. 3. Introduction to Micro-Electro-Mechanical Systems (MEMS), the study of the materials and micro fabrication processes used to fabricate MEMS devices, the principles of operation of MEMS devices, and an introduction to the different application areas of MEMS devices. Departmental approval.

**ELEC 6970/6976 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5).** LEC. Study of a specialized area of electrical & computer engineering not covered by regularly offered courses. Course may be repeated with change in topics. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**ELEC 7190/7196 ADVANCED RFIC DESIGN FOR WIRELESS COMMUNICATIONS (3).** LEC. Pr., ELEC 5190 or ELEC 6190 or ELEC 6196. Wireless standards and multi-standard transceiver architectures, SiGe and CMOS RFIC designs for wireless transceiver building blocks, software defined radios, phase array radars, ultra-high speed data converters, and MIMO wireless transceivers.

**ELEC 7200/7206 ADVANCED TOPICS IN COMPUTER ARCHITECTURE (3).** LEC. 3. Pr., ELEC 5200 or ELEC 6200 or ELEC 6206. Current topics in the field of modern computer architecture and design, with emphasis varying according to current research interests. Course may be repeated with change in topic. Course may be repeated for a maximum of 6 credit hours.

**ELEC 7210/7216 FAULT TOLERANT COMPUTING (3).** LEC. 3. Pr., ELEC 5200 or ELEC 6200 or ELEC 6206. Architecture and design of fault tolerant computer systems using protective redundancy, estimation of the reliability and availability of fault tolerant systems, error recovery, and fault diagnosis.

**ELEC 7220/7226 ADVANCED INFORMATION NETWORKS AND TECHNOLOGY (3).** LEC. 3. Pr., ELEC 5220 or ELEC 6220 or ELEC 6226. Emerging architectures, protocols, standards and technologies of information networks; design of data, video and audio information networks; emerging multimedia applications of information networks.

**ELEC 7230/7236 HIGH PERFORMANCE COMPUTING (3).** LEC. 3. Pr., ELEC 5230 or ELEC 6230 or ELEC 6236. High performance computing systems; design and implementation issues of cluster architectures; reconfigurable architectures; parallelization of hard problems, performance modeling and analysis.

**ELEC 7250/7256 VLSI TESTING (3).** LEC. 3. Pr., ELEC 5770 or ELEC 6770 or ELEC 6776. Exponential nature of the test problem, fault models, test generation algorithms, test generation for sequential circuits, fault simulation, testability measures, fault coverage, yield and defect levels, design-for-testability approaches.

**ELEC 7310/7316 ADVANCED ELECTRODYNAMICS I (3).** LEC. 3. Review of basic electromagnetics. Electromagnetic wave propagation in infinite and bounded media. Equivalence Principle, Uniqueness Theorem, Reciprocity, Green's functions and Plane wave functions. Departmental approval.

**ELEC 7320/7326 ADVANCED ELECTRODYNAMICS II (3).** LEC. 3. Pr., ELEC 7310 or ELEC 7316. Cylindrical wave functions. Spherical wave functions. Scattering by cylinders and spheres. Perturbational and variational techniques.

**ELEC 7330 ELECTROMAGNETIC MEASUREMENTS (3).** LEC. 1, LAB. 6. Pr., (ELEC 5310 or ELEC 6310 or ELEC 6316) and (ELEC 5340 or ELEC 6340 or ELEC 6346) and (ELEC 5350 or ELEC 6350 or ELEC 6356). Electromagnetic theory is supported by lab experiments, including microstrip circuit characterization using a vector network analyzer, antenna and radar cross section measurements in an anechoic chamber, and optical measurements using an optical spectrometer.

**ELEC 7340/7346 COMPUTATIONAL ELECTROMAGNETICS I (3).** LEC. 3. Pr., ELEC 7310 or ELEC 7316. Solution of electromagnetic scattering, radiation, and coupling problems using method of moments, finite-difference, finite-element, transmission-line matrix and other advanced computational methods.

**ELEC 7350/7356 COMPUTATIONAL ELECTROMAGNETICS II (3).** LEC. 3. Pr., ELEC 7310 or ELEC 7316. Solutions of electromagnetic scattering, radiation, and coupling problems using a variety of common asymptotic techniques.

**ELEC 7410/7416 STOCHASTIC SIGNAL AND SYSTEM ANALYSIS (3).** LEC. 3. Applications of probability, random variables and stochastic processes in electrical engineering. Departmental approval.

**ELEC 7420/7426 ADAPTIVE SIGNAL PROCESSING (3).** LEC. 3. Coreq., ELEC 7410. Least mean square and recursive least square algorithms; adaptive FIR and IIR filters, lattice filters, Kalman filters; adaptive system identification and its application in communications and control.

**ELEC 7430/7436 ADVANCED COMMUNICATION THEORY (3).** LEC. 3. Pr., ELEC 3400. Principles of modern communication systems. Elements of information theory, source encoding, efficient signaling with coded waveforms, convolutional codes; carrier recovery and synchronization under AGN channel; adaptive equalization; maximum likelihood estimation, Viterbi algorithm.

**ELEC 7440/7446 WIRELESS COMMUNICATION THEORY (3).** LEC. 3. Pr., ELEC 3400 or ELEC 7410. The basic of design, analysis and performance limits of wireless communication systems.

## Electrical and Computer Engineering (ELEC)

**ELEC 7500/7506 STATE-VARIABLE ANALYSIS OF SYSTEMS (3).** LEC. 3. Matrices and linear spaces; state variable for linear continuous and discrete systems; applications in analysis and design of control systems. Departmental approval.

**ELEC 7510/7516 OPTIMAL AND STOCHASTIC CONTROL SYSTEMS (3).** LEC. 3. Theory of extrema, calculus of variations, LQR/LQG theory, optimal control, observability, controllability, sensitivity, observers and state estimators, pole assignments. Departmental approval.

**ELEC 7520/7526 ADVANCED DISCRETE CONTROL (3).** LEC. 3. Discrete state modeling. Pole assignment and estimation. Multi-rate sampled systems. Non-synchronous sampled systems. MIMO. Departmental approval.

**ELEC 7550/7556 FUZZY LOGIC CONTROL SYSTEMS (3).** LEC. 3. Pr., ELEC 7500 or ELEC 7506. Fuzzy logic as information representation and decision making paradigm; stability analysis, system identification and estimation, adaptive fuzzy control, supervisory control, gain scheduling.

**ELEC 7560/7566 NONLINEAR SYSTEMS AND CONTROL (3).** LEC. 3. Pr., ELEC 7500 or ELEC 7506. Principles of nonlinear system modeling and analysis; nonlinear control systems design; nonlinear system state estimation. Departmental approval.

**ELEC 7610/7616 POWER SYSTEM DYNAMICS AND STABILITY (3).** LEC. 3. Pr., (ELEC 5620 or ELEC 6620 or ELEC 6626), and (ELEC 5650 or ELEC 6650 or ELEC 6656) Dynamic models of power systems and analysis of power system stability. Departmental approval.

**ELEC 7620/7626 POWER SYSTEM OPERATION (3).** LEC. 3. Pr., ELEC 5620 or ELEC 6620 or ELEC 6626. Unit commitment, power system security, state estimation, power system control centers and real-time applications. Departmental approval.

**ELEC 7630/7636 ADVANCED ELECTRIC MACHINES (3).** LEC. 3. Pr., ELEC 5630 or ELEC 6630 or ELEC 6636. Advanced machine modeling, including Kron's generalized machine theory, Park's transformation, and generalized coordinate transformations. Derivation of traditional machine models. Machine non-linearities, including finite element analysis. Departmental approval.

**ELEC 7640/7646 POWER SYSTEM TRANSIENTS (3).** LEC. 3. Pr., ELEC 5620 or ELEC 6620 or ELEC 6626. Transients in electric power systems, including lightning and switching phenomena. Traveling waves on power transmission lines, BIL, BSL, line insulation. System modeling. Departmental approval.

**ELEC 7710/7716 THE FIELD-EFFECT TRANSISTOR (3).** LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of the modern field-effect transistor: the state-of-the-art, the MOS capacitor, the 4-terminal MOSFET, short and narrow-channel effects, reliability, scaling theory, modeling, silicon-on-insulator technology, heterostructure devices.

**ELEC 7720/7726 THE BIPOLAR TRANSISTOR (3).** LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of the modern bipolar junction transistor; the state-of-the-art, terminal currents, solutions for arbitrary doping profiles, the polysilicon emitter contact, high-injector effects, dynamic operation, device models, heterojunction bipolar transistors.

**ELEC 7730/7736 ADVANCED PLASMA PROCESSING FOR MICROELECTRONIC FABRICATION (3).** LEC. 3. Pr., ELEC 5750 or ELEC 6750 or ELEC 6756. Plasma reactor design and process optimization, plasma-assisted etching and deposition processes, plasma-assisted oxidation and surface modification processes, plasma polymerization, plasma-induced damages to semiconductor devices. Departmental approval.

**ELEC 7740/7746 ELECTRONIC PACKAGING (3).** LEC. 3. Pr., ELEC 5740 or ELEC 6740 or ELEC 6746. Design issues in the packaging of electronics. Emphasis is placed on physical design, electrical performance, thermal characteristics and mechanical stress-induced failures. Departmental approval.

**ELEC 7750/7756 LOW TEMPERATURE ELECTRONICS (3).** LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of electronic devices operating at reduced temperatures: the case for cryogenic computers, semiconductor physics at low temperatures, carrier freeze-out, cooled CMOS technology, cooled bipolar technology, superconductors, packaging.

**ELEC 7760/7766 SILICON-BASED HETEROSTRUCTURE DEVICES AND CIRCUITS (3).** LEC. 3. Pr., ELEC 5700 or ELEC 6700 or ELEC 6706. Bandgap engineering, strained SiGe and Si, SiGe BiCMOS technology, noise, linearity, circuits applications. Departmental approval.

**ELEC 7770/7776 ADVANCED VLSI DESIGN (3).** LEC. 3. Pr., ELEC 5770 or ELEC 6770 or ELEC 6776. Review of CMOS logic circuits; impact of fabrication issues on design; high speed switching circuits; high performance memory structures; advanced clocking strategies and clock distribution; performance optimization; deep submicron design issues; ASIC design flow: logic synthesis, placement and routing; design verification; low power design. Departmental approval.

**ELEC 7780/7786 RF MICROELECTRONICS (3).** LEC. 3. Pr., ELEC 5780 or ELEC 6780 or ELEC 6786. Techniques used in the design of monolithic integrated circuits for RF applications. Departmental approval.

**ELEC 7800/7806 ADVANCED COMPUTATIONAL TECHNIQUES FOR ELECTRICAL ENGINEERING (3).** LEC. 3. Pr., ELEC 2120 and ELEC 3320. Introduction to high level programming techniques in electrical engineering appli-

cations; topics include linear systems analysis, system identification, nonlinear dynamic systems, and electromagnetic applications.

**ELEC 7810/7816 APPLIED COMPUTATION IN SIGNALS AND SYSTEMS (3).** LEC. 3. Computational solutions to numerous problems in electrical engineering, especially in the fields of control, electromagnetics, and signal processing.

**ELEC 7900 INDEPENDENT STUDY IN ELECTRICAL ENGINEERING (1-3).** IND. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ELEC 7950 ELECTRICAL ENGINEERING SEMINAR (1-10).** SEM. SU. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**ELEC 7970/7976 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5).** LEC. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**ELEC 7980 MASTER OF ELECTRICAL ENGINEERING PROJECT (1-6).** IND. SU. Formulation and implementation of an engineering design project. Project culminates in both a written report and an oral presentation to the student's advisory committee. Departmental approval. Course may be repeated with change in topics.

**ELEC 7990 RESEARCH AND THESIS (1-6).** MST. Course may be repeated for a maximum of 6 credit hours.

**ELEC 8120/8126 PRINCIPLES OF NETWORK PERFORMANCE ANALYSIS (3).** LEC. 3. Pr., (ELEC 5120 or ELEC 6120 or ELEC 6126) and ELEC 7410. Data network performance analysis, queueing systems, admission control, network traffic modeling, network calculus, flow and congestion control, wireless network analysis, and network simulation.

**ELEC 8310 ADVANCED TOPICS IN ELECTROMAGNETICS (3).** LEC. 3. Pr., ELEC 7320 or ELEC 7326. Continued development of analytical and numerical applications of Maxwell's equations in arbitrary media in both the frequency and time domains. Includes individual and group projects.

**ELEC 8410 SPECTRAL ESTIMATION AND SYSTEM IDENTIFICATION (3).** LEC. 3. Pr., ELEC 7410 or ELEC 7416. Elements of parameter estimation theory; Nonparametric spectral estimation: period gram and spectral windows; Parametric approaches; applications; higher-order spectral analysis; input-output system identification.

**ELEC 8420 DETECTION AND ESTIMATION THEORY (3).** LEC. 3. Pr., ELEC 7410 or ELEC 7416. Decision theory concepts. Detection of deterministic and random signals in noise; parameter estimation. Bayesian and maximum likelihood approaches, non-random and random parameter estimation; signal estimation.

**ELEC 8510 ROBUST AND OPTIMAL CONTROL (3).** LEC. 3. Pr., ELEC 7510 or ELEC 7516. Performance specification, performance limitations, model uncertainty, linear fractional transformations, structured singular value, parameterizations of stabilizing controllers, H2 and H-infinity optimal control, loop shaping. Departmental approval.

**ELEC 8560 ADAPTIVE CONTROL (3).** LEC. 3. Pr., ELEC 7500 or ELEC 7506. Theory and application of adaptive control systems. Real-time parameter estimation, self-tuning regulators, model-reference adaptive systems, stability, auto-tuning and gain scheduling controllers. Departmental approval.

**ELEC 8710 ADVANCED TOPICS IN SEMICONDUCTOR DEVICES (3).** LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of selected topics in semiconductor devices. Course may be repeated for a maximum of 6 credit hours.

**ELEC 8780 CONTEMPORARY TOPICS IN ELECTRICAL CIRCUIT DESIGN (3).** LEC. 3. Pr., ELEC 5780 or ELEC 6780 or ELEC 6786. Contemporary topics in electronic circuit design such as Delta-Sigma A/D and D/A conversion, switched capacitor circuitry, continuous time and discrete time filter design, communications electronics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ELEC 8900 INDEPENDENT STUDY IN ELECTRICAL ENGINEERING (1-3).** IND. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ELEC 8970 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5).** LEC. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**ELEC 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated for a maximum of 20 credit hours.

## English (ENGL)

Dr. James Emmett Ryan - 844-4620

**ENGL 1100 ENGLISH COMPOSITION I (3).** LEC. 3. English Composition Core. Intensive study of and practice in effective expository and argumentative writing. May not be taken concurrently.

**ENGL 1107 HONORS WRITING SEMINAR I (3).** LEC. 3. Pr., Honors College. English Composition Core. Topics in writing for students in Honors.

**ENGL 1120 ENGLISH COMPOSITION II (3).** LEC. 3. Pr., ENGL 1100 or ENGL 1107. English Composition core. Emphasis on research. May not be taken concurrently.

**ENGL 1127 HONORS WRITING SEMINAR II (3).** LEC. 3. Pr., Honors College. (ENGL 1100 or ENGL 1107). English Composition core. Emphasis on research.

## English (ENGL)

**ENGL 1800 ORAL PROFICIENCY IN ENGLISH FOR INTERNATIONAL STUDENTS (3).** LEC. 3. SU. Skills that international students need to communicate orally in English.

**ENGL 1820 CLASSROOM COMMUNICATION SKILLS FOR INTERNATIONAL TEACHING ASSISTANTS (3).** LEC. 3. SU. Oral language skills required for effective classroom communication.

**ENGL 1830 WRITING PROFICIENCY IN ENGLISH FOR INTERNATIONAL STUDENTS (3).** LEC. 3. SU. Skills that international students need to undertake successful research writing in English.

**ENGL 2000 INTRODUCTION TO CREATIVE WRITING (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. An introduction to the genres of creative writing.

**ENGL 2010 INTRODUCTION TO PROFESSIONAL WRITING (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. An introduction to the disciplines of professional writing.

**ENGL 2200 WORLD LITERATURE I (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Culturally diverse readings in world literature from the ancient period to c. 1600.

**ENGL 2207 HONORS WORLD LITERATURE I (3).** LEC. 3. Pr., Honors College. (ENGL 1120 or ENGL 1127). Culturally diverse readings in world literature from the ancient period to c. 1600.

**ENGL 2210 WORLD LITERATURE II (3).** LEC. 3. Pr., ENGL 2200 or ENGL 2207. Culturally diverse readings in world literature from c. 1600 to the present.

**ENGL 2217 HONORS WORLD LITERATURE II (3).** LEC. 3. Pr., Honors College. (ENGL 2200 or ENGL 2207). Culturally diverse readings in world literature from c. 1600 to the present.

**ENGL 2230 SURVEY OF BRITISH LITERATURE I (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of British Literature from its beginnings to the end of the eighteenth century.

**ENGL 2240 SURVEY OF BRITISH LITERATURE II (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of British Literature from the end of the eighteenth-century to the present.

**ENGL 2250 SURVEY OF AMERICAN LITERATURE I (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of American Literature from its beginnings to 1865.

**ENGL 2260 SURVEY OF AMERICAN LITERATURE II (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of American Literature from 1865 to the present.

**ENGL 3040 TECHNICAL WRITING (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Writing in engineering, scientific, and technical fields. Credit will not be given for both ENGL 3040 and ENGL 3080.

**ENGL 3080 BUSINESS WRITING (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Writing in business, management, or governmental service fields. Credit will not be given for ENGL 3080 and ENGL 3040.

**ENGL 3110 SURVEY OF LINGUISTICS (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. The structure of language, especially American English sounds, words, and syntax, along with study in such areas as dialects and language change.

**ENGL 3120 SURVEY OF RHETORIC (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A survey of rhetoric from Ancient Greece to the present.

**ENGL 3130 SURVEY OF CRITICAL THEORY (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Introduction to critical methods and theoretical approaches to the study of literature.

**ENGL 3360 THE BIBLE FOR STUDENTS OF LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260 Biblical backgrounds to English and American literature; the Bible as literature.

**ENGL 3710 SURVEY OF AFRICAN-AMERICAN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260 African-American literature from its beginnings to the present.

**ENGL 3850 STUDY IN LONDON (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Study abroad in London providing an introduction to London's and England's literature and culture.

**ENGL 3870 WORLD ENGLISH LITERATURES (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Non-British and non-American literature written in English.

**ENGL 4000 ADVANCED COMPOSITION (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Theory and practice of expository and argumentative writing.

**ENGL 4010 TOPICS IN WRITING (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260 An in depth study of a specific topic of writing. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4140 LANGUAGE VARIATION (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260 Social, regional, and contextual forces that contribute to dialect diversity.

**ENGL 4150 TOPICS IN LANGUAGE STUDY (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Concentrated

investigation of varying topics in linguistics or rhetoric. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4160 TECHNOLOGY, LITERACY AND CULTURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Connections between technology, literacy, and culture. Includes instruction in advanced computer applications. Or computer competency test or Departmental approval.

**ENGL 4180 RHETORICAL THEORY AND PRACTICE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Advanced study into different topics in rhetorical theory and practice.

**ENGL 4200 FICTION WRITING I (3).** LEC. 3. Pr., ENGL 2000. Introduction to the craft of fiction writing; reading, studying, and writing short stories.

**ENGL 4210 FICTION WRITING II (3).** LEC. 3. Pr., (ENGL 1120 or ENGL 1127) and ENGL 4200. Advanced fiction writing.

**ENGL 4220 POETRY WRITING I (3).** LEC. 3. Pr., ENGL 2000. Introduction to the craft of poetry writing; reading, studying, and writing poems.

**ENGL 4230 POETRY WRITING II (3).** LEC. 3. Pr., ENGL 4220 and (ENGL 1120 or ENGL 1127). Advanced poetry writing.

**ENGL 4240 SPECIAL PROJECT IN CREATIVE WRITING (3).** LEC. 3. Pr., ENGL 4200 or ENGL 4220. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4300 MEDIEVAL LIT IN TRANSLATION (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British and Continental medieval literature.

**ENGL 4310 RENAISSANCE ENGLISH LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. English literature from 1485-1660. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4320 RESTORATION AND EIGHTEENTH-CENTURY LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British Literature, 1660-1800. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4330 AGE OF REVOLUTION IN BRITISH LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260 British Literature 1770-1830.

**ENGL 4340 NINETEENTH-CENTURY BRITISH LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British Literature 1830-1910. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4350 TWENTIETH-CENTURY BRITISH LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British Literature 1910-1980. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4360 CONTEMPORARY BRITISH LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British literature from 1980 to the present. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4370 IRISH LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Periods, movements, or major figures of the literature of Ireland.

**ENGL 4400 EARLY AMERICAN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature from its beginnings to 1800.

**ENGL 4410 NINETEENTH-CENTURY AMERICAN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature 1800-1910. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4420 TWENTIETH-CENTURY AMERICAN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature 1910-1980. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4430 CONTEMPORARY AMERICAN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature since 1980. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4440 SOUTHERN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Literature of the American South.

**ENGL 4450 TOPICS IN AFRICAN AMERICAN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Concentrated investigation of varying topics in African- American literature and culture.

**ENGL 4500 STUDIES IN POETRY (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study in one or more kinds of poetry.

## English (ENGL)

**ENGL 4510 EIGHTEENTH-CENTURY NOVEL (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study of novels written in the eighteenth century.

**ENGL 4520 NINETEENTH-CENTURY NOVEL (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study of novels produced in the nineteenth century.

**ENGL 4530 TWENTIETH-CENTURY FICTION (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study of fiction produced in the twentieth century.

**ENGL 4540 STUDIES IN DRAMA (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study in one or more period or kind of drama.

**ENGL 4550 STUDIES IN FILM AND LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Non-British and non-American literature written in English or studied in translation. Examining the interconnections between film and literature.

**ENGL 4560 STUDIES IN CRITICAL THEORY (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. An advanced study in one or more theoretical approaches to literature.

**ENGL 4570 STUDIES IN COMPARATIVE LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Non-British and non-American Literature written in English or studied in translation.

**ENGL 4600 CHAUCER (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. The major works of Chaucer in Middle English.

**ENGL 4610 SHAKESPEARE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Shakespeare's works, career, and culture. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4620 MILTON (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Milton's principal poems, especially "Paradise Lost," with some attention to his prose.

**ENGL 4630 BRITISH AUTHOR(S) (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Study of the literary career of one or more British authors. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4640 AMERICAN AUTHOR(S) (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Study of the literary career of one or more American authors. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4700 TOPICS IN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 and ENGL 2260. Concentrated investigation of varying topics in literature.

**ENGL 4710 TOPICS IN GENDER AND LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Examination of varying topics related to the intersection between literature and gender. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4720 TOPICS IN MINORITY VOICES IN LITERATURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Literature of one or more minority group(s). Course may be repeated for a maximum of 6 credit hours.

**ENGL 4730 TOPICS IN POPULAR CULTURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. One or more topics in popular culture. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4740 ENVIRONMENT, LITERATURE, AND CULTURE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2210 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. How literature and culture respond to the environment.

**ENGL 4750 TOPICS IN MYTHOLOGY AND FOLKLORE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study in one or more topics of mythology or folklore. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4800 SEMINAR IN LITERATURE (3).** LEC. 3. Pr., ENGL 3130. Research seminar in literature. Senior standing.

**ENGL 4810 CAPSTONE IN PROFESSIONAL WRITING (3).** LEC. 3. Pr., ENGL 2010. An advanced course in developing complex professional writing projects.

**ENGL 4920 INTERNSHIP IN ENGLISH STUDIES (3).** IND. SU. Pr., ENGL 1120 or ENGL 1127. Supervised experience in applying reading, writing and research skills to the workplace. Departmental approval.

**ENGL 4960 SPECIAL PROBLEMS IN ENGLISH (3).** IND. 3. Pr., 3 GPA. ENGL 4000-4999. Junior standing; 3.0 overall GPA; departmental approval. Readings in a specific area of literature or language. Course may be repeated for a maximum of 6 credit hours.

**ENGL 4967 HONORS SPECIAL PROBLEMS IN ENGLISH (3).** IND. 3. Pr., Honors College. (ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260). Individual reading programs determined by the instructor and student.

**ENGL 4997 HONORS THESIS (3).** AAB/IND. Pr., Honors College. (ENGL 1120 or ENGL 1127) Course may be repeated for a maximum of 6 credit hours.

**ENGL 5000 TECHNICAL AND PROFESSIONAL EDITING (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010. A technical writing, business writing, or advanced composition course Departmental approval.

**ENGL 5010 DOCUMENT DESIGN IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010 A technical writing, business writing, or advanced composition course Departmental approval.

**ENGL 5030 TOPICS IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010 A technical writing, business writing, or advanced composition course Departmental approval.

**ENGL 5410 HISTORY OF THE ENGLISH LANGUAGE (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. The chronological development of the English language.

**ENGL 5840 APPROACHES TO ENGLISH GRAMMAR (3).** LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Examination of several grammatical theories, with emphasis on English syntax. Junior standing.

**ENGL 6000 TECHNICAL AND PROFESSIONAL EDITING (3).** LEC. 3.

**ENGL 6010 DOCUMENT DESIGN IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** LEC. 3.

**ENGL 6030 TOPICS IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** LEC. 3. Course may be repeated for a maximum of 6 credit hours.

**ENGL 6410 HISTORY OF THE ENGLISH LANGUAGE (3).** LEC. 3. The chronological development of the English language.

**ENGL 6840 APPROACHES TO ENGLISH GRAMMAR (3).** LEC. 3. Examination of several grammatical theories, with emphasis on English syntax.

**ENGL 6910 PRACTICUM IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** PRA. 3. Supervised experience in editing technical, business, and scientific documents. Departmental approval.

**ENGL 7010 TECHNICAL AND PROFESSIONAL COMMUNICATION: ISSUES AND APPROACHES (3).** LEC. 3. Introduction to the history, practice, and profession of technical and professional communication.

**ENGL 7020 THE PEDAGOGY OF TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** LEC. 3. Methods, practices, and theories of technical and professional communication for prospective teachers.

**ENGL 7030 STUDIES IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3).** LEC. 3. Extensive study of selected types of research and writing for special purposes and novel situations. Course may be repeated for a maximum of 6 credit hours.

**ENGL 7040 ENGLISH COMPOSITION: ISSUES AND APPROACHES (3).** LEC. 3. Theory, research, and practice in English composition.

**ENGL 7050 STUDIES IN COMPOSITION (3).** LEC. 3. The advanced study of an approach or an issue in composition studies. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7130 FICTION WRITING (3).** LEC. 3. Workshop in the craft and writing of fiction. Course may be repeated for a maximum of 6 credit hours.

**ENGL 7140 POETRY WRITING (3).** LEC. 3. Workshop in the craft and writing of poetry. Course may be repeated for a maximum of 6 credit hours.

**ENGL 7150 STUDIES IN MEDIEVAL LITERATURE (3).** LEC. 3. Major works and genres in Middle English and related literary traditions. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7160 EARLY MODERN STUDIES (3).** LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7170 EIGHTEENTH-CENTURY STUDIES (3).** LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7180 NINETEENTH-CENTURY STUDIES (3).** LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7190 AMERICAN STUDIES (3).** LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7200 LITERARY MODERNISMS (3).** LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7210 CONTEMPORARY LITERATURE AND CULTURE (3).** LEC. 3. Major literary movements, authors, and /or genres. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7280 STUDIES IN LINGUISTICS (3).** LEC. 3. A topic or topics in English linguistics, e.g., historical syntax, dialectology, phonology. Course may be repeated for a maximum of 9 credit hours.

## Entomology (ENTM)

**ENGL 7300 RHETORIC THEORY AND PRACTICE (3).** LEC. 3. Issues and developments in rhetorical theory and analysis, with special attention to the rhetoric of written texts. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7570 MAJOR BRITISH AUTHORS (3).** LEC. 3. One or more major authors or a single work by a major author. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7770 AFRICAN-AMERICAN LITERATURE (3).** LEC. 3. Study of African-American literature and literary theories of ethnicity and race. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7780 STUDIES IN RACE, GENDER, AND SEXUALITY (3).** LEC. 3. Focused topics in literature and theory of ethnicity, sexuality, gender, race, class, or disability. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7790 LITERARY THEORY: ISSUES AND APPROACHES (3).** LEC. 3. Overview of significant theoretical issues, approaches, and conversations in literary and cultural theory, historical and/or contemporary.

**ENGL 7800 STUDIES IN LITERARY THEORY (3).** LEC. 3. Close study of particular theoretical approaches to literary study (e.g., cultural studies, postmodernism, textual criticism, anthropological approaches, etc.) Course may be repeated for a maximum of 6 credit hours.

**ENGL 7810 STUDIES IN COMPARATIVE LITERATURE (3).** LEC. 3. Comparative study of authors, genres, or issues from two or more cultures or critical perspectives. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7830 MAJORS AUTHOR(S) (3).** LEC. 3. One or more major authors or a single work by a major author. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7850 STUDIES IN GENRE (3).** LEC. 3. Study of one or more genres across literary periods. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7870 SPECIAL TOPICS IN ENGLISH STUDIES (3).** LEC. 3. Special problems, topics, and materials in English studies not covered in other existing courses. Course may be repeated for a maximum of 9 credit hours.

**ENGL 7930 DIRECTED INDIVIDUAL STUDY (1-3).** IND. Available on a limited basis for qualified students; requires advance permission of the department graduate committee. Credits are to be arranged. Course may be repeated for a maximum of 6 credit hours.

**ENGL 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated for a maximum of 20 credit hours.

**ENGL 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated for a maximum of 20 credit hours.

## Engineering, Interdepartmental (ENGR)

Dr. Joe Morgan - 844-2866

**ENGR 1100 ENGINEERING ORIENTATION (0).** LEC. 1. SU. Introduction to the College of Engineering and its resources, exploration of engineering careers, orientation to campus resources and facilities, and assistance with academics and transition to college.

**ENGR 1110 INTRODUCTION TO ENGINEERING (2).** LEC. 1, LAB. 3. Introduction to engineering design, engineering teams, graphical presentation, technical writing, oral presentation.

**ENGR 1200 GRAPHICAL COMMUNICATION AND DESIGN (3).** LEC. 2, LAB. 3. Pr., P/C, COMP 1200 Graphical concepts and projective geometry relating to special visualization and communication in design, including technical sketching, instrument drawing and computer-aided drafting and design.

**ENGR 2010 THERMODYNAMICS (3).** LEC. 2, LAB. 3. Pr., (CHEM 1030 or CHEM 1110 or CHEM 1117) and (MATH 1620 or MATH 1627 or MATH 1720) and (P/C, PHYS 1600 or P/C, PHYS 1607). Principles and applications of thermodynamics to engineering problems. Laboratory includes multi-disciplinary team projects on thermodynamics applications and fundamentals of engineering thermodynamics.

**ENGR 2050/2054/2053 STATICS (3).** LEC. 3. Pr., PHYS 1600 or PHYS 1607 and P/C, MATH 2630. Principles of vectors, forces, moments, free body diagrams, force systems, 2-D and 3-D equilibrium, friction, geometric properties of plane areas.

**ENGR 2070 MECHANICS OF MATERIALS (3).** LEC. 3. Pr., ENGR 2050 and P/C, MATH 2650. Principles of stress and strain; stress-strain relationships; uniaxially loaded members; torsion; bending; beam shear; shear, moment and thrust diagrams; transformed sections; column buckling.

**ENGR 2100 FUNDAMENTALS OF ENGINEERING MECHANICS (3).** LEC. 3. Pr., P/C, PHYS 1600 or P/C, PHYS 1607. Basic principles of two-dimensional force systems, free body diagrams, concepts of stress and strain, centroids of composite areas, kinematics and kinetics of particles and rigid bodies.

**ENGR 2200 INTRODUCTION TO THERMODYNAMICS, FLUIDS AND HEAT TRANSFER (3).** LEC. 3. Pr., CHEM 1030 and PHYS 1610 and P/C, MATH 2650. Principles and applications of thermodynamics, fluids and heat transfer.

**ENGR 2350 DYNAMICS (3).** LEC. 3. Pr., ENGR 2050. Fundamental principles of dynamics including kinematics and kinetics of particles, kinematics and kinetics of

rigid bodies, mass moments of inertia, three-dimensional dynamics of rigid bodies, and simple harmonic motion.

**ENGR 3510 INTRODUCTION TO BUSINESS AND ENGINEERING (3).** LEC. 3. Pr., ACCT 2110 or ACCT 2117. Principles of business and engineering management processes. Admission to Business-Engineering- Technology Program.

**ENGR 3520 INTEGRATING BUSINESS AND ENGINEERING THEORY WITH PRACTICE (3).** LEC. 2, LAB. 3. Coreq., BUSI 3530. Case study problems from business and engineering practice.

**ENGR 4957 ENGINEERING HONORS SEMINAR (3).** SEM. 3. Pr., Honors College. Topics of interest to honors students and engineering faculty. Interaction with successful engineering alumni. Departmental approval.

**ENGR 4970 PRODUCT/PROCESS DESIGN AND DEVELOPMENT I (1).** LAB. 3. Coreq., BUSI 4540. Processes to develop and present design proposal for cooperating industry. Credit will not be given for both BUSI 4970 and ENGR 4970.

**ENGR 4980 PRODUCT/PROCESS DESIGN AND DEVELOPMENT II (3).** LEC. 1, LAB. 6. Pr., BUSI 4970 or ENGR 4970. Cross-functional team design projects sponsoring industry.

## Entomology (ENTM)

Dr. Wayne Clark - 844-2565

**ENTM 2000 PESTS, PATHOGENS, PARASITES, AND PEOPLE (3).** LEC. 3. Past and present problems of pests and disease involving humans and the food chain.

**ENTM 2040/2043/2044 INSECTS: AN INTRODUCTION TO ENTOMOLOGY (3).** LEC. 3. Life processes, importance, and occurrence of insects.

**ENTM 2150 FOREST PESTS (4).** LEC. 3, LAB. 2. Pr., BIOL 1020 or BIOL 1027. Insect and disease pests of forests. Recognition, biology, and fundamentals of management of important pest species.

**ENTM 3040 GENERAL ENTOMOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030 or BIOL 1037. Introduction to the biology and diversity of insects. An insect collection is required.

**ENTM 4020 ECONOMIC ENTOMOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030 or BIOL 1037. Consideration of the biological aspects, life histories and control of insects.

**ENTM 4040 INSECTS AFFECTING HUMANS, DOMESTIC ANIMALS AND WILDLIFE (3).** LEC. 3. Pr., (BIOL 1030 or BIOL 1037) or ENTM 3040. Insects and other arthropods which attack animals or otherwise cause problems of public-health, veterinary, or wildlife importance.

**ENTM 4150 INTEGRATED FOREST PEST MANAGEMENT (3).** LEC. 2, LAB. 3. Pr., ENTM 2150 and FORY 3100. Identification, principles of integrated management, and computer modeling of insects and fungi that attack forest and shade trees.

**ENTM 4920 ENTOMOLOGY INTERNSHIP (5).** INT. 5. SU. Practical professional experience under the supervision of internship faculty and/or representatives of state, federal or private agency.

**ENTM 4960 SPECIAL PROBLEMS IN ENTOMOLOGY (1-3).** IND. Credit to be arranged. Specialized project or research on a specific topic in entomology to be conducted under faculty supervision. Course may be repeated for a maximum of 3 credit hours.

**ENTM 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ENTM 5010 ENTOMOLOGY FOR EDUCATORS (4).** LEC. 4, LAB. 3. Pr., BIOL 1030 or BIOL 1037. Biology and diversity of insects and related arthropods with applications for educators. An insect collection and an entomological exposition are required.

**ENTM 5030 INSECTICIDES IN THE ENVIRONMENT (4).** LEC. 3, LAB. 2. Pr., CHEM 1030 and CHEM 1031 and CHEM 1040 and CHEM 1041. Toxic action and environmental fate of insecticides, regulations, formulations, application methods, insecticide resistance and research methods.

**ENTM 5140 AQUATIC INSECTS (4).** LEC. 3, LAB. 3. Pr., ENTM 3040 or BIOL 4010. Biology and ecology of aquatic and semi-aquatic insects. Laboratory sessions focus on identification at the family and generic levels, and experience in collecting and field techniques.

**ENTM 5150 ARACHNOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040. Biology, behavior and systematics of all arachnid groups, with major emphasis on spiders and mites.

**ENTM 5220 INSECT ECOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3060. Ecological interactions of insects and their environment, with emphasis on herbivory, predation, parasitism and mutualism, as well as population and community dynamics.

**ENTM 5300 SYSTEMATIC ENTOMOLOGY (4).** LEC. 3, LAB. 4. Pr., ENTM 3040 or ENTM 4020. Learn to use the tools of the taxonomist to identify common families of insects. A collection is required. Field trips will be taken. Departmental approval.

**ENTM 5330 INTEGRATED PEST MANAGEMENT (4).** LEC. 3, LAB. 2. Pr., ENTM 3040 or ENTM 4020. Integrated management of insects by environmental, biological, genetic, chemical and legal means.

## Finance (FINC)

**ENTM 5340 URBAN FOREST INSECTS (3).** LEC. 2, LAB. 3. Pr., ENTM 2150 and (ENTM 3040 or ENTM 4020). Identification, importance, biology and management of principal insects of the urban forest.

**ENTM 5360 LANDSCAPE ENTOMOLOGY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1020 or BIOL 1027) or (BIOL 1030 or BIOL 1037). Identification and management of arthropod pests in the landscape. Recognition of pests and damage to trees, turf and ornamental plants.

**ENTM 5370 URBAN ENTOMOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040 or ENTM 4020. Identification, biology and control of insect and other household arthropod pests.

**ENTM 5440 INSECT MORPHOLOGY (4).** LEC. 3, LAB. 4. Pr., ENTM 3040 and ENTM 4020. Form and function in insects and related arthropods emphasizing morphological characteristics used in insect identification. Departmental approval.

**ENTM 6010 ENTOMOLOGY FOR EDUCATORS (4).** LEC. 4, LAB. 3. Pr., BIOL 1030 or BIOL 1037. Biology and diversity of insects and related arthropods with applications for educators. An insect collection and an entomological exposition are required.

**ENTM 6030 INSECTICIDES IN THE ENVIRONMENT (4).** LEC. 3, LAB. 2. Pr., CHEM 1030 and CHEM 1031 and CHEM 1040 and CHEM 1041. Toxic action and environmental fate of insecticides, regulations, formulations, application methods, insecticide resistance and research methods.

**ENTM 6140 AQUATIC INSECTS (4).** LEC. 3, LAB. 3. Pr., ENTM 3040 or BIOL 4010. Biology and ecology of aquatic and semi-aquatic insects. Laboratory sessions focus on identification at the family and generic levels, and experience in collecting and field techniques. Departmental approval.

**ENTM 6150 ARACHNOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040. Biology, behavior and systematics of all arachnid groups, with major emphasis on spiders and mites. Departmental approval.

**ENTM 6220 INSECT ECOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3060. Ecological interactions of insects and their environment, with emphasis on herbivory, predation, parasitism and mutualism, as well as population and community dynamics. Departmental approval.

**ENTM 6300 SYSTEMATIC ENTOMOLOGY (5).** LEC. 3, LAB. 6. Pr., ENTM 3040 or ENTM 4020. Principles of systematics and identification of insects through orders, families, genera, and species. Collections are required. Credit will not be given for both ENTM 4300 and ENTM 7300. Departmental approval.

**ENTM 6330 INTEGRATED PEST MANAGEMENT (4).** LEC. 3, LAB. 2. Pr., ENTM 3040 or ENTM 4020. Integrated management of insects by environmental, biological, genetic, chemical and legal means.

**ENTM 6340 URBAN FOREST INSECTS (3).** LEC. 2, LAB. 3. Pr., ENTM 2150 and (ENTM 3040 or ENTM 4020). Identification, importance, biology and management of principal insects of the urban forest.

**ENTM 6360 LANDSCAPE ENTOMOLOGY (4).** LEC. 3, LAB. 3. Pr., (BIOL 1020 or BIOL 1027) or (BIOL 1030 or BIOL 1037). Identification and management of arthropod pests in the landscape. Recognition of pests and damage to trees, turf and ornamental plants.

**ENTM 6370 URBAN ENTOMOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040 or ENTM 4020. Identification, biology and control of insect and other household arthropod pests.

**ENTM 6440 INSECT MORPHOLOGY (5).** LEC. 3, LAB. 6. Pr., ENTM 3040 or ENTM 4020. Comparative external anatomy and generalized internal structures of insects. Characteristics used in taxonomy will be emphasized. Credit will not be given for both ENTM 5440 and ENTM 6440. Departmental approval.

**ENTM 7100 GENERAL TOXICOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040 and CHEM 2030. History, mechanism of action, metabolism, and structure- activity relationship of natural and synthetic insecticides. Contemporary laboratory techniques in toxicology will be featured. Departmental approval.

**ENTM 7130 BIOLOGICAL AND MICROBIAL CONTROL OF INSECTS (4).** LEC. 3, LAB. 3. Pr., (ENTM 3040 or ENTM 4020) and BIOL 3200. Biology, ecology, classification and use of insect natural enemies. Departmental approval.

**ENTM 7190 PLANT AND ANIMAL INTERACTIONS (3).** LEC. 3. Pr., BIOL 3060. Ecological and evolutionary interrelationships emphasizing pollination biology, seed dispersal and plant-herbivore interactions. Departmental approval.

**ENTM 7200 INSECT PHYSIOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040. Introduction to insect physiology stressing structure and function of each organ system. Methods used in physiological research will be emphasized. Departmental approval.

**ENTM 7330 MEDICAL-VETERINARY ENTOMOLOGY (4).** LEC. 3, LAB. 3. Pr., ENTM 3040 or BIOL 6110. Insects, mites, and other arthropods of medical or veterinary importance, identification of species, their biology and role as vectors of disease agents. Departmental approval.

**ENTM 7345 TROPICAL BIOLOGY: AN ECOLOGICAL APPROACH (8).** LEC. 4, LAB. 12. Pr., BIOL 7000-7999. The principles of ecology in the tropics. Departmental approval.

**ENTM 7900 DIRECTED STUDIES IN ENTOMOLOGY I (1-5).** LEC. SU. Discussion groups on specific topics, assigned readings, on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

**ENTM 7910 TEACHING PRACTICUM (1).** LAB. 2. SU. The teaching practicum will address the practical and heretical issues of laboratory learning and facilitating the skills of pedagogy. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ENTM 7920 GRADUATE INTERNSHIP (3).** LEC. 3. Practical professional experience under supervision of faculty internship advisor. Course may be repeated for a maximum of 12 credit hours. M.Ag. candidates Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**ENTM 7930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1).** LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 2 credit hours.

**ENTM 7950 SEMINAR (1).** SEM. 1. SU. Presentation and discussion of scientific literature of thesis research findings. Required of all MS candidates.

**ENTM 7960 ADVANCED SPECIAL PROBLEMS IN ENTOMOLOGY I (1-5).** IND. Departmental approval. Specialized project or research on a specific topic in entomology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

**ENTM 7990 RESEARCH AND THESIS (1-10).** MST. Topics may focus on technical laboratory problems or field research related to arthropod biology. Course may be repeated with change in topic. Admission to the MS Program. Course may be repeated with change in topics.

**ENTM 8900 DIRECTED STUDIES IN ENTOMOLOGY II (1-5).** LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

**ENTM 8910 TEACHING PRACTICUM (1-3).** LAB. 2. SU. Departmental approval. Practical and theoretical issues of laboratory learning, and pedagogical facilitation. Required of all PhD students. Course may be repeated for a maximum of 3 credit hours.

**ENTM 8930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1).** LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 3 credit hours.

**ENTM 8950 SEMINAR (1).** LEC. 1. SU. Presentation and discussion of scientific literature or dissertation research findings. Required of all PhD students.

**ENTM 8960 ADVANCED SPECIAL PROBLEMS IN ENTOMOLOGY II (1-5).** IND. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in entomology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

**ENTM 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic. Admission to the PhD Program. Course may be repeated with change in topics.

## Environmental Science (ENVI)

Dr. Wes Wood - 844-3997

**ENVI 1010 INTRODUCTION TO ENVIRONMENTAL SCIENCE (0).** LEC. 1. SU. Introduction to the environmental science field and the ENVI major.

**ENVI 1020 FUNDAMENTALS OF ENVIRONMENTAL SCIENCE (2).** LEC. 2. Preference given to students for whom the course is required. Survey of fundamental concepts, issues, and concerns related to environmental science.

**ENVI 2010 ENVIRONMENTAL SCIENCE SEMINAR (1).** LEC. 1. Pr., ENGL 1120. Departmental approval. Discussion of current issues in environmental science.

## Finance (FINC)

Dr. John Jahera, Jr. - 844-5344

**FINC 2400 PERSONAL FINANCE (3).** LEC. 3. Plans for managing personal financing problems involving insurance, housing, household budgeting, investments, personal and bank loans, personal credit and time value of money.

**FINC 3100 FUNDAMENTALS OF GLOBAL TRADE (3).** LEC. 3. COB academic standards. Export management skills, including basic global supply chain management and trade finance.

**FINC 3200 RISK AND INSURANCE (3).** LEC. 3. Essentials of risk management, with emphasis on the use of insurance, including the characteristics of property, liability, life and health insurance.

**FINC 3250 PRINCIPLES OF REAL ESTATE (3).** LEC. 3. Fundamental principles and practices as applied to the purchase, sale and lease and management of real estate.

**FINC 3610 PRINCIPLES OF BUSINESS FINANCE (3).** LEC. 3. Pr., ACCT 2110 or ACCT 2117 or ACCT 2910. Corporate finance from the perspective of a financial manager. Topics include financial planning and forecasting budgeting, capital budgeting, basic valuation, dividends.

## Fisheries and Allied Aquacultures (FISH)

**FINC 3617 HONORS PRINCIPLES OF BUSINESS FINANCE (3).** LEC. 3. Pr., Honors College. ACCT 2117. Corporate finance from the perspective of a financial manager. Topics include financial planning and forecasting cash budgeting, capital budgeting, basic valuation, dividends. Fall, Spring.

**FINC 3620 SMALL BUSINESS FINANCE (3).** LEC. 3. Pr., FINC 3610 or FINC 3617. Financial control, financial forecasting, working capital and sources of financing in a small and closely-held business environment.

**FINC 3630 ADVANCED BUSINESS FINANCE (3).** LEC. 3. Pr., (FINC 3610 or FINC 3617) and STAT 2610. In-depth analysis of financial concepts including valuation capital budgeting, cost of capital, leasing, financial analysis, and working capital management.

**FINC 3640 INVESTMENTS (3).** LEC. 3. Pr., FINC 3610 or FINC 3617. Types of investment security markets, investment instruments, concepts and strategies for institutional and individual investors.

**FINC 3700 FINANCIAL MARKETS INSTITUTIONS (3).** LEC. 3. Pr., FINC 3610 or FINC 3617. Overview of the financial system, organization and regulation of financial markets and institutions, the behavior and structure of interest rates.

**FINC 3810 FOUNDATIONS OF BUSINESS FINANCE (3).** LEC. 3. Foundations of Business Finance is a broad based introductory course that will focus on finance functions and applications of finance principles. This course is not open to undergraduates majoring in business.

**FINC 4210 PROPERTY AND LIABILITY INSURANCE (3).** LEC. 3. Pr., FINC 3200. Commercial risks and the insurance contracts used to address these risks. Departmental approval.

**FINC 4220 LIFE INSURANCE (3).** LEC. 3. Pr., FINC 3200. Individual life, health, annuity contracts and other investments, with a focus on financial planning, estate planning, and business continuation arrangements. Departmental approval.

**FINC 4250 REAL ESTATE INVESTMENT (3).** LEC. 3. Pr., (FINC 3610 or FINC 3617) and FINC 3250. Analysis and evaluation of real estate investments including cash flow measurement for both residential and commercial investment projects.

**FINC 4520 INTERNATIONAL FINANCIAL MARKETS (3).** LEC. 3. Pr., FINC 5510. Analysis of multinational financial markets, their use by the multinational corporation in managing currency risk, as a source of funds, and for portfolio investment. Departmental approval.

**FINC 4630 FINANCIAL STRATEGY (3).** LEC. 3. Pr., ACCT 3110 and FINC 3630. The advanced application of corporate finance through case analysis, company analysis, and current topics.

**FINC 4650 FINANCIAL STATEMENT ANALYSIS (3).** LEC. 3. Pr., FINC 3610 or FINC 3617. Evaluation and assessment of financial condition, performance, and reporting strategies of firms using relevant financial and market information.

**FINC 4660 SECURITY ANALYSIS (3).** LEC. 3. Pr., ACCT 3110 and FINC 3630 and FINC 3640. Analysis, techniques and selection of securities to meet specific investment objectives. Focus on individual security analysis and portfolio management.

**FINC 4700 MANAGEMENT OF FINANCIAL INSTITUTIONS (3).** LEC. 3. Pr., FINC 3700. Management strategies for firms including management of credit, liquidity, capital and interest rate risks in a regulated environment.

**FINC 4900 DIRECTED STUDIES (1-3).** IND. SU. Advanced individual research and study in finance under the direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FINC 4920 INTERNSHIP (1-6).** AAB/INT. SU. The internship program offers the opportunity to gain relevant and meaningful work experience. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FINC 4970 SPECIAL TOPICS (1-3).** AAB. Specialized topics and current developments and innovations in finance. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FINC 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FINC 5510 MULTINATIONAL FINANCIAL MANAGEMENT (3).** LEC. 3. Pr., FINC 3610 or FINC 3617. Advantages and problems associated with the modern multinational corporation, including analysis of currency risk, hedging, and political risk.

**FINC 5680 FINANCIAL ENGINEERING (3).** LEC. 3. Pr., FINC 3630 or FINC 3640 or FINC 3700. Examination of derivative securities with emphasis on applying derivative securities to the management of corporate financial risk.

**FINC 5740 ADVANCED FINANCIAL ANALYSIS (3).** LEC. 3. Pr., (FINC 3630 or P/C, FINC 3640) and STAT 2610 and P/C, ACCT 3110. Issues surrounding and methods for financial analysis of investments and firms, including: ethical and professional standards, qualitative methods, economics, financial reporting and analysis, corporate finance, portfolio management and wealth planning. May count FINC 5740 or 6740. Departmental approval.

**FINC 6510/6516 MULTINATIONAL FINANCIAL MANAGEMENT (3).** LEC. 3. Advantages and problems associated with the modern multinational corporation, including analysis of currency risk, hedging, and political risk.

**FINC 6680/6686 FINANCIAL ENGINEERING (3).** LEC. 3. Pr., FINC 7600 or BUSI 7110. Theory and pricing of derivative securities with emphasis on applying derivative securities in corporate financial risk management. Departmental approval.

**FINC 6740 ADVANCED FINANCIAL ANALYSIS (3).** LEC. 3. Pr., (FINC 3630 or P/C, FINC 3640) and STAT 2610 and P/C, ACCT 3110. Issues surrounding and methods for financial analysis of investments and firms, including: ethical and professional standards, qualitative methods, economics, financial reporting and analysis, corporate finance, portfolio management and wealth planning. May count FINC 5740 or 6740. Departmental approval.

**FINC 7410/7416 BUSINESS RISK MANAGEMENT (3).** LEC. 3. An analysis of business risk and the risk management methods, including loss control, insurance, and other forms of risk financing, used to handle these risks. Departmental approval.

**FINC 7600/7606 ADVANCED CORPORATE FINANCE (3).** LEC. 3. Pr., FINC 3610 or FINC 3617. Intensive study of theory and problems in corporate finance from an internal decision making point of view. Departmental approval.

**FINC 7620/7626 ADVANCED REAL ESTATE FINANCE (3).** LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Study of real estate markets including regulatory and legal issues, valuation of income producing property, financing sources, corporate real estate, investment performance measurement. Departmental approval.

**FINC 7630/7636 HEALTH CARE FINANCE (3).** LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Techniques and analysis of financial management in a health care setting. Emphasis on financial planning and forecasting, budgeting, capital investment analysis in the regulated healthcare marketplace. Departmental approval.

**FINC 7640/7646 ADVANCED INVESTMENTS (3).** LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Types of investment securities, regulation and operation of securities markets and the theory and practice of investments. Departmental approval.

**FINC 7650/7656 APPLIED FINANCIAL MANAGEMENT (3).** LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. The integration of financial theory with practice through spreadsheets, case analysis, company analysis, and current topics in finance. Departmental approval.

**FINC 7660/7666 SECURITY ANALYSIS AND MANAGEMENT (3).** LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Advanced analytical methods for security valuation, managing investment portfolios, and developing appropriate investment strategies. Departmental approval.

**FINC 7670/7676 MERGERS, ACQUISITIONS AND RESTRUCTURING (3).** LEC. 3. Pr., FINC 7600 or FINC 7606 or BUSI 7110. Strategic analysis of corporate restructuring and governance including valuation, control issues, joint ventures, divestitures, takeover defense measures, diversification issues. Course may be repeated for a maximum of 6 credit hours. Departmental approval.

**FINC 7690/7696 ADVANCED FINANCIAL SYSTEMS (3).** LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Analysis and examination of financial institutions and markets in an evolving regulatory and global marketplace for financial services and products. Departmental approval.

**FINC 7900/7906 INDEPENDENT STUDY (1-3).** IND. SU. In-depth research and study under the direction of a faculty member. Topics are variable within finance and finance-related areas. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FINC 7970/7976 SPECIAL TOPICS (1-3).** IND. Specialized topics in finance and finance-related areas not otherwise covered in existing courses. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FINC 7990 RESEARCH AND THESIS (1-10).** MST. Departmental approval. Course may be repeated with change in topics.

## Fisheries and Allied Aquacultures (FISH)

Dr. David Rouse - 844-4786

**FISH 1100 FISHERIES ORIENTATION (1).** LEC. 1. SU. An introduction to the departmental programs and personnel and how to make the most of a future in fisheries.

**FISH 2100 INTRODUCTION TO FISHERIES SCIENCES (3).** LEC. 2, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and FISH 1100. Hands-on field activities and site visits related to aquatic ecology, fisheries biology, and aquaculture.

**FISH 3800 CAREERS IN FISHERIES (1).** LEC. 1. SU. Pr., FISH 2100. Consideration of various aspects of fisheries work, career options as related to individual interests, and career planning. Departmental approval.

**FISH 4900 DIRECTED STUDIES IN FISHERIES (1-4).** IND. SU. Individualized in depth study on a particular subject under the guidance of a professor. May include directed reading and research. Course may be repeated for a maximum of 4 credit hours.

**FISH 4920 INTERNSHIP (1-5).** INT. SU. Discipline-related learning while employed with cooperating private industry or public agency. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

## *Fisheries and Allied Aquacultures (FISH)*

**FISH 4960 SPECIAL PROBLEMS (1-4).** LEC. Departmental approval. Individual and group problems investigations in fisheries and allied aquacultures. Course may be repeated for a maximum of 4 credit hours.

**FISH 4967 HONORS SPECIAL PROBLEMS (1-4).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

**FISH 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FISH 5210 PRINCIPLES OF AQUACULTURE (3).** LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and FISH 2100. Principles underlying aquatic productivity and levels of management as demonstrated by present practices of aquaculture around the world.

**FISH 5215 MARINE AQUACULTURE (2).** LEC. 1, LAB. 2. Introduction to culture of marine species with emphasis in nutrition and feeding, reproductive biology, production techniques, processing, marketing and economics. Taught at the Dauphin Island Sea Lab. Summer. Departmental approval.

**FISH 5220 WATER SCIENCE (3).** LEC. 3. Pr., CHEM 1040 and FISH 2100. Properties of water, the water cycle, basic water chemistry and water quality with emphasis on water in managed ecosystems. Fall. Departmental approval.

**FISH 5240 HATCHERY MANAGEMENT (4).** LEC. 2, LAB. 8. Pr., FISH 5210 or FISH 6210. Study of warm-water hatchery techniques and application of those techniques in the field. Spring.

**FISH 5250 AQUACULTURE PRODUCTION (4).** LEC. 3, LAB. 4. Pr., FISH 5210. Factors affecting growth and yield of aqua cultural species, with implications toward farming commonly cultured species. Production techniques for commercially important finfish are discussed. Summer.

**FISH 5320 LIMNOLOGY (4).** LEC. 3, LAB. 6. Pr., CHEM 1040 and (BIOL 1030 or BIOL 1037) and FISH 2100 and BIOL 3060. Limnology is the study of the chemical, physical, geological, biological, and ecological processes that influence the structure and function of freshwater communities. This course focus on interactions among these variables. Credit will not be given for both FISH 5320 and FISH 6320 Departmental approval.

**FISH 5380 GENERAL ICHTHYOLOGY (4).** LEC. 3, LAB. 6. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes, with an overview of ecology, behavior, biology and conservation of fishes. Fall.

**FISH 5410 INTRODUCTION TO FISH HEALTH (3).** LEC. 3. Pr., BIOL 1030 or BIOL 1037. Introduction to parasitic, bacterial and viral pathogens of wild and cultured finfish and shellfish. Fall.

**FISH 5425 MARINE FISH DISEASES (4).** LEC. 7.5, LAB. 6. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3200. Introduction to diseases of marine finfish and shellfish and practical techniques used to isolate and identify diseases. Taught at Dauphin Island Sea Lab, Summer, First Term. Summer. Departmental approval.

**FISH 5440 FISH ANATOMY AND PHYSIOLOGY (4).** LEC. 3, LAB. 4. Pr., FISH 5380. Departmental approval. Gross and microscopic fish anatomy.

**FISH 5510 FISHERIES BIOLOGY AND MANAGEMENT (4).** LEC. 3, LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and FISH 2100. This course provides a general overview and introduction to fisheries management with emphasis on freshwater examples. The laboratory will provide hands-on field experience. Credit will not be given for both FISH 5510 and FISH 6510.

**FISH 5520 SMALL IMPOUNDMENT MANAGEMENT (3).** LEC. 5, LAB. 10. Pr., (BIOL 1030 or BIOL 1037) and FISH 2100. Major aspects of primarily recreational fishing pond management, including construction, stocking, water quality management, harvest strategy, diagnosis of problems and communication of analyses. Summer.

**FISH 5630 FACILITIES FOR AQUACULTURE (3).** LEC. 2, LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040 and FISH 2100. Principles and practice of site selection, design and construction of aqua cultural facilities, with emphasis on impoundments and ponds. Odd years. Spring.

**FISH 5650 FISH AND SEAFOOD PROCESSING TECHNOLOGY (3).** LEC. 3. Pr., CHEM 2030 and BIOL 3200. Emphasis on important species, market forms, preservation techniques, and rules and regulations of the seafood industry.

**FISH 5670 FISHERIES AND AQUACULTURES EXTENSION METHODS (2).** LEC. 2. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040 and FISH 2100. Concepts and practices pertaining to aqua cultural extension organization, administration, program development and implementation. Summer.

**FISH 5725 MARINE ICHTHYOLOGY (6).** LEC. 6. Pr., BIOL 3060. General background in the biology of marine fishes and their taxonomy. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval; Admission to the Gulf Coast Research Laboratory.

**FISH 5735 PRINCIPLES OF MARINE AQUACULTURE (6).** LEC. 6. Pr., BIOL 1000-8999. Principles and technologies for culture of commercially important marine organisms. Offered at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Acceptance at GCRL.

**FISH 5745 MARINE FISHERIES MANAGEMENT (4).** LEC. 4. Overview of practical marine fishery management problems. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval; Admission to GCRL.

**FISH 5970 TOPICS IN FISHERIES AND ALLIED AQUACULTURES (1-4).** LEC. Instruction and discussion in a selected current topic in Fisheries, Aquaculture or Aquatic Sciences.

**FISH 6210 PRINCIPLES OF AQUACULTURE (3).** LEC. 3. Pr., BIOL 1030 or BIOL 1037. Principles underlying aquatic productivity and levels of management as demonstrated by present practices of aquaculture around the world. Fall.

**FISH 6215 MARINE AQUACULTURE (2).** LEC. 1, LAB. 2. Introduction to culture of marine species with emphasis in nutrition and feeding, reproductive biology, production techniques, processing, marketing and economics. Taught at the Dauphin Island Sea Lab. Summer. Departmental approval.

**FISH 6220 WATER SCIENCE (3).** LEC. 3. Pr., CHEM 1040. Properties of water, the water cycle, basic water chemistry and water quality with emphasis on water in managed ecosystems. Fall. Departmental approval.

**FISH 6240 HATCHERY MANAGEMENT (4).** LEC. 2, LAB. 8. Pr., FISH 6210. Study of warm-water hatchery techniques and application of those techniques in the field. Spring.

**FISH 6250 AQUACULTURE PRODUCTION (4).** LEC. 3, LAB. 4. Pr., BIOL 1030 or BIOL 1037. Factors affecting growth and yield of aqua cultural species, with implications toward farming commonly cultured species. Production techniques for commercially important finfish are discussed. Summer.

**FISH 6320 LIMNOLOGY (4).** LEC. 3, LAB. 6. Pr., CHEM 1040 and (BIOL 1030 or BIOL 1037) and FISH 2100 and BIOL 3060 and FISH 5220. Limnology is the study of the chemical, physical, geological, biological, and ecological processes that influence the structure and function of freshwater communities. This course focus on interactions among these variables. Credit will not be given for both FISH 5320 and FISH 6320.

**FISH 6380 GENERAL ICHTHYOLOGY (4).** LEC. 3, LAB. 6. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes, with an overview of ecology, behavior, biology and conservation of fishes. Fall.

**FISH 6410 INTRODUCTION TO FISH HEALTH (3).** LEC. 3. Pr., BIOL 1030 or BIOL 1037. Introduction to parasitic, bacterial and viral pathogens of wild and cultured finfish and shellfish. Fall.

**FISH 6425 MARINE FISH DISEASES (4).** LEC. 7.5, LAB. 6. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3200. Introduction to diseases of marine finfish and shellfish and practical techniques used to isolate and identify diseases. Taught at Dauphin Island Sea Lab, Summer, First Term. Summer. Departmental approval.

**FISH 6440 FISH ANATOMY AND PHYSIOLOGY (4).** LEC. 3, LAB. 4. Pr., FISH 6380. Departmental approval. Gross and microscopic fish anatomy.

**FISH 6510 FISHERIES BIOLOGY AND MANAGEMENT (4).** LEC. 3, LAB. 4. Pr., BIOL 1030 or BIOL 1037. This course provides a general overview and introduction to fisheries management with emphasis on freshwater examples. The laboratory will provide hands-on field experience. Credit will not be given for both FISH 5510 and FISH 6510.

**FISH 6520 SMALL IMPOUNDMENT MANAGEMENT (3).** LEC. 5, LAB. 10. Pr., BIOL 1030 or BIOL 1037. Major aspects of primarily recreational fishing pond management, including construction, stocking, water quality management, harvest strategy, diagnosis of problems and communication of analyses. Summer.

**FISH 6630 FACILITIES FOR AQUACULTURE (3).** LEC. 2, LAB. 4. Principles and practice of site selection, design and construction of aqua cultural facilities, with emphasis on impoundments and ponds. Odd years. Spring.

**FISH 6650 FISH AND SEAFOOD PROCESSING TECHNOLOGY (3).** LEC. 3. Pr., CHEM 2030 and BIOL 3200. Emphasis on important species, market forms, preservation techniques, and rules and regulations of the seafood industry. Summer.

**FISH 6670 FISHERIES AND AQUACULTURE EXTENSION METHODS (2).** LEC. 2. Concepts and practices pertaining to aqua cultural extension organization, administration, program development and implementation. Summer.

**FISH 6725 MARINE ICHTHYOLOGY (6).** LEC. 6. Pr., BIOL 3060 and FISH 6380. General background in the biology of marine fishes and their taxonomy. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval ; Admission to Gulf Coast Research Laboratory.

**FISH 6735 PRINCIPLES OF MARINE AQUACULTURE (6).** LEC. 6. Pr., BIOL 6000-8999. Principles and technologies for culture of commercially important marine organisms. Offered at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Acceptance at GCRL; Departmental approval.

**FISH 6745 MARINE FISHERIES MANAGEMENT (4).** LEC. 4. Overview of practical marine fishery management problems. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval; Admission to GCRL.

**FISH 6970 TOPICS IN FISHERIES AND ALLIED AQUACULTURES (1-4).** LEC. Instruction and discussion in a selected current topic in Fisheries, Aquaculture or Aquatic Sciences.

**FISH 7230 WATER AND SEDIMENT QUALITY MANAGEMENT IN AQUACULTURE (4).** LEC. 3, LAB. 3. Pr., FISH 6220. Advanced treatment of water and sediment quality management in aquaculture. Analytical methods for soil and water quality. Fall. Departmental approval.



## Foreign Languages and Literatures (FLNG)

**FISH 7240 RESOURCE USE AND ENVIRONMENTAL ISSUES IN AQUACULTURE (2).** LEC. 2. Resource use, environmental effects, and sustainability of aquaculture with emphasis on approaches to improving efficiency and reducing negative environmental effects. Fall.

**FISH 7270 CRUSTACEAN AND MOLLUSCAN AQUACULTURE (4).** LEC. 3, LAB. 3. Pr., FISH 5210 or FISH 6210. General biology and culture techniques of the major shrimp, crawfish and shellfish species cultured throughout the world. Spring. Departmental approval.

**FISH 7330 RESERVOIR LIMNOLOGY (3).** LEC. 2, LAB. 5. Pr., FISH 5320 or FISH 6320. Consideration of the ecological characteristics of reservoirs as they relate to modern concepts of ecosystem management. Even years. Summer. Departmental approval.

**FISH 7340 FISH ECOLOGY (3).** LEC. 2, LAB. 3. Pr., BIOL 3060. Study of interactions among fish and their environment. Laboratory will emphasize critical literature reading and experimental approaches. Even years. Fall. BIOL 3060 or equivalent.

**FISH 7360 MANAGEMENT OF AQUATIC FLORA IN FISHERIES AND AQUACULTURE (4).** LEC. 3, LAB. 6. Pr., BIOL 6120. Role of aquatic vegetation in fish production, its utilization and control. Odd years. Summer. BIOL 6120 or equivalent Departmental approval.

**FISH 7380 ECOLOGY AND MANAGEMENT OF RIVERINE SYSTEMS (4).** LEC. 3, LAB. 3. Pr., BIOL 7370. River systems within a landscape ecology and ecosystem management context. Laboratory sessions stress techniques for assessment and management. Even years. Spring.

**FISH 7410 MOLECULAR DIAGNOSIS: PRINCIPLES AND APPLICATIONS (3).** LEC. 3. Introduction to molecular biology techniques currently used in disease diagnosis.

**FISH 7420 FISH DISEASES (4)** LLB. Pr., BIOL 3200. Diagnostic techniques for viral, bacterial, fungal and parasitic diseases of fishes, including etiologic agents, geographical ranges, species susceptibility, clinical signs, clinical pathology, epidemiology and management. Fall. Departmental approval.

**FISH 7450 FISH PATHOLOGY (3).** LEC. 2, LAB. 3. Pr., FISH 5410 or FISH 6410 or FISH 7420. Morphological and physiological changes in fish with infectious or non-infectious diseases. Even years. Fall. Departmental approval.

**FISH 7460 CLINICAL FISH DISEASE DIAGNOSIS (1-3).** LEC. Pr., FISH 6410 and FISH 7420. Practical experience in necropsy of diseased fish. Identification of causative agents and prescription of appropriate disease control. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FISH 7530 FISH POPULATION DYNAMICS (3).** LEC. 2, LAB. 4. Pr., FISH 6510 or FISH 5510 and STAT 7040. Derivation of fish population estimates, growth, recruitment and mortality; use of modeling techniques to assess exploited fish populations. Even years. Spring. Departmental approval.

**FISH 7540 QUANTITATIVE TECHNIQUES IN FISHERY ASSESSMENT (3).** LEC. 2, LAB. 4. Pr., FISH 6510 or FISH 5510 and STAT 7000 and STAT 7040. Quantitative techniques to assess and manage fish populations in freshwater. The laboratory will analyze actual fisheries data using SAS on personal computers. Odd years. Spring. Departmental approval.

**FISH 7640 FISH NUTRITION (3).** LEC. 3. Pr., ANSC 7210. Fundamental and applied aspects of fish nutrition, including nutrient requirements, physiology of food assimilation, feed preparation, and practical feeding.

**FISH 7641 FISH NUTRITION LABORATORY (2).** LAB. 6. Coreq., FISH 7640. Laboratory exercises in analysis of fish feeds and formulation and preparation of fish feeds. Summer.

**FISH 7650 FISH GENETIC ENHANCEMENT AND RESOURCE MANAGEMENT (3).** LEC. 3. Pr., BIOL 3000. Basis of genetic enhancement in aquatic animals by selective breeding, genome manipulation and genetic engineering, genetic maintenance and conservation. Odd years. Fall. Departmental approval.

**FISH 7660 MOLECULAR GENETICS AND BIOTECHNOLOGY (4).** LEC. 3, LAB. 3. Pr., BIOL 3000. Principles and application of DNA fingerprinting technologies, gene mapping, genetic information and analysis using internet tools, transgenic technologies. Even years. Fall. Departmental approval.

**FISH 7735 MARINE PLANKTON (3).** LEC. 3. Pr., FISH 7755 or BIOL 7575. Taxonomy of phytoplankton, bacterioplankton and zooplankton in estuaries, coastal seas and open oceans. Dauphin Island Sea Lab. Spring.

**FISH 7755 BIOLOGICAL OCEANOGRAPHY (3).** LEC. 3. Comprehensive survey of marine organisms and their biological interactions. Taught at Dauphin Island Sea Lab. Spring.

**FISH 7765 CHEMICAL OCEANOGRAPHY (3).** LEC. 3. In-depth examination of the chemistry of seawater and its relationship with biological, geological and physical processes in the oceans. Dauphin Island Sea Lab. Spring. ADDITIONAL APPROVAL: Departmental approval.

**FISH 7775 FISHERIES OCEANOGRAPHY (2).** LEC. 2. An examination of the relationship between fish life history, recruitment dynamics, harvest potential, and oceanographic processes. Taught at the Dauphin Island Sea Lab. Departmental approval.

**FISH 7900 DIRECTED STUDIES IN FISHERIES I (1-4).** IND. SU. Individualized in-depth study on a particular subject under the guidance of a professor. May include directed readings and research. Course may be repeated for a maximum of 4 credit hours.

**FISH 7920 INTERNSHIP IN FISHERIES AND AQUACULTURE (1-10).** INT. SU. Field experience in aquaculture, fisheries or aquatic resource management on farm or with research, extension or aquatic management agency. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FISH 7930 GRADUATE SEMINAR SERIES (1).** LEC. 1. SU. Acquaint students with current research and related activities.

**FISH 7950 GRADUATE RESEARCH SEMINAR (1).** SEM. 1. SU. Oral presentation and discussion of research in the field of specialization. Course may be repeated for a maximum of 2 credit hours.

**FISH 7960 SPECIAL PROBLEMS IN FISHERIES AND ALLIED AQUACULTURES (1-5).** LEC. Individual or group project and research in consultation with faculty member on problem in fisheries and allied aquacultures. Course may be repeated for a maximum of 5 credit hours.

**FISH 7990 RESEARCH AND THESIS (1-10).** MST. Credit to be arranged. Departmental approval. Course may be repeated with change in topics.

**FISH 8900 DIRECTED STUDIES IN FISHERIES II (1-4).** IND. SU. Individualized in-depth study on a particular subject under the guidance of a professor. May include directed readings and research. Course may be repeated for a maximum of 4 credit hours.

**FISH 8930 GRADUATE SEMINAR SERIES (1).** LEC. 1. SU. Acquaint students with current research and related activities.

**FISH 8950 SEMINAR (1).** SEM. 1. SU. Acquaint students with current research and related activities. Departmental approval.

**FISH 8960 SPECIAL PROBLEMS IN FISHERIES AND ALLIED AQUACULTURES (1-5).** LEC. Individualized work and research in consultation with faculty member on problem in fisheries and allied aquacultures. Course may be repeated for a maximum of 5 credit hours.

**FISH 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Departmental approval. Course may be repeated with change in topics.

## Foreign Languages and Literatures (FLNG)

Dr. Robert Weigel - 844-6356

### ASIAN (FLAS)

**FLAS 3450 TOPICS IN ASIAN CULTURE (3).** LEC. 3. Study of traditional and/or modern Asian culture with special emphasis on cross-cultural and transnational interactions with-in Asia, as well as with the West. Course may be repeated for a maximum of 6 credit hours.

### CHINESE (FLCN)

**FLCN 1000 ELEMENTARY CHINESE ABROAD (1-10).** AAB/IND. Pr., Dept. approval. Elementary coursework on approved study-abroad program. Course may be repeated for a maximum of 10 credit hours.

**FLCN 1010 ELEMENTARY CHINESE I (4).** LEC. 4. Exposure to Chinese language and culture for students with little or no knowledge of Chinese.

**FLCN 1020 ELEMENTARY CHINESE II (4).** LEC. 4. Pr., FLNG 1010. Pr., FLCN 1010 or dept. approval. Fulfills CLA foreign language core requirement. Continued exposure to Chinese language and culture.

**FLCN 2000 INTERMEDIATE CHINESE ABROAD (1-10).** AAB/IND. Pr., Dept. approval. Variable credit, determined by dept. Intermediate coursework on approved study-abroad program. Course may be repeated for a maximum of 10 credit hours.

**FLCN 2010 INTERMEDIATE CHINESE I (4).** LEC. 4. Pr., FLCN 1020. Pr., Dept. approval. Continued exposure to Chinese culture; introduction to intermediate language skills.

**FLCN 2020 INTERMEDIATE CHINESE II (4).** LEC. 4. Pr., FLCN 2010. Pr., Dept. approval. Continued exposure to Chinese culture; intermediate language skills with emphasis on grammar.

**FLCN 3000 ADVANCED CHINESE ABROAD (1-10).** AAB/IND. Pr., Dept. approval. Variable credit, determined by dept. Advanced coursework on approved study-abroad program. May repeat up to 10 credit hours. Course may be repeated for a maximum of 10 credit hours.

**FLCN 3010 CHINESE COMPOSITION AND CONVERSATION (3-6).** LEC. Pr., FLCN 2010 Pr., Departmental approval. Intense practice of spoken and written Chinese, both text- and situation-based. Course may be repeated for a maximum of 6 credit hours.

**FLCN 3050 CHINESE CINEMA (3).** LEC. 3. Major works of Chinese cinema from 1920s to present with emphasis on cultural and literary aspects.

**FLCN 3450 TOPICS IN CHINESE LITERATURE AND CULTURE (3-6).** LEC. Directed study of topics of interest.

## Foreign Languages and Literatures (FLNG)

**FLCN 3510 INTRODUCTION TO CHINESE CULTURE IN ENGLISH (3-6).** LEC. Chinese culture as depicted in art, film, literature, history. Course may be repeated for a maximum of 6 credit hours.

**FLCN 3930 DIRECTED STUDY IN CHINESE (1-6).** IND. Pr., FLCN 2010. Directed study in area of special interest for the superior student in Chinese. Course may be repeated for a maximum of 6 credit hours.

### FRENCH (FLFR)

**FLFR 1000 ELEMENTARY FRENCH ABROAD (1-10).** AAB/FLD. Course work at the elementary level. This credit may substitute for required 1000 level courses in French. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLFR 1010 ELEMENTARY FRENCH I (4).** LEC. 3, LAB. 2. Basic language skills with emphasis on conversation. For students with less than two years of high school French or FL placement test. Exposure to culture.

**FLFR 1020 ELEMENTARY FRENCH II (4).** LEC. 3, LAB. 2. Pr., FLFR 1010 Or FL placement test. Basic language skills with emphasis on conversation. Exposure to culture. Fulfills College of Liberal Arts core foreign language requirement. FLFR 1010 or two or more years of high school French.

**FLFR 1030 READING PROFICIENCY IN FRENCH (3).** LEC. 3. SU. For graduate students, who should consult their advisors for specific departmental language requirements. May not be used to fulfill undergraduate language requirements.

**FLFR 2000 INTERMEDIATE FRENCH ABROAD (1-10).** AAB/FLD. For course work at the intermediate level, taken on an approved study program abroad. The student should consult with the French undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLFR 2010 INTERMEDIATE FRENCH I (4).** LEC. 3, LAB. 2. Pr., FLFR 1020 Or FL placement test. Language skills, grammar review, readings in French culture, literature, and history. FLFR 1020 or 4 or more years of high school French Departmental approval.

**FLFR 2020 INTERMEDIATE FRENCH II (4).** LEC. 3, LAB. 2. Pr., FLFR 2010 Or FL placement test. Systematic review of problems in French grammar for speakers of English. Prepares students for conversation, composition and civilization in the third-year sequence.

**FLFR 3000 JUNIOR/ADVANCED FRENCH ABROAD (1-9).** AAB/FLD. Course work at the junior/advanced level, taken on an approved study program abroad. The student should consult with the undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLFR 3010 FRENCH PHONETICS AND DICTION (3).** LEC. 3. Pr., FLFR 2020 Or FL placement test. Basic principles of French phonetics through sound recognition discrimination and intensive practice. Departmental approval.

**FLFR 3030 FRENCH CONVERSATION (3).** LEC. 3. Pr., FLFR 2020 Or FL placement test. Intensive practice in spoken French, based on texts and everyday situations, especially in contemporary French society. Includes review of vocabulary. Departmental approval.

**FLFR 3040 FRENCH COMPOSITION (3).** LEC. 3. Pr., FLFR 2020 Or FL placement test. Review of grammar and practice in writing on topics ranging from descriptions and personal opinions to current affairs and social problems. Departmental approval.

**FLFR 3100 INTRODUCTION TO FRENCH LITERATURE (3).** LEC. 3. Pr., FLFR 3030 or FLFR 3040. Provides grounding in basic analytical approaches, language and organizational skills needed to discuss French literature effectively and coherently, orally or in writing. Departmental approval.

**FLFR 3110 FRENCH CIVILIZATION (3).** LEC. 3. Pr., FLFR 2020. Consideration of topical aspects of the cultural heritage of France, as reflected in present day life patterns, traditions and institutions. Departmental approval.

**FLFR 3140 SURVEY OF FRENCH LITERATURE I (3).** LEC. 3. Pr., FLFR 3030 or FLFR 3040 Departmental approval. The Middle Ages to the 1800's. Coherent and effective writing in French.

**FLFR 3150 SURVEY OF FRENCH LITERATURE II (3).** LEC. 3. Pr., FLFR 3030 or FLFR 3040. Departmental approval. Readings in French literature from the 19th Century to the present (prose, theatre, and poetry), centered on a theme or topic.

**FLFR 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN FRENCH (1).** LEC. 1. Pr., FLFR 2010. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLFR 3310/3313/3314 BUSINESS FRENCH (3).** LEC. 3. Pr., FLFR 3000-3999. And one FLFR 3000-level course. Intensive practice in preparing commercial correspondence and reading contracts, agreements, and related documents in French. Emphasis will be placed on the acquisition of a business-oriented vocabulary.

**FLFR 3510 TOPICS IN FRENCH LITERATURE AND CULTURE (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Topics drawing on French literature, history, fine arts, or culture of general interest to students with little or no previous study of French.

**FLFR 3930 DIRECTED STUDIES (1-3).** IND. Directed study in an area of special interest to the superior student in French. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FLFR 4000 SENIOR/ADVANCED FRENCH ABROAD (1-9).** AAB/FLD. Course work at the senior/advanced level, taken on an approved study program abroad. The student should consult with the undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLFR 4020 ADVANCED GRAMMAR AND STYLISTICS (3).** LEC. 3. Pr., FLFR 3040 FLFR 3040 or equivalent. Practice in writing and analyzing French texts, with emphasis on advanced grammar topics and stylistics.

**FLFR 4030 FRENCH CONTINUING CONVERSATION (3).** LEC. 3. Pr., FLFR 3030 or FLFR 3040. Departmental approval. Continuing practice in spoken French to maintain and upgrade proficiency. Major credit will not be given for FLFR or FLFT majors.

**FLFR 4040 FRENCH CONTINUING COMPOSITION (3).** LEC. 3. Pr., FLFR 3030 or FLFR 3040. Departmental approval. Continuing practice in written French to maintain and upgrade proficiency.

**FLFR 4310 FRENCH FOR INTERNATIONAL TRADE (3).** LEC. 3. Pr., FLFR 3000-3999. Departmental approval. Practical exercises in preparing and translating trade correspondence and documents in French as well as assigned group work and case studies under simulated real life pressures.

**FLFR 4410 ADVANCED TOPICS IN FRENCH LITERATURE, CULTURE OR LANGUAGE (3).** LEC. 3. The study of a special aspect or theme of the French Language, Literature, or Culture. Three 3000-level French courses Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLFR 4740 TRANSLATION (3).** LEC. 3. Pr., FLFR 3000-3999 and FLFR 3040. Basic techniques and problem areas in translating from French into English and from English into French.

**FLFR 4930 ADVANCED DIRECTED STUDY (1-3).** IND. Pr., FLFR 3000-3999. Directed study in area of special interest for the superior student in French. Course may be repeated for a maximum of 6 credit hours.

**FLFR 4980 FRENCH SENIOR CAPSTONE (1).** IND. 1. SU. Assessment of language skills through written paper and oral exam. Fall, Spring.

**FLFR 5310 FRENCH FOR INTERNATIONAL TRADE (3).** LEC. 3. Pr., FLFR 3000-3999. Practice in handling, preparing and translating international trade correspondence documents and related legal procedures in French. Development of case studies and other international trade group work in French and in English under simulated real life pressures. Departmental approval.

**FLFR 5970 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS (3).** LEC. 3. Pr., FLFR 3000-3999. Review of principal grammatical structures, develop skills through appropriate exercises and class assignments, and improve stylistic sensitivity by exposure to a variety of language samples. Departmental approval.

**FLFR 5980 SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS (3).** LEC. 3. Pr., FLFR 3000-3999. Seminar in advanced languages skills or topics from French literary genres and movements. Departmental approval.

**FLFR 6310 FRENCH FOR INTERNATIONAL TRADE (3).** LEC. 3. Pr., FLFR 3000-3999. Practice in handling, preparing, and translating international trade correspondence documents and related legal procedures in French. Departmental approval.

**FLFR 6970 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS (3).** LEC. 3. Pr., FLFR 3000-3999. Review of principal grammatical structures, develop skills through appropriate exercises and class assignments, and improve stylistic sensitivity by exposure to a variety of language samples. Departmental approval.

**FLFR 6980/6986 SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS (3).** AAB/SEM. 3. Pr., FLFR 3000-3999. Seminar in advanced languages skills or topics from French literary genres and movements. Departmental approval.

**FLFR 7000 GRADUATE FRENCH ABROAD (1-9).** AAB/FLD. For course work at the graduate level taken on an approved study program abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLFR 7010 ADVANCED FRENCH CIVILIZATION (3).** LEC. 3. An in-depth study of French civilization with emphasis on the relationship of history, arts, and literature from prehistoric times to the present. Departmental approval.

**FLFR 7020 ADVANCED COMPOSITION AND STYLISTICS (3).** LEC. 3. Graduate status, Departmental approval. Acquisition of advanced writing skills in French. Techniques and strategies of appropriate stylistic expression through analysis of various sources of texts: Literary, historical, commercial, popular, etc. Graduate status, Departmental approval.

**FLFR 7090 INTRODUCTION TO COLLEGE LEVEL FRENCH INSTRUCTION (1).** LEC. 1. SU. Orientation to French graduate studies. Introduction to College-level French instruction, critical observation of performance and guidance by designated instructors. Departmental approval.

**FLFR 7430 FRENCH PRESS (3).** LEC. 3. Political, intellectual and cultural events in France, Europe, and the world as reflected in major French daily and weekly publications. Departmental approval.

## Foreign Languages and Literatures (FLNG)

**FLFR 7740 ADVANCED TRANSLATION (3).** LEC. 3. Acquisition of skills for translation from French to English and from English to French using a wide variety of texts including historical, literary, commercial, and popular sources. Departmental approval.

**FLFR 7920 FOREIGN LANGUAGE CAREER INTERNSHIP (1-6).** INT. Experiential learning either in the business community or in university-sponsored programs outside the United States. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FLFR 7930 DIRECTED STUDIES IN LANGUAGE SKILLS (3).** LEC. 3. Course may be repeated for a maximum of 6 credit hours.

**FLFR 7960 SPECIAL PROBLEMS IN FRENCH LANGUAGE, LITERATURE OR CULTURE (1-3).** IND. Study in a specialized area under close supervision of an instructor. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FLFR 7970 SPECIAL TOPICS (1-3).** SEM. The detail study of a specific aspect of the French language, literature, or Culture. Fall. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

### GREEK (FLGK)

**FLGC 1150 GLOBAL FLUENCY AND AWARENESS (3).** LEC. 3. Introduction to non-native languages as representational reflections of two different cultural regions and impetus for in-depth analysis of global identities.

**FLGK 1010 ELEMENTARY CLASSICAL GREEK I (4).** LEC. 3, LAB. 2. Classical Greek. Introduction to the knowledge and skills necessary for reading ancient Greek. Fall.

**FLGK 1020 ELEMENTARY CLASSICAL GREEK II (4).** LEC. 3, LAB. 2. Pr., FLGK 1010. Classical Greek. Introduction to the knowledge and skills necessary for reading ancient Greek. Fulfills College of Liberal Arts foreign language core requirement. Spring. Departmental approval.

**FLGK 2010 INTERMEDIATE CLASSICAL GREEK I (4).** LEC. 3, LAB. 2. Pr., FLGK 1020. Classical Greek. Introduction to reading ancient Greek prose and poetry. Fall. Departmental approval.

**FLGK 2020 INTERMEDIATE CLASSICAL GREEK II (4).** LEC. 3, LAB. 2. Pr., FLGK 2010. Classical Greek. Continuation of FLGK 2010. Spring. Departmental approval.

**FLGK 3110 CLASSICAL GREEK LITERATURE (3).** LEC. 3, LAB. 2. Pr., FLGK 2010. Advanced readings in ancient Greek prose and poetry. Departmental approval. Course may be repeated with change in topics.

**FLGK 3510 CLASSICAL GREEK LITERATURE AND CULTURE (3).** LEC. 3. Classical Greek cultural practices and ideology with a focus on literary evidence. Readings in English.

**FLGK 3930 DIRECTED STUDIES IN ANCIENT GREEK LITERATURE (1-3).** IND. Independent study of classical Greek text(s). Topic proposed by student in conjunction with faculty advisor. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

### GERMAN (FLGR)

**FLGR 1000 ELEMENTARY GERMAN ABROAD (1-10).** IND. Course work at the elementary level. This credit may substitute for required 1000 level courses in German. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLGR 1010 ELEMENTARY GERMAN I (4).** LEC. 3, LAB. 2. Fundamentals of German language skills stressed. Exposure to Germanic civilization. For students with no previous background or less than two years of high school German or FL placement test

**FLGR 1020 ELEMENTARY GERMAN II (4).** LEC. 3, LAB. 2. Pr., FLGR 1010 Or FL placement test. Review of basic German grammar and vocabulary. Fundamentals of German language skills with progressive emphasis on conversation. Fulfills the College of Liberal Arts foreign language core requirement. Departmental approval.

**FLGR 1030 READING PROFICIENCY IN GERMAN (3).** LEC. 3. Reading proficiency for graduate students, who should consult their advisors for specific departmental language requirements. May not be used to satisfy undergraduate language requirements. Fall.

**FLGR 2000 INTERMEDIATE GERMAN ABROAD (1-10).** AAB/FLD. Course work at the intermediate level taken on an approved study program abroad. The student should consult with the German undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLGR 2010 INTERMEDIATE GERMAN I (4).** LEC. 3, LAB. 2. Pr., FLGR 1020 Or FL placement test. Language skills stressed; structural review and composition; readings in German literature and German civilization. Pr., 4 years of high school German. Departmental approval.

**FLGR 2020 INTERMEDIATE GERMAN II (4).** LEC. 3, LAB. 2. Pr., FLGR 2010 Or FL placement test. Continued review of German grammar and syntax, vocabulary building. Additional work in composition; readings in German literature and civilization. Departmental approval.

**FLGR 3000 JUNIOR ADVANCED GERMAN ABROAD (1-10).** AAB/FLD. Course work at the advanced level taken on an approved study program abroad. The student should consult with the German undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLGR 3010 BEGINNING GERMAN COMPOSITION AND CONVERSATION (3).** LEC. 3. Pr., FLGR 2020 Or FL placement test. Concentration on developing skills in written and spoken German. Review of German grammar and syntax, vocabulary building. Work in German phonology. Fall. FLGR 2020 or equivalent.

**FLGR 3020 INTERMEDIATE GERMAN COMPOSITION AND CONVERSATION (3).** LEC. 3. Pr., FLGR 2020 Or FL placement test. Further development of skills in written and spoken German. Continued review of selected topics of grammar and syntax, and vocabulary acquisition. Spring. FLGR 3010 or equivalent.

**FLGR 3030 ADVANCED GERMAN COMPOSITION AND CONVERSATION (3).** LEC. 3. Pr., FLGR 2020 Or FL placement test. Introduce linguistic principles governing mechanics of spoken German. Emphasizes English-German contrast and pronunciation difficulties. Further development of conversation skills.

**FLGR 3050 GERMAN CINEMA (3-6).** LEC. Sampling of important films from the 1920s to the present, including the intellectual, historical, cultural, and literary matrix of each film. Course may be repeated for a maximum of 6 credit hours.

**FLGR 3100 INTRODUCTION TO GERMAN LITERATURE (3).** LEC. 3. Pr., FLGR 2020. Basic literary genres and major figures in German literature from the 18th century to the present; literary methodologies and bibliographical tools. Required of all majors. Fall. Departmental approval.

**FLGR 3110 GERMAN CULTURE AND CIVILIZATION I (3).** LEC. 3. Pr., FLGR 2020. Social, political, and cultural history of Germany from the Germanic tribes to 1870. Fall. Departmental approval.

**FLGR 3120 GERMAN CULTURE AND CIVILIZATION II (3).** LEC. 3. Pr., FLGR 2020. Social, political and cultural history of Germany from 1870 to the present. Spring. Departmental approval.

**FLGR 3150 TOPICS IN GERMAN LITERATURE, LANGUAGE AND CULTURE (3).** LEC. 3. Pr., FLGR 2020. Critical study of specific literary, linguistic and/or cultural topics in German studies. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

**FLGR 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN GERMAN (1).** LEC. 1. Pr., FLGR 2010. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLGR 3930 DIRECTED STUDIES IN GERMAN (1-3).** IND. Directed study in area of special interest for the superior student in German. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLGR 4000 SENIOR ADVANCED GERMAN ABROAD (1-10).** AAB/FLD. Course work at the senior/advanced level taken on an approved study program abroad. The student should consult with the German undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLGR 4110 MASTERPIECES OF GERMAN LITERATURE I (3).** LEC. 3. Pr., FLGR 3010. Selected readings by representative authors from the periods of German Classicism, Romanticism, and Realism/Naturalism. Fall. Departmental approval.

**FLGR 4120 MASTERPIECES OF GERMAN LITERATURE II (3).** LEC. 3. Pr., FLGR 3010. Selected readings by representative authors from the periods of the early 20th century, Weimar Republic, and Postwar Germany. Departmental approval.

**FLGR 4150 GERMAN DRAMA (3).** LEC. 3. Pr., FLGR 3000-3999. Consideration, analysis, and criticism of selected German theater works by representative authors. Fall. Departmental approval.

**FLGR 4160 CONTEMPORARY GERMAN LITERATURE (3).** LEC. 3. Pr., FLGR 3000-3999. Consideration, analysis and criticism of recent selected German literary works. 3 FLGR 3000-level German courses. Departmental approval.

**FLGR 4310 GERMAN FOR BUSINESS AND ECONOMICS I (3).** LEC. 3. Pr., FLGR 2020. Emphasis on speaking, listening, reading and writing skills in professional, commercial German. Familiarization with German and European business practices. Fall. Departmental approval.

**FLGR 4320 GERMAN FOR BUS AND ECONOMICS II (3).** LEC. 3. Refinement of language proficiency skills. Active preparation for Prüfung Wirtschaftsdeutsch International, an examination recognized worldwide by business and industry. Spring. Departmental approval.

**FLGR 4330 GERMAN BUSINESS, MEDIA, AND SOCIETY (3).** LEC. 3. Pr., FLGR 2020. German language for business German media and society.

**FLGR 4510 GERMAN LITERATURE TRANSLATION I (3).** LEC. 3. From Goethe to Thomas Mann. Reading and analysis of significant literary works by major German writers from 1750 to 1945. Departmental approval.

**FLGR 4520 GERMAN LITERATURE TRANSLATION II (3).** LEC. 3. Postwar German literature. Reading and analysis of significant literary works by major German writers from 1945 to the present. Departmental approval.

## Foreign Languages and Literatures (FLNG)

**FLGR 4910 PRACTICUM IN GERMAN (1-6).** PRA. Number of hours and applicability toward major to be determined in consultation with the undergraduate director. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FLGR 4950 SEMINAR IN GERMAN LITERATURE (3).** SEM. 3. Pr., FLGR 3010. Readings in German literature from selected periods or in selected genres. Departmental approval.

**FLGR 4980 SENIOR CAPSTONE (1).** IND. 1. SU. Assessment of language skills through written paper and oral exam. Fall, Spring.

### ITALIAN (FLIT)

**FLIT 1000 ELEMENTARY ITALIAN ABROAD (1-10).** AAB/FLD. Course work at the elementary level taken on an approved study program abroad. The student should consult the Italian undergraduate advisor for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLIT 1010 ELEMENTARY ITALIAN I (4).** LEC. 3, LAB. 2. For students with little or no knowledge of Italian. Basic language skills. Exposure to culture. Fall.

**FLIT 1020 ELEMENTARY ITALIAN II (4).** LEC. 3, LAB. 2. Pr., FLIT 1010. Continuation of basic language skills. Exposure to culture. Fulfills the College of Liberal Arts foreign language core requirement. Departmental approval.

**FLIT 2000 INTERMEDIATE ITALIAN ABROAD (1-10).** AAB/FLD. Course work at the intermediate level taken on an approved study program abroad. The student should consult with the Italian undergraduate advisor for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLIT 2010 INTERMEDIATE ITALIAN I (4).** LEC. 3, LAB. 2. Pr., FLIT 1020. Special emphasis on conversation and Italian culture. Language skills stressed, grammar review. Fall. Departmental approval.

**FLIT 2020 INTERMEDIATE ITALIAN II (4).** LEC. 3, LAB. 2. Pr., FLIT 2010. Special emphasis on reading skills and Italian culture. Review of Italian grammar for English speakers. Spring. Departmental approval.

**FLIT 3000 JUNIOR ADVANCED ITALIAN ABROAD (1-9).** AAB/FLD. Course work at the junior/advanced level taken on an approved study program abroad. The student should consult with the Italian undergraduate advisor for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLIT 3030 ITALIAN CONVERSATION (3).** LEC. 3. Pr., FLIT 2010. Intensive practice in spoken Italian, based on texts and everyday situations, especially in contemporary Italian society. Includes review of vocabulary. Departmental approval.

**FLIT 3040/3044 ITALIAN COMPOSITION (3).** LEC. 3. Pr., FLIT 2020. Review of grammar and practice in writing on topics ranging from descriptions and personal opinions to current affairs and social problems. Departmental approval.

**FLIT 3050/3054 ITALIAN CINEMA (3).** LEC. 3. Sampling of important films from the time of the *telefonbianchi* (1937) to the present (major directors and trends), including the intellectual, historical, cultural, and literary matrix of each film.

**FLIT 3110 SPECIAL TOPICS IN ITALIAN (3).** LEC. 3. Pr., FLIT 2010. Supplementary instruction in Italian language, literature, culture. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLIT 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN ITALIAN (1).** LEC. 11. Pr., FLIT 1020. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLIT 3510 INTRODUCTION TO ITALIAN CULTURE IN ENGLISH (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Significant aspects of Italian culture, as reflected in arts, film, literature, history. Course may be repeated for a maximum of 9 credit hours.

**FLIT 3930 DIRECTED STUDIES IN ITALIAN (1-3).** IND. Directed study in area of special interest for the superior student in Italian. Departmental approval. Course may be repeated with change in topics.

**FLIT 5930 SEMINAR IN ITALIAN LITERATURE, LINGUISTICS, AND CULTURE (3).** LEC. 3. This course is designed to give students an opportunity to pursue topics of special interest, not treated in other course offerings. Each student will develop an individual plan of study, with faculty approval. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLIT 6970/6976 SEMINAR IN ITALIAN LITERATURE, LINGUISTICS, AND CULTURE (3).** LEC. 3. This course is designed to give students an opportunity to pursue topics of special interest, not treated in other course offerings. Each student will develop an individual plan of study, with faculty approval. Course may be repeated for a maximum of 9 credit hours.

### JAPANESE (FLJP)

**FLJP 1000 ELEMENTARY JAPANESE ABROAD (1-10).** LEC. Learning modern Japanese listening, writing, and reading in an integrated manner.

**FLJP 1010 ELEMENTARY JAPANESE I (4).** LEC. 3, LAB. 2. Fundamentals of Japanese. Stress on language skills with progressive emphasis on conversation. Exposure to Japanese civilization. Fall.

**FLJP 1020 ELEMENTARY JAPANESE II (4).** LEC. 3, LAB. 2. Pr., FLJP 1010. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization. Fall. Departmental approval.

**FLJP 2000 INTERMEDIATE JAPANESE ABROAD (1-10).** AAB/LEC. Pr., FLJP 1020. Departmental approval. Continued development of proficiency in modern Japanese; focus on speaking, listening, writing, and reading within cultural contexts.

**FLJP 2010 INTERMEDIATE JAPANESE I (4).** LEC. 3, LAB. 2. Pr., FLJP 1020. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization. Spring. Departmental approval.

**FLJP 2020 INTERMEDIATE JAPANESE II (4).** LEC. 3, LAB. 2. Pr., FLJP 2010. Continuation of FLJP 2010. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization. Spring. Departmental approval.

**FLJP 3000 ADVANCED JAPANESE ABROAD (1-10).** AAB/LEC. Pr., FLJP 1020. Departmental approval. Continued development of proficiency in modern Japanese; focus on speaking, listening, writing, and reading within cultural contexts.

**FLJP 3010 JAPANESE COMPOSITION AND CONVERSATION (3-6).** AAB. Pr., FLJP 2010. Intensive practice of written and spoken Japanese, based on contemporary social situations and texts. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FLJP 3050 JAPANESE CINEMA (3).** LEC. 3. This course introduces to students to Japanese films, with particular focus on representations of history from the 1930s to the contemporary. Course may be repeated for a maximum of 6 credit hours.

**FLJP 3450 TOPICS IN JAPANESE LITERATURE AND CULTURE (3-6).** AAB/LEC. Critical study of specific Japanese literary/cultural topics. Course may be repeated for a maximum of 6 credit hours.

**FLJP 3930 DIRECTED STUDY IN JAPANESE (3).** LEC. 3. Pr., FLJP 2020. Directed study in area of special interest for the superior student in Japanese. Course may be repeated for a maximum of 6 credit hours.

### LATIN (FLLN)

**FLLN 1010 ELEMENTARY LATIN I (4).** LEC. 3, LAB. 2. For students with little or no knowledge of Latin. Knowledge and skills necessary for reading classical Latin. Fall.

**FLLN 1020 ELEMENTARY LATIN II (4).** LEC. 3, LAB. 2. Pr., FLLN 1010. Introduction to the knowledge and skills necessary for reading classical Latin. Fulfills College of Liberal Arts core foreign language requirement. Spring. Departmental approval.

**FLLN 2010 INTERMEDIATE LATIN I (4).** LEC. 3, LAB. 2. Pr., FLLN 1020. Review of classical Latin grammar with reading of selections from Latin literature. Fall. FLLN 1020 or 4 years of high school Latin Departmental approval.

**FLLN 2020 INTERMEDIATE LATIN II (4).** LEC. 3, LAB. 2. Pr., FLLN 2010. Continuation of FLLN 2010. Review of classical Latin grammar with reading of selections from Latin literature. Fulfills the College of Liberal Arts foreign language core requirement. Spring. Departmental approval.

**FLLN 3030 READING PROFICIENCY IN LATIN (3).** LEC. 3. To prepare graduate students to pass the graduate proficiency exam in Latin. Students should check with their Graduate Director for Departmental language requirements before enrolling. Departmental approval.

**FLLN 3110 LATIN LITERATURE (3).** LEC. 3. Pr., FLLN 2010. Advanced readings in Latin prose and poetry. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

**FLLN 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN LATIN (1).** LEC. 1. Pr., FLLN 1020. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLLN 3510 ROMAN LITERATURE AND CULTURE IN TRANSLATION (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Roman cultural practices and ideology with a focus on literary evidence. Readings in English.

**FLLN 3930 DIRECTED STUDIES IN LATIN LITERATURE (1-3).** IND. Independent study of Latin Text(s). Topic proposed by student in conjunction with faculty advisor. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

### FOREIGN LANGUAGE (FLNG)

**FLNG 1000 ELEMENTARY FOREIGN LANGUAGE ABROAD (1-10).** AAB/FLD. For languages not currently taught in the department of Foreign Languages and Literatures, but taken through approved distance learning or study abroad programs. Credit awarded in consultation with Department chair. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

## Foreign Languages and Literatures (FLNG)

**FLNG 1010 ELEMENTARY FOREIGN LANGUAGE (4).** LEC. 4. For languages not currently taught in the Department of Foreign Language and Literatures. Departmental approval.

**FLNG 1020 ELEMENTARY FOREIGN LANGUAGE (4).** LEC. 4. Pr., FLNG 1010. For languages not currently taught in the Department of Foreign Language and Literatures. Departmental approval.

**FLNG 2000 INTERMEDIATE FOREIGN LANGUAGE (1-10).** AAB/LEC. For languages not currently taught in the Department of Foreign Languages and Literatures, but taken through approved distance learning or study abroad programs. Credit awarded in consultation with department chair. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLNG 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Directed readings and research culminating in a thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

### RUSSIAN (FLRU)

**FLRU 1010/1013/1014 ELEMENTARY RUSSIAN I (4).** LEC. 3, LAB. 2. Fundamentals of Russian. Stress on language skills, progressive emphasis on conversation. Exposure to Russian culture and civilization.

**FLRU 1020/1023/1024 ELEMENTARY RUSSIAN II (4).** LEC. 3, LAB. 2. Pr., FLRU 1010 or FLRU 1013 or FLRU 1014. Fundamentals of Russian. Stress on language skills, progressive emphasis on conversation. Exposure to Russian culture and civilization. Fulfills College of Liberal Arts foreign language core requirement.

**FLRU 2010 INTERMEDIATE RUSSIAN I (4).** LEC. 3, LAB. 2. Pr., FLRU 1020. Stress on language skills, structural review and composition. Continued exposure to Russian civilization. Departmental approval.

**FLRU 2020 INTERMEDIATE RUSSIAN II (4).** LEC. 3, LAB. 2. Pr., FLRU 2010. Stress on language skills, structural review and composition. Continued exposure to Russian civilization. Departmental approval.

**FLRU 2510 RUSSIAN CULTURE IN ENGLISH (3).** LEC. 3. Intensive exposure to Russian culture from the 10th century to the Revolution as reflected in the fine arts and literature.

**FLRU 2520 RUSSIA TODAY IN ENGLISH (3).** LEC. 3. Intensive introduction to Russian culture from the Revolution to the present, as reflected in the fine arts and literature.

### SPANISH (FLSP)

**FLSP 1000 ELEMENTARY SPANISH ABROAD (1-10).** AAB/FLD. Course work at the elementary level. This credit may substitute for required 1000 level courses in Spanish. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLSP 1010 ELEMENTARY SPANISH I (4).** LEC. 3, LAB. 2. Basic language skills stressed with progressive emphasis on conversation. Exposure to Hispanic civilization. For students with less than 2 years of high school Spanish or FL placement test.

**FLSP 1020 ELEMENTARY SPANISH II (4).** LEC. 3, LAB. 2. Pr., FLSP 1010 Or 4 years of high school Latin, departmental approval, or FL placement test. Fundamentals of Spanish language skills stressed with progressive emphasis on conversation. Exposure to Hispanic civilization. Fulfills College of Liberal Arts foreign language core requirement.

**FLSP 1030 READING PROFICIENCY IN SPANISH (3).** LEC. 3. SU. Enables graduate students to read and understand scholarly material in Spanish related to their field of study. May not be used to satisfy undergraduate language requirements. Spring. Departmental approval.

**FLSP 2000 INTERMEDIATE SPANISH ABROAD (1-10).** AAB/FLD. Course work at the intermediate level taken on an approved study program abroad. The student should consult with the Spanish undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLSP 2010 INTERMEDIATE SPANISH I (4).** LEC. 3, LAB. 2. Pr., FLSP 1020 Or FL placement test. A review of grammatical structures, development of reading and writing skills, and increased understanding of Hispanic cultures. Fall, Spring. Departmental approval.

**FLSP 2020 INTERMEDIATE SPANISH II (4).** LEC. 3, LAB. 2. Pr., FLSP 2010 Or FL placement test. Continued review of grammatical structures, development of reading and writing skills, and increased understanding of Hispanic cultures. Fall, Spring. Departmental approval.

**FLSP 3000 JUNIOR ADVANCED SPANISH ABROAD (1-9).** AAB/FLD. Course work at the junior/advanced level taken on an approved study program abroad. The student should consult with the Spanish undergraduate director for an estimation of credit prior to going abroad. Course may be repeated for a maximum of 9 credit hours. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**FLSP 3010 SPANISH PHONETICS (3).** LEC. 3. Pr., FLSP 2020 Or FL placement test. Training in practical phonetics with an emphasis on pronunciation correctives. Fall, Spring. Departmental approval.

**FLSP 3020 SPANISH SYNTAX (3).** LEC. 3. Pr., FLSP 2020 Or FL placement test. Sentence structure in Spanish emphasizing the interrelationship among the various parts of speech. Fall, Spring. Departmental approval.

**FLSP 3030 SPANISH CONVERSATION (3).** LEC. 3. Pr., FLSP 2020 Or FL placement test. Intensive practice in spoken Spanish, based on texts and everyday situations, especially in contemporary Spanish society. Includes review of vocabulary. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FLSP 3040 SPANISH COMPOSITION (3).** LEC. 3. Pr., FLSP 2020 Or FL placement test. Review of grammar and practice in writing on topics ranging from descriptions and personal opinions to current affairs and social problems. Departmental approval.

**FLSP 3100 INTRODUCTION TO HISPANIC LITERATURE (3).** LEC. 3. Pr., FLSP 2020. Study of literary genres, rhetorical figures, and other critical concepts. Literary analysis of Spanish and Spanish American texts. Fall, Spring.

**FLSP 3110 SPANISH CIVILIZATION I (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Culture of Spain up to 1700. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization. Departmental approval. Fall.

**FLSP 3120 SPANISH CIVILIZATION II (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Culture of Spain from 1700 to the present. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization. Spring.

**FLSP 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN SPANISH (1).** LEC. 1. Pr., FLSP 2010. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLSP 3210 SPANISH-AMERICAN CIVILIZATION I (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Intensive exposure to the culture of Spanish America from Pre-Columbian times through the Independence movement. Fall.

**FLSP 3220 SPANISH-AMERICAN CIVILIZATION II (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Intensive exposure to the culture of Spanish America from Independence to the present, as reflected in the fine arts and literature. Spring.

**FLSP 3310 COMMERCIAL SPANISH TRANSLATION (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Introduction to the techniques of English/Spanish and Spanish/English translation in a commercial environment, including correspondence, technical documents, advertising and oral translation. Fall.

**FLSP 3970 SPECIAL TOPIC IN HISPANIC FILM (3).** LEC. 3. The main purpose of the Topics in Hispanic Film course is to study film as a window into Hispanic cultures--both Spanish and Spanish-American. Course may be repeated for a maximum of 6 credit hours.

**FLSP 4000 SENIOR ADVANCED SPANISH ABROAD (1-9).** AAB/FLD. Course work at the senior/advanced level taken on an approved study program abroad. The student should consult with the Spanish undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLSP 4020 CONTINUING SPANISH SYNTAX (1-3).** AAB/IND. Continuing practice in Spanish syntax. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FLSP 4030 CONTINUING SPANISH CONVERSATION (1-3).** AAB/IND. Continuing practice in Spanish conversation. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FLSP 4040 CONTINUING SPANISH COMPOSITION (1-3).** AAB/IND. Continuing practice in Spanish composition. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FLSP 4110 MASTERPIECES OF SPANISH LITERATURE (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Major works of Spanish literature from medieval times to the present. Fall.

**FLSP 4120 TOPICS IN SPANISH LITERATURE (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Readings in Spanish literature. Spring. Course may be repeated with change in topic.

**FLSP 4210 MASTERPIECES OF SPANISH-AMERICAN LITERATURE (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Major works of Spanish American literature from Colonial times to the present. Fall.

**FLSP 4220 TOPICS IN SPANISH-AMERICAN LITERATURE (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Readings in Spanish American Literature. Spring. Course may be repeated with a change in topic.

**FLSP 4310 BUSINESS SPANISH I (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Business vocabulary and terminology, business practices and cultural influences in the Hispanic world. Fall, Spring.

**FLSP 4320 BUSINESS SPANISH II (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Business vocabulary and terminology, business practices and cultural influences in the Hispanic world. Fall, Spring.

**FLSP 4330 TOPICS IN BUSINESS SPANISH (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. Study of an aspect of Spanish business terminology/ documentation. Course may be repeated with change in topic.

## Forest Engineering (FOEN)

**FLSP 4420 TOPICS IN HISPANIC LITERATURE AND CULTURE (3).** LEC. 3. Pr., FLSP 3020 or FLSP 3040. An analysis of the cultural milieu which influences artistic creativity within a historical period.

**FLSP 4510 SPANISH LITERATURE TRANSLATION (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Major works of Spanish literature in English translation. Departmental approval.

**FLSP 4520 SPANISH-AMERICAN LITERATURE IN TRANSLATION (3).** LEC. 3. Pr., ENGL 1120 or ENGL 1127. Major works of Spanish American Literature in English translation. Departmental approval.

**FLSP 4910 PRACTICUM IN SPANISH (1-3).** AAB/PRA. Academic credit for practical work experience related to the major field. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FLSP 4980 SENIOR CAPSTONE (1).** IND. 1. SU. Assessment of language skills through written paper and oral exam. Fall, Spring.

**FLSP 5010 ADVANCED SPANISH PHONETICS (3).** LEC. 3. Pr., FLSP 3000-3999. Advanced training in Spanish phonetics with specific course materials determined by needs of students. Four 3000-level Spanish courses Departmental approval.

**FLSP 5020 ADVANCED SPANISH SYNTAX (3).** LEC. 3. Pr., FLSP 3000-3999. Advanced training in Spanish syntax and stylistics with specific course materials determined by needs of students. Four 3000-level Spanish courses Departmental approval.

**FLSP 6010 ADVANCED SPANISH PHONETICS (3).** LEC. 3. Pr., FLSP 3000-3999. Advanced training in Spanish phonetics with specific course materials determined by needs of students. Four 3000-level Spanish courses Departmental approval.

**FLSP 6020 ADVANCED SPANISH SYNTAX (3).** LEC. 3. Pr., FLSP 3000-3999. Advanced training in Spanish syntax and stylistics with specific course materials determined by needs of students. Four 3000-level Spanish courses Departmental approval.

**FLSP 7000 GRADUATE SPANISH ABROAD (1-9).** AAB/FLD. Course work at the graduate level taken on an approved study program abroad. The student should consult with the Spanish graduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FLSP 7010 HISTORY OF THE SPANISH LANGUAGE (3).** LEC. 3. The diachronic study of the development of the Spanish language from its Latin origins to the present.

**FLSP 7020 SPANISH LINGUISTICS (3).** LEC. 3. A synchronic study of the Spanish language focusing on phonology, morphology, syntax and lexicon, taking into consideration dialectal differences.

**FLSP 7030 APPLIED SPANISH LINGUISTICS (3).** LEC. 3. A critical study of the current research done in applied linguistics regarding the acquisition of Spanish by non-native speakers, with emphasis on the problems faced by adult English-speaking individuals.

**FLSP 7050 LITERARY CRITICISM AND THEORY (3).** LEC. 3. A study of contemporary literary criticism and theory as it relates to Spanish and Spanish American Literature.

**FLSP 7060 RESEARCH METHODS (1).** LEC. 1. SU. An introduction to the methods of scholarly investigation in literary history and criticism. Credit may not be used to satisfy degree requirements.

**FLSP 7090 INTRODUCTION TO COLLEGE LEVEL SPANISH INSTRUCTION (1).** LEC. 1. SU. Instruction for graduate teaching assistants including critical observation in performance and guidance by a designated supervisory professor. Required of all students who hold a graduate teaching assistantship. Credit may not be used to satisfy degree requirements.

**FLSP 7100 SPANISH MEDIEVAL LITERATURE I (3).** LEC. 3. A critical and historical study of medieval Spanish literature through representative texts from the various genres of the period beginning with the origins of Spanish literature until 1299 a.d.

**FLSP 7110 SPANISH MEDIEVAL LITERATURE II (3).** LEC. 3. A study of medieval Spanish literature through representative texts from the various genres of the period corresponding to the years 1300-1500 a.d.

**FLSP 7120 16TH CENTURY SPANISH LITERATURE (3).** LEC. 3. A critical and historical study of representative literary works in all genres from around 1492 to the end of the 16th Century.

**FLSP 7130 17TH CENTURY SPANISH LITERATURE (3).** LEC. 3. A critical and historical study of representative literary works in all genres in the 17th Century with emphasis on Baroque literature.

**FLSP 7140 SURVEY OF 18TH AND 19TH CENTURY SPANISH LITERATURE (3).** LEC. 3. Survey of the major literary/cultural/historical trends present in 18th and 19th Century Spanish literature.

**FLSP 7150 HISPANIC COLONIAL LITERATURE OF THE UNITED STATES (3).** LEC. 3. Explores works of literature dealing with the Colonial Hispanic exploration and colonization of the United States from the 16th to 19th centuries.

**FLSP 7160 20TH CENTURY SPANISH LITERATURE (3).** LEC. 3. A critical and historical study of 20th-century Peninsular literature from the Generation of 98 to Spanish post-war literature through representative works in all genres.

**FLSP 7170 CONTEMPORARY SPANISH LITERATURE (3).** LEC. 3. A critical and historical study of contemporary literature from the Spanish Civil War to the present through representative works in all genres.

**FLSP 7210 COLONIAL SPANISH-AMERICAN LITERATURE (3).** LEC. 3. A study of representative literary genres and authors of Vice Regal America from Spanish transcription of Pre-Columbian works to those just prior to the Wars of Independence.

**FLSP 7220 SPANISH AMERICAN POETRY I (3).** LEC. 3. A critical and historical study of the development of Spanish American poetry from 1824 to the first generation of Modernism.

**FLSP 7230 SPANISH AMERICAN POETRY II (3).** LEC. 3. A critical and historical study of the development of Spanish American Poetry from Post-Modernism to the present.

**FLSP 7240 SPANISH-AMERICAN POST-COLONIAL PROSE TEXTS TO THE NEW NARRATIVE (3).** LEC. 3. A critical and historical study of representative essayists and fiction writers of the 19th and 20th centuries predating the New Narrative.

**FLSP 7250 THE NEW NARRATIVE IN SPANISH-AMERICAN FICTION: MODERNIST AND POST-MODERNIST TEXTS (3).** LEC. 3. A critical and historical study of major works of Modernist and Postmodernist fiction that achieved international acclaim during the second half of the 20th century.

**FLSP 7270 SPANISH AMERICAN THEATER I (3).** LEC. 3. A critical and historical study of the development of Spanish American Theater emphasis on the period prior to 1900.

**FLSP 7280 SPANISH AMERICAN THEATER II (3).** LEC. 3. A critical and historical study of the development of Spanish American theater from 1900 to present.

**FLSP 7300 DON QUIJOTE (3).** LEC. 3. A critical study of Cervantes' masterpiece.

**FLSP 7970/7976 SPECIAL TOPICS IN LINGUISTICS, LITERATURE AND CULTURE (3).** AAB/SEM. 3. An in-depth study of a movement of authors an analysis of the cultural milieu which influences creativity or an investigation of a specific linguistic phenomenon in Spanish. Course may be repeated with a change in topic. BA in Spanish or BS in Foreign Language Education in Spanish. Course may be repeated with change in topics.

**FLSP 7990 RESEARCH AND THESIS (1-10).** MST. Directed readings and research culminating in a thesis. Course may be repeated with change in topic.

## Forest Engineering (FOEN)

Dean Richard Brinker - 844-1007

Dr. Steve Taylor - 844-3534

**FOEN 3000 INTRODUCTION TO FORESTRY OPERATIONS (2).** LEC. 1, LAB. 3. Introduction to basic field operations in Forestry including site preparation and planting, harvesting and primary manufacturing processes. Summer.

**FOEN 3040 FOREST SURVEYING (3).** LEC. 1, LAB. 8. Basic land surveying concepts and procedures as applied to Forestry. Use of basic surveying instruments and calculations for land areas, boundaries, and topographic features. Summer.

**FOEN 4220 LOW VOLUME ROAD DESIGN (3).** LEC. 2, LAB. 3. Pr., FOEN 3040 or BSEN 3230. Engineering design of low volume, unpaved roads, especially for forestry applications, including preconstruction planning, construction and maintenance, horizontal and vertical alignment, earthwork volume and distribution analysis, cost analysis, and Best Management Practices. Fall.

**FOEN 4730 APPLICATION OF TIMBER HARVESTING TECHNIQUES (2).** LEC. 1, LAB. 3. Pr., FOEN 5700. Business considerations including safety, regulations, contracts, deeds and cost accounting and analysis combined with equipment operation and maintenance. Fall.

**FOEN 4930 DIRECTED STUDIES (1-3).** IND. Faculty supervision of individual student investigations of specialized problems in forest engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FOEN 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Topics of an undergraduate nature pertinent to Forest Engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FOEN 4970 SPECIAL TOPICS (1-4).** LEC. Individual or small group study of a specialized area in forest engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**FOEN 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Directed research and Honors Thesis. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FOEN 5230 ENGINEERED WOOD STRUCTURE DESIGN (3).** LEC. 2, LAB. 3. Pr., ENGR 2070. Load, deflection criteria; engineering characteristics of wood; designing wood components and mechanical connections; shear walls and diaphragms; trusses; bridges; post-frame construction. Fall.

## Forestry (FORY)

**FOEN 5700 HARVESTING (3).** LEC. 2, LAB. 3. Pr., FORY 3180. Analysis of the administration of timber harvest, equipment choice, planning methods, movement of timber products, machine and system costs, balancing of harvesting systems, logging safety, and environmental impact. Spring.

**FOEN 5710 TIMBER HARVESTING ANALYSIS METHODS (3).** LEC. 2, LAB. 3. Pr., FOEN 3000. Analysis methods for timber harvesting productivity and costs including gathering of time and production data, preparation of data for analysis and statistical modeling. Spring.

**FOEN 6230 ENGINEERED WOOD STRUCTURE DESIGN (3).** LEC. 2, LAB. 3. Pr., ENGR 2070. Load, deflection criteria; engineering characteristics of wood; designing wood components and mechanical connections; shear walls and diaphragms; trusses; bridges; post-frame construction. Fall.

**FOEN 6700 HARVESTING (3).** LEC. 2, LAB. 3. Pr., FORY 3180. Analysis of the administration of timber harvest, equipment choice, planning methods, movement of timber products, machine and system costs, balancing of harvesting systems, logging safety, and environmental impact. Spring.

**FOEN 6710 TIMBER HARVESTING ANALYSIS METHODS (3).** LEC. 2, LAB. 3. Pr., FOEN 3000. Analysis methods for timber harvesting productivity and costs including gathering of time and production data, preparation of data for analysis and statistical modeling. Spring.

**FOEN 7930 DIRECTED STUDIES (1-3).** IND. Faculty supervision of individual student investigations of advanced specialized problems in forest engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FOEN 7970 SPECIAL TOPICS (1-4).** LEC. Individual or small group study of an advanced specialized area in forest engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

### Forestry Products (FOPR)

Dr. Greg Somers - 844-1006

**FOPR 3390 INTRODUCTION TO WOOD SCIENCE AND FOREST PRODUCTS (3).** LEC. 2, LAB. 3. Pr., FORY 3020. The basic properties of wood and their impact on the manufacture of forest products. Identification of important products and woods. Fall.

**FOPR 4930 DIRECTED STUDY (1-3).** IND. Study of timely topics in forest products on an as needed or as available basis. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FOPR 5350 FOREST PRODUCTS PRODUCTION AND OPERATIONS MANAGEMENT (3).** LEC. 3. Pr., FOPR 3390 Production and operations management concepts, principles and techniques applied to wood products manufacturing. Problem situation analyses with emphasis on economic decision making. Fall.

**FOPR 5360 FOREST PRODUCTS MARKETING (3).** LEC. 3. Pr., FOPR 3390. Managerial approach to marketing of forest products. In-depth examination of major forest products markets, the Marketing Mix concept, and marketing strategy and tactics. Spring.

**FOPR 6350 FOREST PRODUCTS PRODUCTION AND OPERATIONS MANAGEMENT (3).** LEC. 3. Pr., FOPR 3390. Production and operations management concepts, principles and techniques applied to wood products manufacturing. Problem situation analyses with emphasis on economic decision making. Fall.

**FOPR 6360 FOREST PRODUCTS MARKETING (3).** LEC. 3. Pr., FOPR 3390. Managerial approach to marketing of forest products. In-depth examination of major forest products markets, the Marketing Mix concept, and marketing strategy and tactics. Spring.

**FOPR 7030 PHYSICS OF WOOD AND WOOD COMPOSITES (3).** LEC. 3. Hydrothermophysics, dimensional stability, acoustics, piezoelectric properties and defectoscopy of wood and its composites. Fall. Departmental approval.

**FOPR 7040 MECHANICS OF WOOD AND WOOD COMPOSITES (3).** LEC. 3. Micro- and macro-mechanical behavior of wood and its composites. Mechanical behavior of glue joints. Modeling engineering performance of wood and its composites. Fall. Departmental approval.

**FOPR 7060 ADVANCED FOREST PRODUCTS PRODUCTION AND OPERATIONS MANAGEMENT (3).** LEC. 3. Pr., FOPR 5350 or FOPR 6350. Analysis of production/operations management problem situations in wood products manufacturing through systems approach and quantitative modeling techniques. Spring.

**FOPR 7930 DIRECTED STUDIES (1-3).** IND. Study of timely topics in forest products on an as needed or as available basis. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FOPR 7970 SPECIAL TOPICS (1-4).** IND. Analysis of a problem in forest products or wood science involving library research, laboratory or field work and a report on the findings. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**FOPR 7990 RESEARCH AND THESIS (1-15).** MST. Departmental approval. Course may be repeated with change in topics.

**FOPR 8930 DIRECTED STUDIES (1-3).** IND. Study of timely topics in forest products on an as needed or as available basis. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FOPR 8970 SPECIAL TOPICS (1-4).** IND. Analysis of a problem in forest products or wood science involving library research, laboratory or field work and a report on the findings. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**FOPR 8990 RESEARCH AND DISSERTATION (1-15).** DSR. Departmental approval. Course may be repeated with change in topics.

### Forestry (FORY)

Dr. Greg Somers - 844-1006

**FORY 3020 FOREST BIOLOGY (2).** LEC. 1, LAB. 3. Introduction to biological and ecological principles as trees in forest management; identification of major tree species. Summer.

**FORY 3050 FIELD MENSURATION (3).** LEC. 1, LAB. 8. Basic concepts and procedures for measuring trees, stands and other forest resources; units of measure, log rules, volume tables, condition class mapping and timber estimation. Summer.

**FORY 3060 INTRODUCTION TO FOREST MANAGEMENT STRATEGIES (2).** LEC. 1, LAB. 3. Biological, social, and economic principles underlying forest management strategies, the diversity of forestry enterprises, and the complexities facing forest managers. Summer.

**FORY 3100 DENDROLOGY (3).** LEC. 2, LAB. 3. Pr., FORY 3020. Taxonomy and identification of important forest trees of the U.S., including cover types of forest regions. Fall.

**FORY 3180 FOREST MEASUREMENTS I (3).** LEC. 2, LAB. 3. Pr., FORY 3050. Theoretical and empirical estimates of tree and log volumes, tree taper, and yield tables. Sampling design and analysis to estimate current conditions of timber stands.

**FORY 3200 FOREST TREE PHYSIOLOGY (3).** LEC. 3. Pr., FORY 3020. Relationship between cultural, environmental and genetic factors that affect metabolism and growth of individual trees. Fall.

**FORY 3440 ENVIRONMENTAL LAW (3).** LEC. 3. A review of environmental law including: competing interests; common law remedies; land use; and Federal statutes on water, air, toxins and waste. Spring.

**FORY 3500 FORESTRY FOR SMALL WOODLAND OWNERS (3).** LEC. 3. An appreciation of forest trees and the environment, the environmental functions of trees, and the economic potential of a balanced land-use plan. Spring.

**FORY 3540 ESTATE PLANNING (3).** LEC. 3. Planning for the disposition of assets including wills and trusts, the transfer tax system, and strategies to minimize the taxable estate. Spring.

**FORY 3640 TAXATION OF TIMBER AND OTHER NATURAL RESOURCES (2).** LEC. 2. Income taxation of natural resources, including passive loss rules, depletion and capital gains, and an introduction to taxation of businesses. Fall.

**FORY 4190 FOREST MEASUREMENTS II (3).** LEC. 2, LAB. 3. Pr., FORY 3180. Factors affecting and mathematical principles of tree-volume and stand growth. Spring.

**FORY 4230 FOREST ECOLOGY (3).** LEC. 3. Pr., FORY 3100 and FORY 3200 and P/C, AGRN 2040. Forests as functional systems, the biotic and abiotic environment, temporal changes in ecosystem structure and function, application of ecological information. Spring.

**FORY 4440 FOREST FIRE MANAGEMENT (3).** LEC. 1, LAB. 6. Pr., FORY 4230 or BIOL 3060. The management of fire, both as a tool and wildfire suppression in the management of forested ecosystems. Emphasis placed on experience, technique and administration. Spring.

**FORY 4500 NATURAL RESOURCES LAW AND ECONOMICS (3).** LEC. 3. Pr., ECON 2020. Economic causes, rationale, and consequences of natural resources. Summer.

**FORY 4550 PROPERTY LAW (3).** LEC. 3. Land ownership, transfer and management including trespass, nuisance, adverse possession, easements, concurrent ownership, land use regulations and regulatory takings. Fall.

**FORY 4820 FORESTRY IN THE PRIVATE SECTOR (2).** SEM. 4. Pr., FORY 5410. Management systems and practices used in wood purchasing, timber harvesting and timberland management including public relations, forest sustainability, certification and personal business skills. Spring.

**FORY 4830 INDUSTRIAL WOOD PROCUREMENT PRACTICUM (1).** PRA. 2. SU. Pr., FORY 3050. Strategies, field and office procedures involved in purchasing wood for an industrial forestry firm. Taught as a weekend field exercise at Solon Dixon Forest Education Center. Course may be repeated for a maximum of 2 credit hours.

**FORY 4930 DIRECTED STUDY (1-3).** AAB/IND. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

## Forestry (FORY)

**FORY 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Topics of an undergraduate nature pertinent to Forestry. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FORY 4970 SPECIAL TOPICS (1-4).** LEC. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**FORY 4980 SENIOR CAPSTONE PROJECT (4).** LEC. 4. Pr., FORY 5230 and FORY 5410. Integrated study of Forest Resource Management using a case-study approach through development of a comprehensive plan related to the declared emphasis. Spring.

**FORY 4990 SCHOLARS PROJECT (1-3).** IND. A problem in the student's area of interest. To promote independent work, library research, field work, data analysis or other tasks. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**FORY 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**FORY 5140 FOREST REGENERATION AND SEEDLING PRODUCTION (3).** LEC. 3. Principles of forest nursery seedling culture. Evaluation of activities to improve out planting performance. Plantation establishment problems and practices in Southern US. Spring.

**FORY 5150 FOREST HEALTH (3).** LEC. 3. Pr., FORY 3020 or BIOL 3060. Importance, taxonomy, identification and integrated pest management strategies of principle disease, insect and abiotic disorders of forest and shade trees from seedlings to maturity and forest products. Fall.

**FORY 5151 FOREST HEALTH LABORATORY (1).** LAB. 1. Coreq., FORY 5150. Identification of basic diseases and insects that affect forest health along with identification of their damage; the processes of pathogen infection and symptomology; and the process of wood decay studied in a laboratory and field environment. Credit will not be given for both FORY 5151 and FORY 6151. Fall.

**FORY 5230 SILVICULTURE (4).** LEC. 3, LAB. 3. Pr., FORY 4230 or BIOL 5140 or BIOL 3060 or BSEN 3230. Principles and methods of controlling establishment, growth and quality of forest stands. Application of ecological principles to manipulation of forest ecosystems to meet specific objectives. Fall.

**FORY 5240 FOREST WATERSHED MANAGEMENT (2).** LEC. 2. Pr., FORY 5230 or BIOL 5140. The hydrologic cycle in forests. Effects of forestry practices on erosion processes, site quality, and water quality. Spring.

**FORY 5250 WETLAND ECOLOGY AND MANAGEMENT (3).** LEC. 3. Pr., BIOL 3060 or FORY 4230. Wetland ecology in the southeastern U.S. with emphasis on soils, hydrology, biology, and policies and practices related to agriculture, forestry, wildlife. Spring.

**FORY 5310 ENVIRONMENTAL ETHICS (3).** LEC. 3. Critical examination of environmental ethics: historical development and various ethical perspectives. Examination of current environmental issues using perspectives covered in course. Fall.

**FORY 5400 FOREST ECONOMICS (3).** LEC. 2, LAB. 3. Pr., FORY 3180. Marginal analysis, investment theory, resource supply, economics of conservation, and taxation principles applied to forestry. Structure and performance of forest products markets. Spring.

**FORY 5410 FOREST MANAGEMENT AND ADMINISTRATION (3).** LEC. 2, LAB. 3. Pr., FORY 5400 and FORY 4190. Quantitative approaches to decision making in Forestry with an emphasis on the interests of large scale firms and agencies. Fall.

**FORY 5420 FOREST POLICY (3).** LEC. 3. Pr., FORY 5400. History and current situations regarding both public and private sector aspects of forest policies, and the effects of political, economic, legal, and social dynamics. Spring.

**FORY 5440 INTERNATIONAL FORESTRY (2).** LEC. 2. Presentation of the world's forested ecosystems, their characteristics, silviculture, utilization, international trade and policies affecting their sustainable use. Spring.

**FORY 5450 FOREST SECTOR ECONOMICS (3).** LEC. 3. Pr., FORY 5400. Status, trend, employment and other fundamentals of forest industry. Timber supply and demand, forest products supply and demand, technological change, international trade. Spring.

**FORY 5470 GIS APPLICATIONS IN NATURAL RESOURCES (2).** LEC. 1, LAB. 3. Basic understanding of GIS through discussion of the basic components of a GIS and how GIS are used in forestry applications. Fall. Departmental approval.

**FORY 5480 GIS DATABASE DESIGN AND ANALYSIS (2).** LEC. 2. Geographic information system database planning, design, creation, management and analysis using a project oriented approach. Spring. Departmental approval.

**FORY 5650 URBAN FORESTRY (3).** LEC. 2, LAB. 3. Pr., FORY 3100 or HORT 3220. Principles and concepts of tree establishment, management and health in an urban environment. Case studies of urban forestry programs are presented. Spring.

**FORY 6151 FOREST HEALTH LABORATORY (1).** LAB. 1. Coreq., FORY 6150. Identification of basic diseases and insects that affect forest health along with identification of their damage; the processes of pathogen infection and symptomology; and the process of wood decay studied in a laboratory and field environment. Credit will not be given for both FORY 5151 and FORY 6151.

**FORY 6150 FOREST HEALTH (3).** LEC. 3. Pr., FORY 3020 or BIOL 3060. Importance, taxonomy, identification and integrated pest management strategies of principle disease, insect and abiotic disorders of forest and shade trees from seedlings to maturity and forest products. Fall.

**FORY 6230 SILVICULTURE (4).** LEC. 3, LAB. 3. Pr., FORY 4230 or BIOL 3060 or BIOL 5140 or BIOL 6140 or BSEN 3230. Principles and methods of controlling establishment, growth and quality of forest stands. Application of ecological principles to manipulation of forest ecosystems to meet specific objectives. Fall.

**FORY 6240 FOREST WATERSHED MANAGEMENT (2).** LEC. 2. Pr., FORY 5230 or FORY 6230 or BIOL 5140 or BIOL 6140. The hydrologic cycle in forests. Effects of forestry practices on erosion processes, site quality, and water quality. Spring.

**FORY 6250 WETLAND ECOLOGY AND MANAGEMENT (3).** LEC. 3. Pr., BIOL 3060. Wetland ecology in the southeastern U.S. with emphasis on soils, hydrology, biology, and policies and practices related to agriculture, forestry, wildlife. Spring.

**FORY 6310 ENVIRONMENTAL ETHICS (3).** LEC. 3. Critical examination of environmental ethics. Historical development and various ethical perspectives. Examination of current environmental issues using perspectives covered in course. Fall.

**FORY 6400 FOREST ECONOMICS (3).** LEC. 2, LAB. 3. Pr., FORY 3180. Marginal analysis, investment theory, resource supply, economics of conservation, and taxation principles applied to forestry. Structure and performance of forest products markets. Spring.

**FORY 6410 FOREST MANAGEMENT AND ADMINISTRATION (3).** LEC. 2, LAB. 3. Pr., (FORY 5400 or FORY 6400) and FORY 4190. Quantitative approaches to decision making in Forestry with an emphasis on the interests of large scale firms and agencies. Fall.

**FORY 6420 FOREST POLICY (3).** LEC. 3. Pr., FORY 5400 or FORY 6400. History and current situations regarding both public and private sector aspects of forest policies, and the effects of political, economic, legal and social dynamics. Spring.

**FORY 6440 INTERNATIONAL FORESTRY (2).** LEC. 2. Presentation of the world's forested ecosystems, their characteristics, silviculture, utilization, international trade and policies affecting their sustainable use. Spring.

**FORY 6450 FOREST SECTOR ECONOMICS (4).** LEC. 4. Pr., FORY 5400 or FORY 6400. Fundamentals of forest industry, timber supply and demand, forest products supply and demand, technological change, international trade and development, sophisticated forest sector modeling. Spring.

**FORY 6470 GIS APPLICATIONS IN NATURAL RESOURCES (2).** LEC. 1, LAB. 3. Basic understanding of GIS through discussions of the components of a GIS and how GIS are used in natural resource applications. Fall. Departmental approval.

**FORY 6480 GIS DATABASE DESIGN AND ANALYSIS (2).** LEC. 2. Geographic information system database planning, design, creation, management and analysis using a project oriented approach. Spring. Departmental approval.

**FORY 6650 URBAN FORESTRY (3).** LEC. 2, LAB. 3. Pr., FORY 3100 or HORT 3220. Principles and concepts of tree establishment, management and health in an urban environment. Case studies of urban forestry programs are presented. Spring.

**FORY 7110 FOREST BIOGEOCHEMISTRY (3).** LEC. 2, LAB. 3. Pr., FORY 6230. Fundamental and applied aspects of forest biogeochemical processes at scales of the individual tree, forest community, and forest ecosystem.

**FORY 7160 ECOSYSTEM RESPONSES TO CHEMICAL CLIMATE CHANGE (3).** LEC. 2, LAB. 3. Pr., FORY 4230 and FORY 3200. Plant responses to changes in the chemical climate. Emphasis on sources, effects, methodologies used and ecosystem and global effects. Even years.

**FORY 7170 ECOPHYSIOLOGY OF FOREST TREES (3).** LEC. 3. Pr., BIOL 3100 or FORY 3200. Interactions among the environment, silvicultural practices, physiological mechanisms and tree growth. Integration of root, shoot and foliar functions and leaf, tree and stand level processes. Spring odd years.

**FORY 7210 ECOSYSTEM ECOLOGY (3).** LEC. 3. Pr., BIOL 3060 or FORY 4230 or BIOL 5140 or BIOL 6140. To create a conceptual model of the terrestrial ecosystem including spatial distributions over time; and the impact of human activity and natural disturbance. Spring.

**FORY 7330 ECOLOGY AND SILVICULTURE OF EASTERN HARDWOOD FORESTS (3).** LEC. 2, LAB. 3. Pr., FORY 4230. Silvicultural characteristics of major hardwood species and community composition, dynamics, site relationships, and silviculture of Southern and Eastern deciduous forests, emphasizing oaks. Fall odd years.

**FORY 7440 FOREST FINANCE AND INVESTMENT (3).** LEC. 3. Principles of corporate and real estate finance as applied to commercial timberland and the place of this asset class in individual and institutional portfolios. Spring. Departmental approval.

**FORY 7460 ADVANCED FOREST ECONOMICS (3).** LEC. 3. Evolution of the role of economics in forestry, policy and production analysis methods, non-market valuation, and regional analysis. Spring.

**FORY 7480 ADVANCED FOREST POLICY (3).** LEC. 3. Pr., FORY 5400 or FORY 6400. Policy process and players, theory and evolution of property rights, public



## Forestry and Wildlife Sciences (FOWS)

choice theory, land ethics, policy analysis, programs and statutory laws, forest policy in an international context. Spring odd years.

**FORY 7510 RESEARCH METHODS (2).** LEC. 1, LAB. 3. Overview of the scientific method and its application in forestry/natural resources research. Evaluation and preparation of project proposals with emphasis on research quality and written communication skills. Fall.

**FORY 7550 ADV STUDIES FOREST HYDROLOGY (3).** LEC. 3. In depth focus on components of the hydrologic cycle in forested landscapes and how changes in the landscape and management practices impact the hydrologic regime in the watershed. Spring. Departmental approval.

**FORY 7580 NATURAL RESOURCE POLICY ANALYSIS AND ADMINISTRATION (3).** LEC. 3. The policy-making process, the history of natural resource and environmental policy, and applied techniques in policy analysis. Summer.

**FORY 7850 URBAN FORESTRY SEMINAR (1).** SEM. 1. Presentation and discussion of research, scientific papers and issues related to urban forest establishment, care and planning. Credit will not be given for both FORY 7850 and HORT 7850. Fall.

**FORY 7910 PRACTICUM IN COLLEGE TEACHING (1).** PRA. 1. SU. Techniques and practice of collegiate teaching at the level of Graduate Assistant. Students work under direct supervision and tutelage of the instructor. Fall, Spring, and Summer.

**FORY 7930 DIRECTED STUDIES (1-3).** AAB/IND. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FORY 7950 SEMINAR (1).** SEM. 3. SU. Develop the ability and confidence in making oral presentations based upon research results and provide constructive criticism of peers' presentations. Spring.

**FORY 7970 SPECIAL TOPICS (1-4).** IND. Analysis of a problem in Forestry or wood utilization involving library research, laboratory or field work and a report on the findings. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**FORY 7980 MASTER OF NATURAL RESOURCES PAPER (2).** IND. In-depth study involving library review, data collection and/or data analysis. Departmental Program.

**FORY 7990 RESEARCH AND THESIS (1-15).** MST. Departmental approval. Course may be repeated with change in topics.

**FORY 8930 DIRECTED STUDIES (1-3).** IND. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**FORY 8970 SPECIAL TOPICS (1-4).** IND. Analysis of a problem in Forestry or wood utilization involving library research, laboratory or field work and report on the findings. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**FORY 8990 RESEARCH AND DISSERTATION (1-15).** DSR. Departmental approval. Course may be repeated with change in topics.

## Forestry and Wildlife Sciences (FOWS)

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**FOWS 1010 INTRODUCTION TO RENEWABLE NATURAL RESOURCES (1).** LEC. 1. Introduction to the wealth and breadth of renewable natural resources in the state, region, nation, and world. Speakers cover topics in forestry, wildlife, water, and soil. Fall, Spring.

**FOWS 2010 ENVIRONMENTAL INTERPRETATION (3).** LEC. 3. Communication theory as management and public relation stool for natural resource management. Fall.

**FOWS 3015 INTERNATIONAL ISSUES IN NATURAL RESOURCE MANAGEMENT (3).** FLD. 3. Examination of contemporary natural and cultural resource management practices and conservation programs through national and international program placements. Spring, Summer and Fall.

**FOWS 3025 INTERNATIONAL ISSUES IN COMMUNITY DEVELOPMENT (3).** FLD. 3. Examination of contemporary natural and cultural resource management practices and conservation programs through national and international program placements. Spring, Summer and Fall.

**FOWS 4310 ECOTOURISM (3).** LEC. 3. Principles, business considerations, and issues surrounding ecotourism, with emphasis on critique and connections to other industries. Spring.

**FOWS 5020 NATURAL RESOURCE ECOLOGY AND HABITAT MANAGEMENT (3).** LEC. 3. Ecological principles involved with managing habitats for wildlife and forest resources. Topics will include management strategies and development of management teams in multiple ecosystems. Fall.

**FOWS 5050 NATURAL RESOURCE ISSUES AT THE URBAN-RURAL INTERFACE (3).** LEC. 3. Urban development impacts on both individual and multiple resource issues and the complexities involved in human- environmental interactions. Spring.

**FOWS 5270 NATURAL RESOURCE POLICY (3).** LEC. 3. Departmental approval. Examination of attitudes, philosophies and policies that govern management of the natural resource. Spring.

**FOWS 5320 ENVIRONMENTAL SERVICES (3).** LEC. 3. Environmental services provided by ecosystems, with emphasis on human well-being and livelihood, and emerging market mechanisms. Spring.

**FOWS 5880 ECOLOGICAL ECONOMICS (3).** LEC. 3. Foundations, principles and empirical application of ecological economics to address current social and economic issues. Spring.

**FOWS 6020 NATURAL RESOURCE ECOLOGY AND HABITAT MANAGEMENT (3).** LEC. 3. Ecological principles involved with managing habitats for wildlife and forest resources. Topics will include management strategies and development of management teams in multiple ecosystems. Fall.

**FOWS 6050 NATURAL RESOURCE ISSUES AT THE URBAN-RURAL INTERFACE (3).** LEC. 3. Urban development impacts on both individual and multiple resource issues and the complexities involved in human- environmental interactions. Spring.

**FOWS 6270 NATURAL RESOURCE POLICY (3).** LEC. 3. Departmental approval. Examination of attitudes, philosophies and policies that govern management of the natural resource.

**FOWS 6320 ENVIRONMENTAL SERVICES (3).** LEC. 3. Environmental services provided by ecosystems, with emphasis on human well-being and livelihood, and emerging market mechanisms. Spring.

**FOWS 6880 ECOLOGICAL ECONOMICS (3).** LEC. 3. Foundations, principles and empirical application of ecological economics to address current social and economic issues. Spring.

## WILDLIFE SCIENCES (WILD)

Dr. Greg Somers - 844-1006

**WILD 1100 WILDLIFE FOOD PLOT ESTABLISHMENT (2).** LEC. 2. Fundamental concepts, issues, and concerns related to wildlife food plots and practical procedures for establishment of wildlife food plots. Fall.

**WILD 2050 WILDLIFE CONSERVATION HISTORY AND LAW (3).** LEC. 3. The history of wildlife conservation in North America, the conservation problems that have arisen since European settlement, and the laws and practices that have evolved to remedy them. Fall.

**WILD 3280 PRINCIPLES OF WILDLIFE MANAGEMENT (3).** LEC. 3. Pr., P/C, BIOL 3060. Fundamentals of wildlife management theory, application, and administration. Fall.

**WILD 3281 WILDLIFE MANAGEMENT LABORATORY (1).** LAB. 3. Coreq., WILD 3280. Laboratory experiences in wildlife management. Fall.

**WILD 3750 ANALYSIS FOR WILDLIFE SCIENCES (4).** LEC. 3, LAB. 3. Pr., STAT 2510. Applied training in data analysis tools commonly used in wildlife sciences. Spring.

**WILD 4310 WILDLIFE MANAGEMENT TECHNIQUES (3).** LEC. 1, LAB. 6. Pr., WILD 5280 or WILD 5290. Intensive study of field and laboratory techniques used to manage wildlife populations, including censusing, habitat mapping, prescribed burning, GIS and computer simulation.

**WILD 4910 WILDLIFE SCIENCES SUMMER PRACTICUM (8).** PRA. 8. Pr., WILD 5400. Training and tools for wildlife ecology, conservation, and management, with emphasis on applied problem-solving. Summer.

**WILD 4920 WILDLIFE MANAGEMENT INTERNSHIP (4).** PRA. 4. SU. Practical job experience under joint supervision of the Internship advisor and appropriate state, federal, or private agency. Training will prepare student for potential career employment. Departmental approval.

**WILD 4930 DIRECTED STUDIES (1-3).** IND. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**WILD 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Topics of an undergraduate nature pertinent to wildlife sciences. Course may be repeated for a maximum of 3 credit hours.

**WILD 4970 SPECIAL TOPICS (1-4).** AAB. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**WILD 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**WILD 5270 WILDLIFE RESOURCE PHILOSOPHY AND POLICY (3).** LEC. 3. Pr., WILD 5280 or WILD 5290. Examination of attitudes, philosophies and policies that govern management of the wildlife resource. Extensive reading and class participation required. Spring.

**WILD 5280 WILDLIFE ECOLOGY AND MANAGEMENT I (3).** LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected waterfowl, galliforms, gruiforms, raptors, shorebirds, doves and pigeons, woodpeckers and neotropical migrants. Fall.

**WILD 5281 WILDLIFE ECOLOGY AND MANAGEMENT I LABORATORY (1).** LAB. 3. Coreq., WILD 5280. Outdoor and audio-visual identification of selected bird species, habitats, and techniques used to manipulate bird populations and habitats. Some weekend field trips required. Fall.

## Geology and Geography

**WILD 5290 WILDLIFE ECOLOGY AND MANAGEMENT II (3).** LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected artiodactyls, rodents, lagomorphs, bats, carnivores, and herps. Spring.

**WILD 5291 WILDLIFE ECOLOGY AND MANAGEMENT II LABORATORY (1).** LAB. 3. Coreq., WILD 5290. Outdoor and audio-visual identification of selected mammal and herp species, habitats, and techniques used to manipulate those populations and habitats. Some weekend field trips required. Spring.

**WILD 5400 PROBLEM SOLVING IN WILDLIFE SCIENCES (2).** LEC. 2. Pr., WILD 3280. Applied training and tools used to solve problems in wildlife science. Spring.

**WILD 5410 WILDLIFE DAMAGE MANAGEMENT (3).** LEC. 2, LAB. 1. Pr., WILD 3280. This course is designed to familiarize students with the basic philosophy, biology, and techniques related to managing negative human wildlife interactions. Spring.

**WILD 6270 WILDLIFE RESOURCE PHILOSOPHY AND POLICY (3).** LEC. 3. Pr., (WILD 6280 or WILD 6290). Examination of attitudes, philosophies and policies that govern management of the wildlife resource. Extensive reading and class participation required. Spring.

**WILD 6280 WILDLIFE ECOLOGY AND MANAGEMENT I (3).** LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected waterfowl, galliforms, gruiforms, raptors, shorebirds, doves and pigeons, woodpeckers and neotropical migrants. Fall.

**WILD 6281 WILDLIFE ECOLOGY AND MANAGEMENT I LABORATORY (1).** LAB. 3. Coreq., WILD 6280. Outdoor and audio-visual identification of selected bird species, habitats, and techniques used to manipulate bird populations and habitats. Some weekend field trips required. Fall.

**WILD 6290 WILDLIFE ECOLOGY AND MANAGEMENT II (3).** LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected artiodactyls, rodents, lagomorphs, bats, carnivores, and herps. Fall.

**WILD 6291 WILDLIFE ECOLOGY AND MANAGEMENT II LAB (1).** LAB. 3. Coreq., WILD 6290. Outdoor and audio-visual identification of selected mammal and herp species, habitats, and techniques used to manipulate those populations and habitats. Some weekend field trips required. Fall.

**WILD 6400 PROBLEM SOLVING IN WILDLIFE SCIENCES (2).** LEC. 2. Pr., WILD 3280. Applied training and tools used to solve problems in wildlife science. Spring.

**WILD 6410 WILDLIFE DAMAGE MANAGEMENT (3).** LEC. 2, LAB. 1. This course is designed to familiarize students with the basic philosophy, biology, and techniques related to managing negative human wildlife interactions. Spring.

**WILD 7070 UPLAND WILDLIFE ECOLOGY (4).** LEC. 3, LAB. 6. Pr., WILD 5280 or WILD 6280. Application of wildlife ecological theories and methods with emphasis on upland species and habitats. Several overnight field trips may be made. Fall.

**WILD 7080 FOREST WILDLIFE ECOLOGY AND MANAGEMENT (4).** LEC. 4. Pr., WILD 5280 or WILD 6280. In-depth discussions into life history, biology, ecology, and management of important wildlife species of forested ecosystems. Management strategies for each species emphasized. Summer.

**WILD 7150 ADVANCED ANALYSIS FOR ECOLOGICAL SCIENCES (4).** LEC. 3, LAB. 2. Pr., STAT 7000. Applied training in advanced analytical procedures commonly used in ecological sciences including modeling of survival, reproduction, habitat selection, population growth, density-dependence, and morph metrics. Spring.

**WILD 7200 WILDLIFE NUTRITIONAL ECOLOGY (3).** LEC. 3. Exploration of the basic nutrient requirements of free-ranging wildlife and comparison of requirements to related domestic species. Fall of odd years.

**WILD 7250 WILDLIFE POPULATION ANALYSIS (3).** LEC. 2, LAB. 3. Pr., STAT 7000. Estimation of survival and success rates for wildlife and fisheries populations. Information on theoretical approaches for model selection and population modeling. Offered Fall of odd numbered years.

**WILD 7350 WATERFOWL BIOLOGY AND MANAGEMENT (4).** LEC. 3, LAB. 3. Pr., WILD 5280 or WILD 6280. Taxonomy, biology and management of waterfowl with emphasis on North American species. Spring of odd years.

**WILD 7930 DIRECTED STUDIES (1-3)** IND/LEC. Directed studies in subject matter not covered by an existing course or to supplement knowledge gained from existing course offerings. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**WILD 7950 GRADUATE SEMINAR (1).** SEM. 1. SU. Students develop ability and confidence in making oral presentations based upon research and provide constructive criticism of their peers' presentations.

**WILD 7970 SPECIAL TOPICS (1-4).** RES. Provides graduate students seeking the master's degree opportunities to work with individual wildlife science professors to investigate timely research topics. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**WILD 7990 RESEARCH AND THESIS (1-12).** MST. Departmental approval. Course may be repeated with change in topics.

**WILD 8930 DIRECTED STUDIES (1-3).** IND. Course may be repeated for a maximum of 9 credit hours.

**WILD 8970 SPECIAL TOPICS (1-4).** RES. Provides graduate students seeking the doctoral degree opportunities to work with individual wildlife science professors to investigate timely research topics. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**WILD 8990 RESEARCH AND DISSERTATION (1-12).** DSR. Departmental approval. Course may be repeated with change in topics.

## Geology and Geography

Dr. Charles E. Savrda - 844-4887

### GEOGRAPHY (GEOG)

**GEOG 1010/1013/1014 GLOBAL GEOGRAPHY (3).** LEC. 3. Social Science I Core. Spatial and locational context for analyzing change in the contemporary world, including elements of both physical and cultural environments.

**GEOG 1017 HONORS GLOBAL GEOGRAPHY (3).** LEC. 3. Pr., Honors College. Spatial and locational context for analyzing change in the contemporary world, including elements of both physical and cultural environments.

**GEOG 2010 CULTURAL GEOGRAPHY (3).** LEC. 3. Spatial perspectives on cultural society and geography's approach to solving problems using case studies and key issues.

**GEOG 2020 PHYSICAL GEOGRAPHY (3).** LEC. 3. Selected elements of the earth's physical system to include such items as landforms, basic weather elements, soils and vegetation.

**GEOG 2800 GEOGRAPHIC METHODS AND TECHNIQUES (4).** LEC. 3, LAB. 2. Pr., CCOMP 1000. Key geographical concepts and production of basic geographical tools for portraying spatial data through laboratory exercises. Departmental approval.

**GEOG 2850 MAP READING AND ANALYSIS (3).** LEC. 2, LAB. 2. Introduction to basic concepts and techniques used to interpret map symbols and to analyze geographic patterns.

**GEOG 3110 UNITED STATES AND CANADA (3).** LEC. 3. Survey of the region incorporating physical and cultural elements, providing a synthesis of the economic and political processes of the U.S. and Canada.

**GEOG 3120 ALABAMA AND THE SOUTHEAST (3).** LEC. 3. Study of the physical and cultural environments of the state.

**GEOG 3130 LATIN AMERICA (3).** LEC. 3. Survey of physical and human landscape of the region including historical geography, natural resources, economic development and problems and prospects affecting major countries.

**GEOG 3140 AFRICA (3).** LEC. 3. Analysis of the relationships among diverse population groups and the physical environments of sub-Saharan Africa.

**GEOG 3150 EUROPE (3).** LEC. 3. Survey of physical and human landscape of the region including historical geography, natural resources, economic development, and problems and prospects affecting several of the major countries.

**GEOG 3160 ASIA (3).** LEC. 3. Survey of the physical and cultural landscape of Asia, including its development and spatial distribution of resources, with a focus on major countries.

**GEOG 3300 INTERNATIONAL TRAVEL AND TOURISM (3).** LEC. 3. Environmental and cultural patterns that characterize places attractive to tourists. Provides realistic situations for developing travel plans and programs.

**GEOG 3810 CARTOGRAPHY AND GRAPHICS (4).** LEC. 3, LAB. 2. Pr., GEOG 2800. Techniques of map production including relevant computer graphics applications and related laboratory exercises. Departmental approval.

**GEOG 4920 INTERNSHIP (3).** LEC. 3. Opportunity to apply classroom experience to real job setting. Course may be repeated for a maximum of 6 credit hours.

**GEOG 4930 DIRECTED STUDIES (1-4).** IND. Conferences, reading, research and/or reports may fulfill course requirement. Or departmental approval. Course may be repeated for a maximum of 4 credit hours.

**GEOG 5010 URBAN GEOGRAPHY (3).** LEC. 3. Analysis of urban patterns and the processes creating them. Departmental approval.

**GEOG 5210 CLIMATOLOGY (3).** LEC. 3. The atmosphere and global circulation, El Nino, regional patterns, paleoclimate reconstruction, climate change, climate influences on health and human activities, data sources and statistical analysis, and GIS applications. Departmental approval.

**GEOG 5220 GEOMORPHOLOGY (3).** LEC. 3. Basic concepts, terms, and techniques used to identify landforms and their evolutionary processes. Credit will not be given for both GEOG 5220 and GEOG 6220.

**GEOG 5300 ADVANCED REGIONAL STUDIES IN GEOGRAPHY (3).** LEC. 3. Spatial patterns of socio-economic development of Latin America and the Caribbean. Departmental approval.

**GEOG 5310 GEOGRAPHY OF RURAL CHANGE (3).** LEC. 3. Examination of examine the patterns and processes associated with populations levels and distributions, natural resource management systems, economic development, and cultural landscapes of rural communities. Credit will not be given for both GEOG 5310 and GEOG 6310.

## Geology and Geography

**GEOG 5350 ECONOMIC GEOGRAPHY (3).** LEC. 3. Economic Geography in a global context. Spatial aspects of resource use, agricultural development, manufacturing production and services. Departmental approval.

**GEOG 5400 GEOGRAPHY OF NATURAL HAZARDS (3).** LEC. 3. Geography of natural hazards and their impacts on society. Credit will not be given for both GEOG 5400 and GEOG 6400.

**GEOG 5500 GEOGRAPHY OF ENVIRONMENTAL MANAGEMENT (3).** LEC. 3. Understanding and application of the theories and methods for the United States' version of environmental impact assessment. Departmental approval.

**GEOG 5510 HUMAN-ENVIRONMENT INTERACTION (3).** LEC. 3. Investigation the inter-relationships between humans and their natural or physical environments. Departmental approval.

**GEOG 5600 GLOBAL RESOURCES AND THE ENVIRONMENT (3).** LEC. 3. Global environmental problems such as climate change, ozone and deforestation and international public agencies and private volunteer movements protecting our global commons. Departmental approval.

**GEOG 5700 QUANTITATIVE METHODS AND SPATIAL ANALYSIS (3).** LEC. 3. Pr., STAT 2510. Quantitative methodology necessary for spatial analysis research. Credit will not be given for both GEOG 5700 and GEOG 6700. Or similar statistics course.

**GEOG 5710 GEOGRAPHIC FIELD METHODS (3).** LEC. 1, LAB. 4. Geographic methods and techniques used to conduct field research investigations of human and physical characteristics of the landscape. Credit will not be given for both GEOG 5710 and GEOG 6710.

**GEOG 5800 GEOGRAPHIC THOUGHT (3).** LEC. 3. Develops effective thinking skills, evaluates written materials in geography, reviews geographical research and produces written reports and papers related to geographic issues. Departmental approval.

**GEOG 5820 AERIAL PHOTOGRAPHY AND REMOTE SENSING (4).** LEC. 3, LAB. 2. Pr., GEOG 2800. Aerial photo and satellite digital interpretation, photogrammetry, remote sensing technology and photogrammetry and related laboratory exercises. Departmental approval.

**GEOG 5830 GEOGRAPHIC INFORMATION SYSTEMS (4).** LEC. 3, LAB. 2. Introduction to concepts and techniques used in developing a geographic information system (GIS) for evaluating spatial distribution patterns and spatial relationships.

**GEOG 5860 ADVANCED CONCEPTS IN CARTOGRAPHY (3).** LEC. 2, LAB. 2. Pr., GEOG 3810. Advanced techniques of map design and production including relevant computer graphics applications and related laboratory exercises. Credit will not be given for both GEOG 5860 and GEOG 6860.

**GEOG 5870 ADVANCED REMOTE SENSING (3).** LEC. 2, LAB. 2. Pr., GEOG 5820. Explores advanced topics of remote sensing for use in research and analysis. Credit will not be given for both GEOG 5870 and GEOG 6870.

**GEOG 5880 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS (3).** LEC. 2, LAB. 2. Pr., GEOG 5830. Advanced concepts and techniques used in the collection and analysis of data for evaluating spatial patterns and process. Credit will not be given for both GEOG 5880 and GEOG 6880.

**GEOG 5970 SEMINAR IN GEOGRAPHY (3).** LEC. 3. Development of modern geographic thinking with attention to applied research topics. Course may be repeated for a maximum of 6 credit hours.

**GEOG 6010 URBAN GEOGRAPHY (3).** LEC. 3. Analysis of urban pattern and the process creating them.

**GEOG 6210 CLIMATOLOGY (3).** LEC. 3. The atmosphere and global circulation, El Nino, regional patterns, paleoclimate reconstruction, climate change, climate influences on health and human activities, data sources and statistical analysis, and GIS applications.

**GEOG 6220 GEOMORPHOLOGY (3).** LEC. 3. Basic concepts, terms, and techniques used to identify landforms and their evolutionary processes. Credit will not be given for both GEOG 5220 and GEOG 6220.

**GEOG 6300 ADVANCED REGIONAL STUDIES IN GEOGRAPHY (3).** LEC. 3. Spatial patterns of socio-economic development of Latin America and the Caribbean. Departmental approval.

**GEOG 6310 GEOGRAPHY OF RURAL CHANGE (3).** LEC. 3. Examination of examine the patterns and processes associated with populations levels and distributions, natural resource management systems, economic development, and cultural landscapes of rural communities. Credit will not be given for both GEOG 5310 and GEOG 6310.

**GEOG 6350 ECONOMIC GEOGRAPHY (3).** LEC. 3. Economic Geography in a global context. Spatial aspects of resource use, agricultural development, manufacturing production and services. Departmental approval.

**GEOG 6400 GEOGRAPHY OF NATURAL HAZARDS (3).** LEC. 3. Geography of natural hazards and their impacts on society. Credit will not be given for both GEOG 5400 and GEOG 6400.

**GEOG 6500 GEOGRAPHY OF ENVIRONMENTAL MANAGEMENT (3).** LEC. 3. Understanding and application of the theories and methods for the United States' version of environmental impact assessment. Departmental approval.

**GEOG 6510 HUMAN-ENVIRONMENT INTERACTION (3).** LEC. 3. Investigation the inter-relationships between humans and their natural or physical environments. Departmental approval.

**GEOG 6600 GLOBAL RESOURCES AND THE ENVIRONMENT (3).** LEC. 3. Global environmental problems such as climate change, ozone and deforestation and international public agencies and private volunteer movements protecting our global commons. Departmental approval.

**GEOG 6700 QUANT METH & SPATIAL ANALYSIS (3).** LEC. 3. Pr., STAT 2510. Quantitative methodology necessary for spatial analysis research. Credit will not be given for both GEOG 5700 and GEOG 6700. Or similar statistics course.

**GEOG 6710 GEOGRAPHIC FIELD METHODS (3).** LEC. 1, LAB. 4. Geographic methods and techniques used to conduct field research investigations of human and physical characteristics of the landscape. Credit will not be given for both GEOG 5710 and GEOG 6710.

**GEOG 6800 GEOGRAPHIC THOUGHT (3).** LEC. 3. Develops effective thinking skills; evaluates written materials in geography; Reviews geographical research and produces written reports and papers related to geographic issues. Departmental approval.

**GEOG 6820 AERIAL PHOTOGRAPHY AND REMOTE SENSING (4).** LEC. 3, LAB. 2. Aerial photo and satellite digital interpretation, photogrammetry, remote sensing technology and photogrammetry and related laboratory exercises. Departmental approval.

**GEOG 6830 GEOGRAPHIC INFORMATION SYSTEMS (4).** LEC. 3, LAB. 2. Introduction to concepts and techniques used in developing a geographic information system (GIS) for evaluating spatial distribution patterns and spatial relationships. Departmental approval.

**GEOG 6860 ADVANCED CONCEPTS IN CARTOGRAPHY (3).** LEC. 2, LAB. 2. Pr., GEOG 3810. Advanced techniques of map design and production including relevant computer graphics applications and related laboratory exercises. Credit will not be given for both GEOG 5860 and GEOG 6860.

**GEOG 6870 ADVANCED REMOTE SENSING (3).** LEC. 2, LAB. 2. Pr., GEOG 6820. Explores advanced topics of remote sensing for use in research and analysis. Credit will not be given for both GEOG 5870 and GEOG 6870.

**GEOG 6880 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS (3).** LEC. 2, LAB. 2. Pr., GEOG 6830. Advanced concepts and techniques used in the collection and analysis of data for evaluating spatial patterns and processes. Credit will not be given for both GEOG 5880 and GEOG 6880.

**GEOG 6970 SEMINAR IN GEOGRAPHY (3).** LEC. 3. Development of modern geographic thinking with attention to applied research topics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**GEOG 7990 MS RESEARCH AND THESIS (1-10).** RES. Research and Thesis.

## GEOLOGY (GEOL)

**GEOL 1100 PHYSICAL GEOLOGY (4).** LEC. 3, LAB. 2. Coreq., GEOL 1101. Science Core. General physical geology. Survey of the important minerals and rocks. Origin and classification of geologic structures, earthquakes, and landforms. Study of geologic maps. Credit will not be given for both GEOL 1100 and GEOL 3150.

**GEOL 1101 PHYSICAL GEOLOGY LABORATORY (0).** LAB. 2. Coreq., GEOL 1100. Examination of rocks and minerals and use of geologic and topographic maps; Problems in structural geology, earthquakes, and landforms.

**GEOL 1110 HISTORICAL GEOLOGY (4).** LEC. 3, LAB. 2. Pr., GEOL 1100. Coreq., GEOL 1111. Science Core. Physical and biological history of the Earth, with emphasis on the evolution of life forms.

**GEOL 1111 HISTORICAL GEOLOGY LABORATORY (0).** LAB. 2. Pr., GEOL 1100. Coreq., GEOL 1110. Examination of rock, fossil, and related data sets bearing on the geological development of the earth with emphasis on North America.

**GEOL 1200 MARINE TECHNICAL METHODS (2).** LAB. 8. Introduction to procedures utilized aboard marine research vessels; physical, biological and geological measurements and sampling techniques. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

**GEOL 1220 COASTAL CLIMATOLOGY (2).** LEC. 7. Controlling factors and features of world climates, with attention to coastal areas; application and interpretation of climate data. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

**GEOL 2010/2013 MINERALOGY AND OPTICAL CRYSTALLOGRAPHY (5).** LEC. 4, LAB. 2. Pr., CHEM 1040. Departmental approval. Physical and chemical properties of minerals, classification and roles with emphasis on natural systems, materials science, health, and environment. Credit will not be given for both GEOL 2010 and GEOL 2013.

**GEOL 2020 MARINE GEOLOGY (4).** LEC. 2, LAB. 4. Geology of ocean basins; special emphasis on continental shelves, their sediments and the sedimentary pro-

cess at work there. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

**GEOL 2050 IGNEOUS AND METAMORPHIC PETROLOGY (4).** LEC. 3, LAB. 2. Pr., GEOL 2010. Principles and processes of igneous and metamorphic activity in a plate tectonic and petrologic context. Description, classification and interpretation of igneous and metamorphic rocks.

**GEOL 2100 ENVIRONMENTAL GEOLOGY (4).** LEC. 3, LAB. 2. Pr., GEOL 1100. Emphasis on geology as an environmental science; applied geology, geological hazards and environmental regulations as applied to geologic environmental remediation.

**GEOL 3060 LUNAR AND PLANETARY GEOLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 1100. Geology of the planets, moons, asteroids and comets. Origin of the solar system. Space exploration. Impact cratering. Departmental approval.

**GEOL 3100 TERRESTRIAL VEGETATION THROUGH EARTH HISTORY (3).** LEC. 2, LAB. 2. Pr., GEOL 2200 and (BIOL 1020 or BIOL 1027). Plants are primary producers and are the foundation upon which the global ecosystem is based. This course focuses on the development, evolution, and application of the plant fossil record to problems in earth history.

**GEOL 3150 ENGINEERING GEOLOGY (3).** LEC. 2, LAB. 2. Fundamental geologic principles, materials, and processes that affect engineering projects and programs. Emphasis on pre-construction geological analysis to recognize potential hazards and problems. Credit will not be given for both GEOL 3150 and GEOL 1100.

**GEOL 3200 PRINCIPLES OF PALEONTOLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 1110. The nature of the fossil record, applications of that data to geological and biological questions with emphasis on the concepts using examples from all biotic groups.

**GEOL 3300 EVOLUTION AND EXTINCTION OF THE DINOSAURIA (3).** LEC. 2, LAB. 2. Pr., GEOL 1100. Survey of the dinosaurs, their evolution and extinction. Southeastern U.S. dinosaurs. Departmental approval.

**GEOL 3400 STRUCTURAL GEOLOGY (4).** LEC. 3, LAB. 2. Pr., GEOL 2050. Fundamentals of rock deformation. The mechanics of rock flow, fracture, and folding. Geometric techniques of structural analysis.

**GEOL 3650 FIELD CAMP (6).** LEC. 1, LAB. 10. Pr., GEOL 3400. Instruments and methods used in geological field mapping, interpretation of sedimentary, igneous and metamorphic rocks and deformational analysis. Summer.

**GEOL 4010 SEDIMENTARY PETROLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 2050. Detailed description and classification of sediments and sedimentary rocks with emphasis on interpretation of origins, transport histories, depositional environments and diagenetic histories. Departmental approval.

**GEOL 4110 STRATIGRAPHY (3).** LEC. 2, LAB. 2. Pr., GEOL 4010. Description and correlation of layered earth materials. Synthesis and interpretation of stratigraphic correlations. North American Stratigraphic Code. History and theory of stratigraphy. Departmental approval.

**GEOL 4210 ECONOMIC GEOLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 3400. The origin, distribution and classification of mineral deposits formed by igneous, metamorphic and sedimentary processes. Introduction of methods of exploration and development.

**GEOL 4260 INTRODUCTION TO GEOCHEMISTRY (3).** LEC. 3. Pr., CHEM 1040. and GEOL 2050 Principles governing the distribution of major, minor and trace elements within the earth; differentiation of elements due to geologic processes and the hydrosphere.

**GEOL 4300 GEODYNAMICS (3).** LEC. 3. Pr., GEOL 3400 and (MATH 1620 or MATH 1627) and PHYS 1510. Structure and dynamics of the earth deduced from seismology, gravity, heat flow and magnetism.

**GEOL 4740 GEOLOGY SENIOR SEMINAR (1).** LEC. 1. Pr., GEOL 4010. Current concepts and research findings in the principal subject areas within the broad discipline of geology.

**GEOL 4930 DIRECTED STUDIES IN UNDERGRADUATE RESEARCH (1-3).** IND. Directed studies in areas of geology not covered by an existing course or to supplement knowledge gained from an existing course. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**GEOL 4980 UNDERGRADUATE RESEARCH METHODS (1-3).** IND. Active participation in original research under supervision of a senior investigator. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**GEOL 4997 HONORS THESIS (2-4).** LEC. 3. Pr., Honors College. May incorporate library, field or laboratory research in any proportion. Written thesis and thesis defense required. Course may be repeated for a maximum of 4 credit hours.

**GEOL 5060 INVERTEBRATE PALEONTOLOGY (4).** LEC. 3, LAB. 2. Pr., GEOL 3200 and (BIOL 1030 or BIOL 1037). In-depth coverage of the invertebrate fossil record, focusing on the systematics and evolutionary history of major groups. Laboratory/discussion sessions and field trips included.

**GEOL 5100 HYDROGEOLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 1100 and CHEM 1030 and MATH 1610 and GEOG 5830 and PHYS 1500. Fundamentals of groundwater flow in porous media, hydrodynamic dispersion, determination of aquifer

properties and geological aspects of groundwater occurrences. Departmental approval.

**GEOL 5240 COASTAL GEOMORPHOLOGY (2).** LEC. 5, LAB. 4. Introduction to coastal sediment processes and applied coastal geomorphology; emphasis on waves, tides, sediments and their impact of anthropogenic influences. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

**GEOL 5300 BASIN ANALYSIS (3).** LEC. 2, LAB. 2. Pr., P/C, GEOL 4010. Study of analytical techniques of sedimentary basin fills, including thermal history, litho and biofacies analyses, depositional systems, subsurface logs, seismic reflection, provenance history, evolution, sedimentation and subsidence history.

**GEOL 5400 PRINCIPLES OF EARTH SCIENCE (3).** LEC. 2, LAB. 2. A special course for in-service and future teachers only. Internal and surficial geologic processes, meteorology and oceanography. Departmental approval.

**GEOL 5600 APPLIED GEOPHYSICS (4).** LEC. 3, LAB. 2. Pr., (GEOL 1100 or GEOL 3150) and (MATH 1620 or MATH 1627) and PHYS 1510. Overview of geophysical methods with applications to resource, tectonic and environmental analyses. Seismic refraction and reflection, gravity, magnetics, electrical and electromagnetic methods will be included. Departmental approval.

**GEOL 6060 INVERTEBRATE PALEONTOLOGY (4).** LEC. 3, LAB. 2. Pr., GEOL 3200 and (BIOL 1030 or BIOL 1037). In-depth coverage of the invertebrate fossil record, focusing on the systematics and evolutionary history of major groups. Laboratory/discussion sessions and field trips included. Departmental approval.

**GEOL 6100 HYDROGEOLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 1100 and CHEM 1030 and MATH 1610 and (GEOG 5830 or GEOG 6830) and PHYS 1500. Fundamentals of groundwater flow in porous media, hydrodynamic dispersion, determination of aquifer properties and geological aspects of groundwater occurrences. Departmental approval.

**GEOL 6240 COASTAL GEOMORPHOLOGY (2).** LEC. 5, LAB. 4. Introduction to coastal sediment processes and applied coastal geomorphology; emphasis on waves, tides, sediments and their impact of anthropogenic influences. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

**GEOL 6300 BASIN ANALYSIS (3).** LEC. 2, LAB. 2. Pr., GEOL 4010. Study of analytical techniques of sedimentary basin fills, including thermal history, litho and biofacies analyses, depositional systems, subsurface logs, seismic reflection, provenance history, evolution, sedimentation and subsidence history. Departmental approval.

**GEOL 6400 PRINCIPLES OF EARTH SCIENCE (3).** LEC. 2, LAB. 2. A special course for in-service and future teachers only. Internal and surficial geologic processes, meteorology and oceanography. Departmental approval.

**GEOL 6600 APPLIED GEOPHYSICS (4).** LEC. 3, LAB. 2. Pr., (GEOL 1100 or GEOL 3150) and MATH 1620 and PHYS 1510. Overview of geophysical methods with applications to resource, tectonic and environmental analyses. Seismic refraction and reflection, gravity, magnetics, electrical and electromagnetic methods will be included. Departmental approval.

**GEOL 7100 GEOCOMMUNICATION (3).** LEC. 3. Instruction and practice in written and oral communication skills necessary for a successful career in the geosciences; emphasis on preparation of scientific articles, technical reports, abstracts, and thesis; preparation and delivery of oral presentations. Departmental approval.

**GEOL 7200 TECTONICS (3).** LEC. 2, LAB. 2. Pr., GEOL 2050 and GEOL 4010. Emphasis will be placed on plate tectonics and driving forces, evolution of collisional, transform and extensional systems, and dynamic indicators of past and current tectonic processes. Departmental approval.

**GEOL 7220 GEOGRAPHIC INFORMATION SYSTEMS AND MARINE RESEARCH (3).** LEC. 10, LAB. 15. Introduction to geographical information system (GIS) techniques with a focus on application in the marine environment. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

**GEOL 7250 GROUNDWATER HYDROGEOLOGIC MODELING (3).** LEC. 2, LAB. 2. Pr., GEOL 6100. Overview of groundwater modeling techniques with environmental and geologic applications. Interaction of geology and subsurface groundwater flow. Basin hydrology modeling. Practical experience in computer simulations of subsurface hydrogeologic processes. Departmental approval.

**GEOL 7260 AQUEOUS AND ENVIRONMENTAL GEOCHEMISTRY (3).** LEC. 2, LAB. 2. Pr., CHEM 1040 and GEOL 2050. Study of water-rock reactions that control the chemical composition of groundwater; aqueous geochemistry of trace elements; groundwater pollution, remediation and geomicrobiology. Departmental approval.

**GEOL 7300 CYCLES THROUGH EARTH HISTORY (3).** LEC. 2, LAB. 2. Pr., GEOL 4100 and GEOL 4260. Discussion of the fundamental processes controlling sedimentary cycles at different physical, biotic, and temporal scales.

**GEOL 7310 ISSUES IN PALEONTOLOGY (3).** LEC. 3. Pr., GEOL 3200. Advanced applications of paleontological data sets to topics that may include taphonomy, biogeochemistry, evolution, a systematic functional morphology, paleoecology, paleoclimatology and biostratigraphy.

**GEOL 7400 ADVANCED ECONOMIC GEOLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 4210. The practical and theoretical aspects of economic geology as applied to exploration and development of natural resources. Departmental approval.

## Human Development and Family Studies (HDFS)

**GEOL 7410 GEOLOGY OF ORGANIC MATTER (3).** LEC. 2, LAB. 2. Pr., GEOL 4010 and GEOL 4110. The origins, classifications, taphonomy of organic matter, modern and ancient processes and environments of deposition of organic-rich strata, including hydrocarbon- source rocks and coals. Laboratory and field trips required. Departmental approval.

**GEOL 7450 MINERAL RESOURCES AND THE ENVIRONMENT (3).** LEC. 2, LAB. 2. Pr., CHEM 1040 and GEOL 2050. Overview of geology and geographic distribution of mineral resources; economic aspects affecting their extraction; environmental impacts and cost of mineral resource extraction.

**GEOL 7550 ADVANCED GEOPHYSICAL METHODS (3).** LEC. 2, LAB. 2. Pr., GEOL 6600. Advanced treatment of geophysical methods, data interpretation and modeling. Applications to resource development and environmental assessments will be explored, with emphasis on seismic methods. Departmental approval.

**GEOL 7600 PETROLOGY (3).** LEC. 2, LAB. 2. Pr., GEOL 2050 and GEOL 4010. The description, classification, formative processes, and petrologic interpretation of igneous, metamorphic and sedimentary rocks. Departmental approval.

**GEOL 7610 STRUCTURAL AND METAMORPHIC ANALYSIS (3).** LEC. 2, LAB. 2. Pr., GEOL 2050 and GEOL 3400. and GEOL 3650 Quantitative analysis of dynamic, kinematic and chemical responses of rocks and minerals to crustal movements and dynamo thermal metamorphism.

**GEOL 7650 FACIES ANALYSIS AND SEQUENCE STRATIGRAPHY (3).** LEC. 2, LAB. 2. Pr., GEOL 4010 and GEOL 4110. Systematic analysis of modern and ancient deposition facies, and their interpretation in a sequence stratigraphic context. Laboratory and field trips required. Departmental approval.

**GEOL 7930 DIRECTED STUDIES (1-3).** LEC. 3. Directed studies. May incorporate literature, field and/or laboratory research in any proportion. Subject matter and credit hours shall be determined by student and directing faculty. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**GEOL 7980 CAPSTONE PROJECT (1-3).** LEC. SU. Literature, field and/or laboratory research directed towards completion of capstone project required for non-thesis option. Course may be repeated for a maximum of 3 credit hours.

**GEOL 7990 RESEARCH AND THESIS (1-10).** MST. Credit to be arranged. Departmental approval. Course may be repeated with change in topics.

### Graduate School (GRAD)

George Crandell 844-2125

**GRAD 5AA0 AUTHORIZED DROP BELOW FULL-TIME (0).** IND.

**GRAD 6AA0 AUTHORIZED FOR FULLCOURSE OF STUDY (0).** IND. Course should not be printed in bulletin or in the schedule of classes booklet. Departmental approval.

**GRAD 7000 CLEARING REGISTRATION (0).** LEC. May be used to register graduate students to graduate who have finished all graduation requirements by the last day of the previous semester, to remove incomplete grades, or to complete comprehensive examination for non-thesis students.

**GRAD 7890 CONTINUOUS REGISTRATION FOR MASTER'S STUDENTS (0).** LEC. For Master's students not seeking course work credit but who wish to meet continuous registration requirements. No grade.

**GRAD 7AA0 THESIS COMPLETION (0).** IND. Coreq., MIN. One (1) hour 7980 or 7990. Open to thesis option graduate students and non-thesis students engaged in research for special projects. Students may not enroll for additional course work but must be engaged full-time in the completion of research, the thesis, or the special project. No grade.

**GRAD 8AA0 DISSERTATION COMPLETION (0).** IND. Restricted to doctoral students. No grade. Additional Pr.: Minimum of 1 hour of 8990. Must NOT be enrolled in any other didactic course work.

**GRAD 8XX0 AU/AUM JOINT PROGRAM IN PUBLIC ADMINISTRATION (0).** IND. Joint Program in Public Administration. AU registration for PUB doctoral students who are registered concurrently at AUM. Enrollment at AUM.

**GRAD 8890 CONTINUOUS REGISTRATION FOR DOCTORAL STUDENTS (0).** LEC. For doctoral students not seeking course work credit but who wish to meet continuous registration requirements. No grade.

**GRAD 8950 PREPARING FUTURE FACULTY SEMINAR I (1).** PRA/SEM. 14. SU. This course introduces graduate students to a variety of faculty roles and work environments. Seminar participants interact with faculty from partner institutions, prepare professional portfolios, present instruction and job talks, discuss evolving definitions of scholarship, and engage in other professional activities. Students participate in seminars and workshops to discuss faculty teaching, research and service roles and responsibilities, campus life and faculty governance at differing types of academic institutions. Fall. Permission of instructor.

**GRAD 8960 PREPARING FUTURE FACULTY SEMINAR II (1).** PRA/SEM. 14. SU. Pr., GRAD 8950. This course is a continuation of PPF Seminar I. Seminar participants interact with faculty from partnering institutions, prepare professional portfolios, present instruction and job talks, discuss evolving definitions of scholarship, and engage in other professional activities. Students participate in seminars and workshops to discuss faculty teaching, research and service roles and responsibilities,

ties, campus life and faculty governance at differing types of academic institutions. Spring. Permission of instructor.

### Human Development and Family Studies (HDFS)

Dr. Joe Pittman - 844-4151

**HDFS 1850 CURRENT ISSUES IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3).** LEC. 3. Current issues facing families and children evaluated in the light of scientific research.

**HDFS 2000 MARRIAGE AND FAMILY IN A GLOBAL CONTEXT (3).** LEC. 3. Examination of marriage and family systems, including their interface with the broader socio-cultural context.

**HDFS 2010 LIFESPAN HUMAN DEVELOPMENT IN FAMILY CONTEXT (3).** LEC. 3. Human development within the context of the family and across the family life cycle with a focus on significant life transitions.

**HDFS 2030 PROFESSIONAL DEVELOPMENT AND ETHICS (3).** LEC. 3. Appraisal of career potential, formulation of a professional code of ethics, and exploration of career options.

**HDFS 3010 CHILD DEVELOPMENT IN THE FAMILY (3).** LEC. 3. Pr., HDFS 2010 and 2.25 GPA. Social, emotional, physical and intellectual development in early and middle childhood with a special focus on family relationships. Fall, Spring.

**HDFS 3030 ADOLESCENT AND ADULT DEVELOPMENT IN THE FAMILY (3).** LEC. 3. Pr., 2.25 GPA. HDFS 2010. Analysis of adolescent and adult development with emphasis on development employing an ecological framework. Emphasis on family context and developmental outcomes.

**HDFS 3040 HUMAN SEXUALITY OVER THE FAMILY LIFE CYCLE (3).** LEC. 3. Pr., HDFS 2000 or SOCY 1000 or SOCY 1007 or PSYC 2010. Human sexuality from a life-cycle perspective, emphasizing developmental, familial and societal factors.

**HDFS 3060 PATTERNS OF FAMILY INTERACTION (3).** LEC. 3. Pr., 2.25 GPA. HDFS 2000. Examination of family process and interaction, emphasizing major conceptual frameworks of family development. Fall, Spring.

**HDFS 3080 DEVELOPMENT OF INTERPERSONAL SKILLS (3).** LEC. 3. Pr., 2.25 GPA. HDFS 2000. Examination of the competencies necessary for development of successful interpersonal relationships. Fall, Spring.

**HDFS 3090 TECHNIQUES OF INTERVIEWING IN PROFESSIONAL SETTINGS (2).** LEC. 2. Pr., HDFS 2000. Development of effective interpersonal skills used in professional relationships. Fall, Spring.

**HDFS 3380 STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1).** LEC. 1. Exploration of study abroad opportunities for students interested in the International Minor in Human Sciences.

**HDFS 3460 EFFECTIVE GUIDANCE AND INTERACTION WITH YOUNG CHILDREN (3).** LEC. 1, LAB. 6. Pr., HDFS 3010. Child development knowledge of teacher child relationships applied to interactions with young children at Auburn University Early Learning Center.

**HDFS 3470 LEARNING EXPERIENCES FOR YOUNG CHILDREN (3).** LEC. 1, LAB. 6. Pr., HDFS 3460 or HDFS 3010. Child development knowledge applied to preschool curriculum planning with supervised participation at Auburn University Early Learning Center. Fall, Spring.

**HDFS 3910 PRACTICUM (1-6).** PRA. SU. Directed experience in a professional setting. A) Human Development; B) Family Studies; C) Marriage and Family Therapy. Course may be repeated for a maximum of 6 credit hours.

**HDFS 3930 SERVICE LEARNING IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-6).** AAB/LEC. Application of HDFS-relevant knowledge to real-life situations through active participation in a directed community service experience. A.) Auburn University Early Learning Center; B.) Harris Early Learning Center of Birmingham; C.) Other Community Placements. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HDFS 3980 UNDERGRADUATE RESCH AND STUDY (1-5).** AAB/LEC. SU. Directed research under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

**HDFS 4380 STUDY AND TRAVEL IN HUMAN DEVELOPMENT AND FAMILY STUDIES (2-6).** AAB/FLD. Pr., CAHS 2000 and HDFS 2000 and NTRI 2000 and departmental approval. Study or work in the United States or internationally. Course may be repeated for a maximum of 6 credit hours.

**HDFS 4500 HOSPITALIZED CHILDREN AND THEIR FAMILIES (3).** LEC. Junior standing in HDFS or related field and Pr., HDFS 3010. Theories and research about children and their families in hospital settings. Spring. HDFS Major or a major in a related field.

**HDFS 4670 PARENT EDUCATION (3).** LEC. 3. Pr., HDFS 2010. Principles of working with parents on individual and group bases.

**HDFS 4680 FAMILY IN CROSS-CULTURAL PERSPECTIVE (3).** LEC. 3. Pr., 2.25 GPA. HDFS 2000. Examination of family function and diversity in cultures and family systems around the world. Fall.

## Human Development and Family Studies (HDFS)

**HDFS 4700 GENDER ROLES AND CLOSE RELATIONSHIPS (3).** LEC. 3. Pr., HDFS 2000 or SOCY 1000 or SOCY 1007 or PSYC 2010. Analysis of changing roles and their effects on romantic, marital, and parent-child relationships. Spring.

**HDFS 4920 INTERNSHIP IN HUMAN DEVELOPMENT AND FAMILY STUDIES (12).** INT. Pr., Departmental approval. completion of required 3000 and 4000 level HDFS courses with a C or better, 2.25 unadjusted GPA, HDFS major. Application must be submitted two semesters in advance. A computer and internet access is required.

**HDFS 4950 ADVANCED SEMINAR (3).** LEC. 3. Topical seminar in HDFS. A) Advanced Research (requires 3.0 GPA in HDFS); B) Child Development; C) Family Studies; D) Marriage and Family Therapy. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**HDFS 4960 SPECIAL PROBLEMS IN HDFS (1-3).** IND. SU. Supervised readings in one or more topical areas. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**HDFS 4980 ADVANCED UNDERGRADUATE RESEARCH IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-5).** IND. Conduct research under the direction of a human development and family studies faculty member on a topic of mutual interest. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**HDFS 4997 HONORS THESIS (2-6).** IND. SU. Pr., Honors College. Research in specialized topics. Course may be repeated for a maximum of 6 credit hours.

**HDFS 5200 PROGRAM DEVELOPMENT AND EVALUATION (3).** LEC. 3. Pr., HDFS 2000 and HDFS 2010 and HDFS 3010 or HDFS 3030 or HDFS 3060. Application of research to the development and evaluation of programming for children and families. Junior standing.

**HDFS 5300 FAMILY AND SOCIAL POLICY (3).** LEC. 3. Pr., HDFS 3010 or HDFS 3030 or HDFS 3060. Examination and critique of social policies from a family perspective. Junior standing.

**HDFS 5970 SPECIAL TOPICS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3).** LEC. 3. Study of topics of special interest beyond the current departmental offerings. Junior standing. Course may be repeated for a maximum of 9 credit hours.

**HDFS 6200 PROGRAM DEVELOPMENT AND EVALUATION (3).** LEC. 3. Application of research to the development and evaluation of programming for children and families. Graduate standing.

**HDFS 6300 FAMILY AND SOCIAL POLICY (3).** LEC. 3. Examination and critique of social policies from a family perspective. Graduate standing.

**HDFS 6970 SPECIAL TOPICS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3).** LEC. 3. Study of topics of special interest beyond the current departmental offerings. Graduate standing. Course may be repeated for a maximum of 9 credit hours.

**HDFS 7000 ADOLESCENT DEVELOPMENT (3).** LEC. 3. Critical examination of empirical research and theories of adolescent development.

**HDFS 7010 DEVELOPMENTAL SCIENCE I: CHILDHOOD AND ADOLESCENCE (3).** LEC. 3. Survey and critical examination of research on development from birth through adolescence.

**HDFS 7020 DEVELOPMENTAL SCIENCE II: ADULTHOOD AND AGING (3).** LEC. 3. Survey and critical evaluation of research on development in the adult and aging periods of the life cycle.

**HDFS 7030 RELATIONSHIP DEVELOPMENT AND PROCESS IN CHILDHOOD AND ADOLESCENCE (3).** LEC. 3. Theoretical and empirical themes focused on processes and dynamics of relationships in childhood and adolescence.

**HDFS 7040 RELATIONSHIP DEVELOPMENT AND PROCESS IN ADULTHOOD (3).** LEC. 3. Theoretical and empirical themes focused on processes and dynamics of relationships in adulthood and aging.

**HDFS 7050 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES (3).** LEC. 3. Survey of principles and methods for studying individuals, dyadic relationships and families. Fall.

**HDFS 7051 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES LAB (1).** LAB. 1. Coreq., HDFS 7050. Lab devoted to principles and methods for studying individuals, dyadic relationships and families. Summer.

**HDFS 7060 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES II (3).** LEC. 3. Pr., HDFS 7050. Coreq., HDFS 7061. Survey of principles and advanced methods for studying individuals, dyadic relationships, and families. Departmental approval. Spring.

**HDFS 7061 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES II LABORATORY (1).** LAB. 1. Pr., HDFS 7050. Coreq., HDFS 7060. Lab devoted to the application of principles and advanced methods for studying individuals, dyadic relationships, and families. Departmental approval. Spring.

**HDFS 7600 MARRIAGE AND FAMILY THERAPY THEORY I (3).** LEC. 3. Overview of theoretical and historical foundations, classic and contemporary therapy models, and integrative frameworks for marriage and family therapy. Fall. Departmental approval.

**HDFS 7601 MARRIAGE AND FAMILY THERAPY THEORY LABORATORY I (1).** LAB. 3. Basic clinical skills and self-of-the-therapist issues. Fall. Departmental approval.

**HDFS 7610 MARRIAGE AND FAMILY THERAPY THEORY II (3).** LEC. 3. Current theory and conceptual issues in the practice of marriage and family therapy. Fall. Departmental approval.

**HDFS 7620 MARRIAGE AND FAMILY THERAPY CLINICAL ISSUES I: FAMILY SYSTEMS (3).** LEC. 3. Advanced study of conceptual models and clinical approaches utilized in treating family systems. Spring. Departmental approval.

**HDFS 7621 MARRIAGE AND FAMILY THERAPY LABORATORY II (1).** LAB. 1. Coreq., HDFS 7620 Application of clinical models in a supervised setting. Departmental approval.

**HDFS 7630 MARRIAGE AND FAMILY THERAPY CLINICAL ISSUES II: INDIVIDUALS (3).** LEC. 3. Assessment and treatment of children, adolescents, adults, and sexuality issues from a systemic perspective. Summer. Departmental approval.

**HDFS 7631 MARRIAGE AND FAMILY THERAPY LABORATORY III (1).** LAB. 3. Coreq., HDFS 7630. Application of clinical skills with families, couples and individuals. Summer. Departmental approval.

**HDFS 7640 MARRIAGE AND FAMILY THERAPY CLINICAL ISSUES III: COUPLES (3).** LEC. 3. Conceptual, assessment and clinical approaches utilized in treating couples. Fall. Departmental approval.

**HDFS 7650 MARRIAGE AND FAMILY THERAPY PROFESSIONAL ISSUES (3).** LEC. 3. Professional, ethical, and legal issues associated with the practice of marriage and family therapy. Departmental approval.

**HDFS 7900 DIRECTED STUDIES (1-3).** AAB/IND. SU. A) Child Care and Programs for Young Children; B) Family Relations; C) Human Development; D) Marriage & Family Therapy; E) Parent Education; F) Social Policy. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**HDFS 7910 PRACTICUM (1-9).** AAB/PRA. SU. A) Child Care and Programs for Young Children; B) Family Relations; C) Human Development; D) Marriage and Family Therapy; E) Parent Education; F) Social Policy; G) Teaching. Course may be repeated for a maximum of 9 credit hours.

**HDFS 7920 MARRIAGE AND FAMILY THERAPY INTERNSHIP (3).** INT. Clinical practice of marriage and family therapy. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**HDFS 7930 SEMINAR IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-3).** SEM. A) Infancy/Childhood; B) Adolescence/Young Adulthood; C) Adulthood/Aging; D) Family as a Microsystem; E) Family and Mesosystem; F) Family in the Macrosystem; G) Child and Family Program Planning and Evaluation. Departmental approval. Course may be repeated for a maximum of 16 credit hours.

**HDFS 7940 DIRECTED FIELD EXPERIENCE (1-9).** AAB/FLD. SU. A) Child Care and Programs for Young Children; B) Family Relations; C) Human Development; D) Marriage and Family Therapy; E) Parent Education; F) Social Policy. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**HDFS 7990 RESEARCH AND THESIS (1-10).** AAB/MST.

**HDFS 8050 ADVANCED RESEARCH METHODS I (3).** LEC. 3. Pr., HDFS 7060. In-depth examination of research methods, designs, and data analytic strategies commonly used in child and family research. Fall.

**HDFS 8051 ADVANCED RESEARCH METHODS (1).** LAB. 1. Pr., HDFS 7060. Coreq., HDFS 8050. Lab designed to enhance the application of advanced research methods and data analytic strategies used in HDFS research. Fall.

**HDFS 8060 APPLIED LONGITUDINAL METHODS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3).** LEC. 3. Pr., HDFS 7060. Coreq., HDFS 8061. In depth examination of applied longitudinal methodology as analytic strategies used for research in Human Development and Family Studies.

**HDFS 8061 APPLIED LONGITUDINAL METHODS IN HUMAN DEVELOPMENT AND FAMILY STUDIES LAB (1).** LAB. 1. Pr., HDFS 7060. Coreq., HDFS 8060. Lab designed to enhance the examination of longitudinal methodology as an analytic strategy used in HDFS research.

**HDFS 8070 ADVANCED RESEARCH METHODS II (1-3).** LEC. Pr., HDFS 7060. Specialized methods of advanced research in Human Sciences for 1 to 3 credits. Course may be repeated for a maximum of 9 credit hours.

**HDFS 8970 ADVANCED SPECIAL TOPICS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-3).** LEC. Departmental approval. Study of advanced topics of special interest beyond the current departmental offerings. Course may be repeated for a maximum of 9 credit hours.

**HDFS 8990 RESEARCH AND DISSERTATION (1-10).** DSR.

**History (HIST)**

Dr. Charles Israel - 844-4360

**HIST 1010 WORLD HISTORY I (3).** LEC. 3. History Core. Survey of world history from early humanity to the late eighteenth century.

**HIST 1017 HONORS WORLD HISTORY I (3).** LEC. 3. Pr., Honors College. History Core. A survey of world history from early humanity to the late eighteenth century.

**HIST 1020 WORLD HISTORY II (3).** LEC. 3. History Core. Survey of world history since the Industrial Revolution.

**HIST 1027 HONORS WORLD HISTORY II (3).** LEC. 3. Pr., Honors College. History Core. Survey of world history since the Industrial Revolution.

**HIST 1210 TECHNOLOGY AND CIVILIZATION I (3).** LEC. 3. History Core. Survey of the role of technology in history from prehistoric times to the beginning of the Industrial Revolution.

**HIST 1217 HONORS TECHNOLOGY AND CIVILIZATION I (3).** LEC. 3. Pr., Honors College. History Core. Survey of the role of technology in history from prehistoric times to the beginning of the Industrial Revolution.

**HIST 1220 TECHNOLOGY AND CIVILIZATION II (3).** LEC. 3. History Core. Survey of the role of technology from the Industrial Revolution to the present day.

**HIST 1227 HONORS TECHNOLOGY AND CIVILIZATION II (3).** LEC. 3. Pr., Honors College. History Core. Survey of the role of technology from the Industrial Revolution to the present day.

**HIST 2010 SURVEY OF UNITED STATES HISTORY TO 1877 (3).** LEC. 3. American history from the first humans in North America through the end of Reconstruction. Social, political and economic developments traced over centuries.

**HIST 2017 HONORS SURVEY OF UNITED STATES HISTORY TO 1877 (3).** LEC. 3. Pr., Honors College. Social, political, and economic development of United States from earliest occupation through Reconstruction.

**HIST 2020 SURVEY OF UNITED STATES HISTORY SINCE 1877 (3).** LEC. 3. History from the end of Reconstruction through the present. Social, political and economic developments are examined.

**HIST 2070 SURVEY OF EUROPEAN HISTORY FROM THE RENAISSANCE TO 1789 (3).** LEC. 3. Survey of European history from the first outbreak of the bubonic plague to the eve of the French Revolution.

**HIST 2080 SURVEY OF EUROPEAN HISTORY FROM 1789 TO THE PRESENT (3).** LEC. 3. European history from the French Revolution to the present.

**HIST 2100 SURVEY OF LATIN AMERICAN HISTORY (3).** LEC. 3. Latin American history from its Amerindian beginnings to the present. Both the Iberian and African backgrounds are explored.

**HIST 2110 SURVEY OF ASIAN HISTORY (3).** LEC. 3. Introduction to history, cultures and philosophies of peoples of Asia.

**HIST 2120 SURVEY OF MODERN AFRICAN HISTORY (3).** LEC. 3. Modern African history, from the end of the slave trade to the rise of nationalism and independence.

**HIST 2130 SURVEY OF MIDDLE EASTERN HISTORY (3).** LEC. 3. Major developments in the history of the Middle East in the 20th century.

**HIST 3000 HISTORY OF SOUTHEASTERN INDIANS (3).** LEC. 3. History of the southeastern Indians from pre-contact to removal including native culture, culture change, trade, Imperial rivalries and wars.

**HIST 3010 HISTORY OF ALABAMA (3).** LEC. 3. Broad study of Alabama history since its European settlement.

**HIST 3020 HISTORY OF WOMEN IN THE UNITED STATES (3).** LEC. 3. History of women in America from colonial period to the present; explores differences of region, race and class.

**HIST 3030 AFRICAN AMERICAN HISTORY (3).** LEC. 3. History of African Americans from African origins to the modern era, focusing on enslavement, emancipation and the struggle for equal rights.

**HIST 3040 AMERICAN RELIGIOUS HISTORY (3).** LEC. 3. Religious ideas and institutions from the colonial period to the present, including how religion has intersected with political and social history.

**HIST 3050 HISTORY OF POLITICAL PARTIES IN THE UNITED STATES (3).** LEC. 3. Examines political parties and party systems from the constitution to the present, including party organization, campaign techniques and presidential leadership.

**HIST 3060 ISSUES IN AFRICAN AMERICAN HISTORY (3).** LEC. 3. Issues and personalities in African American History. Course may be repeated for a maximum of 6 credit hours.

**HIST 3070 HISTORY OF UNITED STATES AIR POWER (3).** LEC. 3. Development of air and spacecraft as weapons of war including doctrines, technology, major leaders and great events of air power.

**HIST 3080 THE CIVIL RIGHTS MOVEMENT (3).** LEC. 3. History of the civil rights movement and its place in the broader African American struggle for freedom.

Social, political, and cultural history, with geographic and chronological focus on the U.S. South in the Post-World War II period.

**HIST 3300 GRECO-ROMAN CIVILIZATION (3).** LEC. 3. Classical civilizations of the Greeks and Romans as well as the Egyptian and Persian civilizations that influenced them.

**HIST 3310 EUROPE IN THE MIDDLE AGES (3).** LEC. 3. Survey of the thousand years which has been called the birth of Europe.

**HIST 3320 HISTORY OF IRELAND (3).** LEC. 3. History of Ireland from its beginnings to the present, including discussion of the present, troubled state of Ireland.

**HIST 3330 ISSUES IN THE HISTORY OF GERMANY AND CENTRAL EUROPE (3).** LEC. 3. Variable topics in the history of Germans, Slavs and other Central Europeans from the Era of Enlightened Absolutism through the fall of the Berlin Wall. Course may be repeated for a maximum of 6 credit hours.

**HIST 3340 HISTORY OF MODERN FRANCE (3).** LEC. 3. Political, social and cultural history of France since the French Revolution.

**HIST 3350 SURVEY OF RUSSIAN HISTORY (3).** LEC. 3. Russian history from the earliest development of a state in the area of Kiev down to the present Russian Federation.

**HIST 3360 CONTEMPORARY RUSSIA SINCE WORLD WAR II (3).** LEC. 3. Developments in contemporary Russia beginning with World War II and continuing to the present day.

**HIST 3370 EUROPEAN IMAGINATION (3).** LEC. 3. Examination of European domination of the globe through an investigation of how and why Europeans have imagined their civilization to be superior.

**HIST 3500 HISTORY OF AVIATION (3).** LEC. 3. History of aviation from the beginnings of human flight to the present.

**HIST 3510 HISTORY OF SPACE TRAVEL (3).** LEC. 3. Historical origins of the space age and U.S. space policy, including patterns that define the present and constrain the future of humans and machines.

**HIST 3520 SCIENTIFIC REVOLUTIONS (3).** LEC. 3. History of science, focusing on the concept of "scientific revolutions" in their social and intellectual context.

**HIST 3530 SCIENCE FICTION AS INTELLECTUAL HISTORY (3).** LEC. 3. The interaction between science, technology, and other aspects of modern culture as dramatized in classic and contemporary works of science fiction.

**HIST 3540 ISSUES IN TECHNOLOGY AND CULTURE (3).** LEC. 3. Issues such as the automobile, environment, industrialization and popular culture, relating to the role technology plays in society and culture. Course may be repeated for a maximum of 6 credit hours.

**HIST 3550 AMERICAN ENVIRONMENTAL HISTORY (3).** LEC. 3. Environmental history of U.S. from colonial era to present.

**HIST 3600 ISSUES IN WOMEN'S AND GENDER HISTORY (3).** LEC. 3. Topics in the history of women and gender. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

**HIST 3610 PRIVATE LIVES AND PUBLIC PLACES (3).** LEC. 3. Examines shifting boundaries between public and private in history. Topics vary according to instructor, but may include work, family, sexuality and the state. Course may be repeated for a maximum of 6 credit hours.

**HIST 3620 LANDSCAPE AND CULTURE (3).** LEC. 3. Social and cultural history of architecture and built-space in Europe and/or the United States.

**HIST 3630 HISTORY OF MEXICO (3).** LEC. 3. History of Mexico in the 19th and 20th centuries.

**HIST 3640 WORLD MILITARY HISTORY (3).** LEC. 3. Economic, social, political and technological roots of the ways of war employed by different civilizations throughout the ages.

**HIST 3650 20TH CENTURY WORLD WARS (3).** LEC. 3. The causes, conduct and consequences of World Wars I and II.

**HIST 3660 WORLD NAVAL HISTORY (3).** LEC. 3. Naval history from its origins in ancient times to the present, including the evolution of strategy and tactics, foreign policy and technological change.

**HIST 3670 CONTEMPORARY HISTORY (3).** LEC. 3. Examination of issues and events in the contemporary world to provide historical background on developments in selected areas/nations across the globe.

**HIST 3800 HISTORIAN'S CRAFT (3).** LEC. 3. Historical research methods and an introduction to historiography. History major.

**HIST 3920 HISTORY INTERNSHIP (3).** LEC. 3. Supervised on-the-job experience at archives, historical museums, historic preservation authorities, historical editing projects, and similar historical agencies. Departmental approval.

**HIST 3930 DIRECTED STUDIES (1-3).** IND. Individual reading or research projects in a specific area of history. Course may be repeated for a maximum of 3 credit hours. Departmental approval; 3.0 overall GPA. Course may be repeated for a maximum of 3 credit hours.

**HIST 3970 SPECIAL TOPICS (3).** LEC. 3. Topics vary. Course may be repeated for a maximum of 6 credit hours.

## History (HIST)

**HIST 4950 SENIOR THESIS: HISTORICAL RESEARCH AND WRITING (3).** LEC. 3. Pr., HIST 3800 Writing of an original paper based on research in primary source materials.

**HIST 4967 HONORS SPECIAL PROBLEMS (3).** LEC. 3. Pr., Honors College. The secondary literature on specialized topics in History.

**HIST 4997 HONORS THESIS (3).** LEC. 3. Pr., Honors College. Writing of an original paper based on research in primary materials.

**HIST 5000 AMERICAN COLONIAL HISTORY (3).** LEC. 3. Traces the development of the North American colonies from European settlement to 1763. Departmental approval.

**HIST 5010 AMERICAN REVOLUTION AND EARLY NATION: 1763-1800 (3).** LEC. 3. Revolutionary era and the foundations of the United States including struggle with England, Declaration of Independence, Revolutionary War, Confederation, Constitution, and Federalist-Republican conflicts. Departmental approval.

**HIST 5020 EARLY AMERICAN REPUBLIC: 1800-1850 (3).** LEC. 3. Development of the early nation including Thomas Jefferson, War of 1812, Jacksonian democracy, Indian removal, Old South and slavery, westward movement and political party conflict. Departmental approval.

**HIST 5030 SOUTH TO 1877 (3).** LEC. 3. Development of the old South, from southeastern Indians and European contact through Reconstruction including slavery, white social classes, women, and politics. Departmental approval.

**HIST 5040 CIVIL WAR ERA: 1850-1877 (3).** LEC. 3. Sectional conflict, Civil War, and Reconstruction including sectional differences, political crises, secession, Civil War campaigns, emancipation, and presidential and congressional Reconstruction. Departmental approval.

**HIST 5050 THE SOUTH SINCE 1877 (3).** LEC. 3. Examination of the South since 1877, with emphasis on social, economic, cultural, political and ideological developments. Departmental approval.

**HIST 5060 MAKING MODERN AMERICA: 1877-1929 (3).** LEC. 3. Development of the American economy, rise of big business, agrarian and labor protest, immigration, race relations, role of women, and role of government.

**HIST 5070 MODERN UNITED STATES HISTORY: 1929 TO THE PRESENT (3).** LEC. 3. United States History since 1929 with particular emphasis on the economy, changing role of government, America's role in world affairs and social changes. Departmental approval.

**HIST 5080 20TH CENTURY UNITED STATES DIPLOMACY (3).** LEC. 3. Examination of United States diplomatic history since the Spanish-American War. Departmental approval.

**HIST 5300 EARLY MODERN EUROPE: 1348-1715 (3).** LEC. 3. Major topics in European history for the period 1348-1715 including religious and cultural change and the relationship between state and society. Departmental approval.

**HIST 5310 ENLIGHTENMENT/REVOLUTIONARY EUROPE: 1715-1815 (3).** LEC. 3. Culture, society and politics of the 18th Century; origins and consequences of the French Revolution; the Napoleonic period. Departmental approval.

**HIST 5320 19TH CENTURY EUROPE: 1815-1918 (3).** LEC. 3. Cultural, economic and social developments as well as the politics and international relations of the major European states between 1815-1918. Departmental approval.

**HIST 5330 20TH CENTURY EUROPE (3).** LEC. 3. The history of Europe from the outbreak of World War I to the end of the Cold War. Departmental approval.

**HIST 5340 EUROPEAN CULTURAL AND INTELLECTUAL HISTORY (3).** LEC. 3. Development of European culture and the interfacings of culture, ideas, and social institutions from the early Enlightenment to the present. Or departmental approval.

**HIST 5350 REVOLUTIONARY RUSSIA: 1861-1939 (3).** LEC. 3. Analysis of the Revolutions of 1917, beginning with emancipation of serfs and ending with purges of the 1930's. Departmental approval.

**HIST 5360 MEDIEVAL BRITISH HISTORY (3).** LEC. 3. British history from Roman period to advent of Tudor dynasty. Departmental approval.

**HIST 5370 EARLY MODERN BRITISH HISTORY (3).** LEC. 3. British history from 1485 to the early 18th century. Departmental approval.

**HIST 5380 MODERN BRITISH HISTORY (3).** LEC. 3. British history from the political unification of England and Scotland to the present. Departmental approval.

**HIST 5500 THE GREAT TRANSFORMATION: THE INDUSTRIAL REVOLUTION (3).** LEC. 3. The Industrial Revolution of 18th, 19th and 20th centuries with a major focus on England and the United States with some treatment of Europe and Asia. Departmental approval.

**HIST 5580 THE HISTORY OF FLIGHT (3).** LEC. 3. The history of flight in political, economic, social, and cultural perspective. Departmental approval.

**HIST 5600 MODERN EAST ASIA (3).** LEC. 3. Histories, cultures and philosophies of China and Japan from 1800 to the present. Departmental approval.

**HIST 5610 COLONIAL LATIN AMERICA (3).** LEC. 3. European expansion into the western hemisphere from its Iberian background through the 19th century, fall of the Spanish and Portuguese empires. Departmental approval.

**HIST 5620 MODERN LATIN AMERICA (3).** LEC. 3. History of Latin America in the 19th and 20th centuries using a thematic approach arranged chronologically. Departmental approval.

**HIST 5640 ISLAM IN MODERN WORLD HISTORY (3).** LEC. 3. Study of adaptation of Islamic social and political theory to modern society and the modern state. Departmental approval.

**HIST 5650 HISTORY OF MODERN SOUTH ASIA (3).** LEC. 3. The making of Indo-Islamic culture, British rule of India, and the creation of Muslim Pakistan and "secular" India. Attention to role of individuals and events in history of nation-building. Departmental approval.

**HIST 5660 HISTORY OF MODERN CHINA: 1800-PRESENT (3).** LEC. 3. Examination and analysis of the political, social, economic, and intellectual changes in China from 1800-2000. Departmental approval.

**HIST 5670 HISTORY OF MODERN JAPAN: 1800-PRESENT (3).** LEC. 3. Examination and analysis of the political, social, economic, and intellectual changes in Japan from 1800-2000. Departmental approval.

**HIST 5680 AFRICA FROM 1800 TO PRESENT (3).** LEC. 3. Topics include state formation, ending of Atlantic slave trade and African slave trade and slavery, the rise and fall of colonial rule, and current problems facing independent countries.

**HIST 5710 FUNDAMENTALS OF ARCHIVAL THEORY AND PRACTICE (3).** LEC. 3. Examines the fundamentals of archival theory and practice; the relationship between archives and records management; and the role of records and archives in society. Departmental approval.

**HIST 5810 FUNDAMENTALS OF PUBLIC HISTORY (3).** LEC. 3. Overview of the public history field in its diverse venues and manifestations. Students will consider the ways in which historians engage various publics and will undertake projects to help understand and experience how public historians carry out their work and responsibilities. Departmental approval.

**HIST 5820 HISTORIC PRESERVATION AND CULTURAL RESOURCE MANAGEMENT (3).** LEC. 3. Overview of historic preservation and cultural resource management. Students will explore the history of historic preservation in the United States and beyond, while examining current preservation issues within a broader historical and theoretical context. Considers modern preservation in terms of individuals, societies, and cultures and their relationships to the built environment and cultural landscape. Departmental approval.

**HIST 5970 SPECIAL TOPICS IN HISTORY (3).** LEC. 3. Topic vary. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 6000 AMERICAN COLONIAL HISTORY (3).** LEC. 3. The development of the North American colonies from European settlement to 1763.

**HIST 6010 AMERICAN REVOLUTION AND EARLY NATION: 1763-1800 (3).** LEC. 3. The revolution and the foundations of the United States, including struggle with England, Declaration of Independence, Revolutionary War, Confederation, Constitution, and Federalist-Republican conflicts.

**HIST 6020 EARLY AMERICAN REPUBLIC: 1800-1850 (3).** LEC. 3. Development of the early nation including Thomas Jefferson, War of 1812, Jacksonian democracy, Indian removal, Old South and slavery, westward movement, and political party conflict.

**HIST 6030 SOUTH TO 1877 (3).** LEC. 3. Development of the Old South, from southeastern Indians and European contact through Reconstruction including slavery, white social classes, women and politics.

**HIST 6040 CIVIL WAR ERA: 1850-1877 (3).** LEC. 3. Sectional conflict, Civil War, and Reconstruction including sectional differences, political crises, secession, Civil War campaigns, emancipation, and presidential and congressional Reconstruction.

**HIST 6050 THE SOUTH SINCE 1877 (3).** LEC. 3. Examination of the South since 1877, with emphasis on social, economic, cultural, political and ideological developments.

**HIST 6060 MAKING MODERN AMERICA: 1877-1929 (3).** LEC. 3. Development of the American economy, rise of big business, agrarian and labor protest, immigration, race relations, role of women, and role of government.

**HIST 6070 MODERN UNITED STATES HISTORY: 1929 TO THE PRESENT (3).** LEC. 3. United States history since 1929 with particular emphasis on the economy, changing role of government, America's role in world affairs, and social changes.

**HIST 6080 20TH CENTURY UNITED STATES DIPLOMACY (3).** LEC. 3. Examination of United States diplomatic history since the Spanish-American War.

**HIST 6300 EARLY MODERN EUROPE: 1348-1715 (3).** LEC. 3. Major topics in European history for the period 1348-1715 including religious and cultural change and the relationship between state and society.

**HIST 6310 ENLIGHTENMENT/REVOLUTIONARY EUROPE: 1715-1815 (3).** LEC. 3. Culture, society and politics of the 18th Century; origins and consequences of the French Revolution; the Napoleonic period.

**HIST 6320 19TH CENTURY EUROPE: 1815-1918 (3).** LEC. 3. Examines cultural, economic and social developments as well as the politics and international relations of the major European states between 1815-1918.



## History (HIST)

- HIST 6330 20TH CENTURY EUROPE (3).** LEC. 3. The history of Europe from the outbreak of World War I to the end of the Cold War.
- HIST 6340 EUROPEAN CULTURAL AND INTELLECTUAL HISTORY (3).** LEC. 3. Development of European culture and the interfacings of culture, ideas, and social institutions from the early Enlightenment to the present.
- HIST 6350 REVOLUTIONARY RUSSIA: 1861-1939 (3).** LEC. 3. Analysis of the Revolutions of 1917, beginning with emancipation of serfs and ending with purges of the 1930s.
- HIST 6360 MEDIEVAL BRITISH HISTORY (3).** LEC. 3. British history from Roman period to advent of Tudor dynasty.
- HIST 6370 EARLY MODERN BRITISH HISTORY (3).** LEC. 3. British history from 1485 to the early 18th century.
- HIST 6380 MODERN BRITISH HISTORY (3).** LEC. 3. British history from the political unification of England and Scotland to the present.
- HIST 6500 THE GREAT TRANSFORMATION: THE INDUSTRIAL REVOLUTION (3).** LEC. 3. Explores the Industrial Revolution of 18th, 19th, and 20th centuries with a major focus on England and the United States and minor treatment of Europe and Asia.
- HIST 6580 TOPICS IN THE HISTORY OF FLIGHT (3).** LEC. 3. The history of flight in political, economic, social, and cultural perspective.
- HIST 6600 MODERN EAST ASIA (3).** LEC. 3. Histories, cultures, and philosophies of China and Japan from 1800 to the present.
- HIST 6610 COLONIAL LATIN AMERICA (3).** LEC. 3. European expansion into the western hemisphere from its Iberian background through 19th century fall of the Spanish and Portuguese empires.
- HIST 6620 MODERN LATIN AMERICA (3).** LEC. 3. History of Latin America in 19th and 20th centuries using a thematic approach arranged chronologically.
- HIST 6640 ISLAM, STATE AND SOCIETY IN MODERN WORLD HISTORY (3).** LEC. 3. Study of adaptation of Islamic social and political theory to modern society and the modern state.
- HIST 6650 HISTORY OF MODERN SOUTH ASIA, 1750 TO PRESENT (3).** LEC. 3. The making of Indo-Islamic culture, British rule of India, and the creation of Muslim Pakistan and "secular" India. Attention to role of individuals and events in history of nation-building.
- HIST 6660 HISTORY OF MODERN CHINA: 1800-PRESENT (3).** LEC. 3. Examination and analysis of the political, social, economic and intellectual changes in China from 1800-2000.
- HIST 6670 HISTORY OF MODERN JAPAN: 1800-PRESENT (3).** LEC. 3. Examination and analysis of the political, social, economic, and intellectual changes in Japan from 1800-2000.
- HIST 6680 AFRICA FROM 1800 TO PRESENT (3).** LEC. 3. Topics include state formation, ending of Atlantic slave trade and African slave trade and slavery, the rise and fall of colonial rule, and current problems facing independent countries.
- HIST 6710 FUNDAMENTALS OF ARCHIVAL THEORY AND PRACTICE (3).** LEC. 3. Examines the fundamentals of archival theory and practice; the relationship between archives and records management; and the role of records and archives in society.
- HIST 6810 FUNDAMENTALS OF PUBLIC HISTORY (3).** LEC. 3. Overview of the public history field in its diverse venues and manifestations. Students will consider the ways in which historians engage various publics and will undertake projects to help understand and experience how public historians carry out their work and responsibilities.
- HIST 6820 HISTORIC PRESERVATION AND CULTURAL RESOURCE MANAGEMENT (3).** LEC. 398. Historic Preservation and Cultural Resource Management. Students will explore the history of historic preservation in the United States and beyond, while examining current preservation issues within a broader historical and theoretical context. Considers modern preservation in terms of individuals, societies, and cultures and their relationships to the built environment and cultural landscape.
- HIST 6970 SPECIAL TOPICS IN HISTORY (3).** LEC. 3. Course may be repeated for a maximum of 6 credit hours.
- HIST 7100 INTRODUCTORY SEMINAR IN AMERICAN HISTORIOGRAPHY (3).** SEM. 3. Major historiographical trends in general American history and in particular sub-fields.
- HIST 7110 SEMINAR IN AMERICAN COLONIAL HISTORY (3).** SEM. 3. Development of the British North American colonies, including Indians, English background, exploration, settlement, rebellions, religion, slavery, imperial rivalries and women.
- HIST 7120 SEMINAR IN AMERICAN REVOLUTION AND EARLY NATION (3).** SEM. 3. Birth of the American nation and its re-birth under the Constitution.
- HIST 7130 SEMINAR IN EARLY AMERICAN REPUBLIC (3).** SEM. 3. Issues in the Early Republic, including political transformations, sectional conflict, women and gender roles, industrialization, and reform movements.
- HIST 7140 SEMINAR IN OLD SOUTH (3).** SEM. 3. History of the Old South, including colonial settlement, slavery, political transformations, sectional conflict, women and gender roles and religion.
- HIST 7150 SEMINAR IN CIVIL WAR ERA (3).** SEM. 3. Examines sectional conflict, Civil War, and Reconstruction, including political, military and social development.
- HIST 7160 SEMINAR IN NEW SOUTH (3).** SEM. 3. Examines the South in United States history since 1877.
- HIST 7170 SEMINAR IN UNITED STATES PROGRESSIVE ERA (3).** SEM. 3. Examines in depth the history of the United States between 1877 - 1929.
- HIST 7180 SEMINAR IN MODERN UNITED STATES HISTORY (3).** LEC. 3. A broad introduction to the historiography relating to United States history since 1929.
- HIST 7190 SEMINAR IN AFRICAN AMERICAN HISTORY (3).** SEM. 3. Analysis of the major historiographical works on the social, political and economic history of African Americans.
- HIST 7200 SEMINAR IN UNITED STATES WOMEN'S HISTORY (3).** SEM. 3. Change and continuity in the lives of American women.
- HIST 7210 SEMINAR IN AMERICAN RELIGIOUS HISTORY (3).** SEM. 3. The role of religion in American history; recent writing on religion; and sociological and anthropological theories on religion.
- HIST 7220 DEVELOPMENT IN CIVIL RIGHTS MOVEMENT (3).** LEC. 3. In-depth study of the civil rights movement, with emphasis on the U.S. South in the post-World War II period. Major topics, basic literature, and historiographical debates examined.
- HIST 7400 INTRODUCTORY SEMINAR IN EUROPEAN HISTORIOGRAPHY (3).** SEM. 3. Major topics and historiographical debates in European history from the early modern period to the twentieth century.
- HIST 7410 SEMINAR IN EARLY MODERN EUROPE (3).** SEM. 3. Topics in the history of continental Europe, 1348-1715, including religious and cultural change and the relationship between state and society.
- HIST 7420 SEMINAR IN POPULAR CULTURE IN EARLY MODERN EUROPE (3).** SEM. 3. Major themes in the popular culture of early modern Europe, 1450-1800.
- HIST 7430 SEMINAR IN RUSSIAN SOCIETY IN REVOLUTION (3).** SEM. 3. Examination of the literature, concepts, and history of the transformation of Russian society between 1861 and 1939.
- HIST 7440 SEMINAR IN MODERN EUROPEAN CULTURAL POLITICS (3).** SEM. 3. Traditional and revisionist approaches to the study of the political uses of culture in nineteenth and twentieth century Europe.
- HIST 7450 SEMINAR IN THE FRENCH REVOLUTION (3).** SEM. 3. The historiography in the French Revolution's origins and legacy.
- HIST 7460 SEMINAR IN EARLY MODERN BRITAIN (3).** SEM. 3. Main themes and events of British history between 1603 and the 1760's.
- HIST 7470 SEMINAR IN EUROPEAN INTERNATIONAL HISTORY (3).** SEM. 3. Relations among the European powers in the period 1870-1945.
- HIST 7510 INTRODUCTORY SEMINAR IN HISTORIOGRAPHY OF TECHNOLOGY (3).** SEM. 3. Problems and issues in the history of technology, as well as key literature on the subject.
- HIST 7520 SEMINAR IN POLITICS AND TECHNOLOGY IN THE SPACE AGE (3).** SEM. 3. The political and technological context of the "space age."
- HIST 7530 SEMINAR IN SOUTHERN INDUSTRIALIZATION (3).** SEM. 3. Significant scholarly works and primary sources dealing with the history of industrialization and technology in the American South.
- HIST 7540 SEMINAR IN AEROSPACE HISTORY (3).** SEM. 3. Central problems, issues, and literature in aerospace history.
- HIST 7550 SEMINAR IN SCIENCE AND SOCIETY (3).** SEM. 3. Exploration of the interactions between science and politics in the twentieth century.
- HIST 7560 SEMINAR IN THE INDUSTRIAL REVOLUTION (3).** SEM. 3. Examines the central questions and historiography relating to the industrial revolution.
- HIST 7570 TECHNOLOGY IN SOCIAL AND CULTURAL HISTORY (3).** LEC. 3. Explore the literature in the history of technology that approaches the field from a social and cultural perspective.
- HIST 7630 SEMINAR IN LATIN AMERICAN HISTORY (3).** SEM. 3. Research tools, major issues, and sources in Latin American history.
- HIST 7690 SEMINAR IN MODERN WORLD HISTORY (3).** LEC. 3. Examination of world historiography and theory, with topical readings on comparative themes such as imperialism and colonialism, catch-up industrialization, decolonization, the Atlantic world, gender systems, religious diasporas, trade, and exploration.
- HIST 7700 SEMINAR IN HISTORICAL METHODS (3).** SEM. 3. Methodology and theory of historical research; preparation of a significant original research paper.
- HIST 7720 SEMINAR IN ARCHIVAL THEORY AND PRACTICE (3).** SEM. 3. Pr., HIST 5710 or HIST 6710. Development of archival theory in the major functional

## Horticulture (HORT)

areas of archival practice: appraisal, acquisition, arrange arrangement, description, preservation, reference and access, outreach and advocacy.

**HIST 7730 SEMINAR IN THE HISTORY OF RECORDS AND ARCHIVES (3).** SEM. 3. Pr., HIST 5710 or HIST 6710. Origins, organization, and development of records, record keeping systems, and archival institutions in Europe and North America. Departmental approval.

**HIST 7800 RESEARCH SEMINAR IN UNITED STATES HISTORY TO 1865 (3).** SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near publishable quality. Course may be repeated for a maximum of 6 credit hours.

**HIST 7810 RESEARCH SEMINAR IN UNITED STATES HISTORY SINCE 1865 (3).** SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near publishable quality. Course may be repeated for a maximum of 6 credit hours.

**HIST 7820 RESEARCH SEMINAR IN EARLY MODERN EUROPEAN HISTORY (3).** SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

**HIST 7830 RESEARCH SEMINAR IN MODERN EUROPEAN HISTORY (3).** SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

**HIST 7840 RESEARCH SEMINAR IN HISTORY OF TECHNOLOGY (3).** SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

**HIST 7850 RESEARCH SEMINAR IN LATIN AMERICAN HISTORY (3).** SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

**HIST 7910 PUBLIC HISTORY INTERNSHIP (3).** PRA. 3. Pr., HIST 6810 and P/C, HIST 7700. Apply principles of public history practice within a functioning venue/site under supervision of professional public historian, including final written report. Course may be repeated for a maximum of 6 credit hours.

**HIST 7920 ARCHIVAL INTERNSHIP (1-6).** INT. Pr., HIST 6710. Opportunity to apply the principles of archival practice within the context of a functioning archival repository under the supervision of professional archivists. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 7970 SPECIAL TOPICS IN HISTORY (3).** LEC. 3. Topics vary. Course may be repeated for a maximum of 9 credit hours.

**HIST 7990 RESEARCH AND THESIS (1-10).** MST. Research and writing of the M.A. thesis. Course may be repeated with change in topic.

**HIST 8000 READING COURSE IN AMERICAN HISTORY TO 1877 (3).** PRL. 3. Selected topics in American History to 1877. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 8010 READING COURSE IN AMERICAN HISTORY SINCE 1877 (3).** PRL. 3. Selected topics in American History since 1877. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 8300 READING COURSE IN EUROPEAN HISTORY TO 1815 (3).** PRL. 3. Selected topics in European History to 1815. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 8310 READING COURSE IN EUROPEAN HISTORY SINCE 1815 (3).** PRL. 3. Selected topics in European History since 1815. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 8500 READING COURSE IN THE HISTORY OF TECHNOLOGY (3).** PRL. 3. Selected topics in the History of Technology. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 8600 READING COURSE IN LATIN AMERICAN HISTORY (3).** PRL. 3. Selected topics in Latin American History. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HIST 8610 READING COURSE IN WORLD HISTORY (3).** LEC. 3. Directed readings in modern world history, focusing on one or two geographic areas or themes.

**HIST 8700 HISTORIOGRAPHY AND THEORY OF HISTORY (3).** SEM. 3. Explores the nature of history by tracing changing conceptions of historical thought and practice from their origins to the present.

**HIST 8710 INTRODUCTION TO THE TEACHING OF HISTORY (1).** SEM. 1. SU. Introduction to some of the basic challenges involved in teaching History at the college level.

**HIST 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Research and writing of the PhD dissertation. Course may be repeated with change in topic.

## Honors College (HONR)

Dr. James Hansen - 844-6225

**HONR 1007 HONORS TECHNOLOGY AND CULTURE I (6).** LEC. 6. Pr., Honors College. From an interdisciplinary perspective, this course examines the intersections of technology & technology & culture in a variety of social, historical, professional, and global setting.

**HONR 1017 HONORS TECHNOLOGY AND CULTURE II (6).** LEC. 6. Pr., Honors College. HONR 1007. From an interdisciplinary perspective, this course examines the intersections of technology & technology & culture in a variety of social, historical, professional, and global settings.

**HONR 1027 HONORS SUSTAINABILITY AND THE MODERN WORLD I (3).** LEC. 3. Pr., Honors College. Interdisciplinary exploration into concept of sustainability as theory and practice

**HONR 1037 HONORS SUSTAINABILITY AND THE MODERN WORLD II (3).** LEC. 3. Pr., Honors College. HONR 1027. Interdisciplinary exploration into concept of sustainability as theory and practice.

**HONR 1077 HONORS FRESHMAN EXPLORATION (1).** LEC. 1. SU. Pr., Honors College. Colloquium that introduces new Honors College students to the College and helps students become better informed about its resources and services.

**HONR 1087 HONORS LYCEUM (1).** LEC. 1. SU. Pr., Honors College. Weekly academic lectures followed by discussion and interaction. Course may be repeated for a maximum of 2 credit hours.

**HONR 1097 HONORS FORUM FOR FRESHMEN (1).** LEC. 1. SU. Pr., Honors College. Attendance at co-curricular events held in and around the Auburn campus.

**HONR 2087 HONORS BOOK CLUB (1).** LEC. 1. SU. Pr., Honors College. Attendance at co-curricular events held in and around the Auburn campus. Course may be repeated for a maximum of 2 credit hours.

**HONR 2097 HONORS FORUM FOR SOPHOMORES (1).** LEC. 1. SU. Pr., Honors College. Attendance at co-curricular events held in and around the Auburn campus.

**HONR 2717 HONORS HUMAN ODYSSEY 1 (3).** LEC. 3. Pr., Honors College. Examines the human endeavor from pre-history through the 18th century by exploring connections between the sciences and humanities.

**HONR 2727 HONORS HUMAN ODYSSEY 2 (3).** LEC. 3. Pr., Honors College. Examines the human endeavor from pre-history from the 18th century to the present by exploring connections between the sciences and humanities.

**HONR 3007 HONORS SEMINAR (3).** SEM. 3. Pr., Honors College. In fulfillment of the Honors Apogee, this seminar involves critical reading and research in advanced topics having both intra- and interdisciplinary implications and applications. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HONR 3097 HONORS FORUM FOR JUNIORS (1).** LEC. 1. SU. Pr., Honors College. Attendance at co-curricular events held in and around the Auburn campus.

**HONR 4007 HONORS APOGEE PROJECT (3).** IND. 3. Pr., Honors College. Advanced directed study, usually based in a student's undergraduate research, leading to the completion of an Honors Apogee Experience, the capstone of the Honors College. Course may be repeated for a maximum of 6 credit hours.

**HONR 4097 HONORS FORUM FOR SENIORS (1).** LEC. 1. SU. Pr., Honors College. Attendance at co-curricular events held in and around the Auburn campus.

## Horticulture (HORT)

Dr. Dave Williams - 844-3032

**HORT 1010 INTRODUCTION TO HORTICULTURE (1).** LEC. 1. Introduces scientific and practical aspects of pomology, olericulture, floriculture and landscape horticulture. Also presents the broad scope of career opportunities in the field of horticultural science. Fall.

**HORT 2010 FRUIT AND NUT PRODUCTION (4).** LEC. 3, LAB. 3. Introductory course in cultural practices and economics associated with commercial fruit and nut production. Fall.

**HORT 2020 HORTICULTURE CROP PRODUCTION (3).** LEC. 2, LAB. 3. Pr., BIOL 1010 or BIOL 1030 or BIOL 1037. Techniques of plant propagation and cultural methods for successful fruit and vegetable production. Fall.

**HORT 2030 VEGETABLE PRODUCTION (3).** LEC. 3. Principles, practices, establishment, production, maintenance, harvesting, storage and marketing of commercial vegetable crops.

**HORT 2040 ORGANIC GARDENING (3).** LEC. 3. Principles, production practices, maintenance, harvesting and marketing of organically and traditionally home-grown vegetables.

**HORT 2050 FOOD FOR THOUGHT (3).** LEC. 3. Study of history of food plants, including their impact on world culture, variety of uses, economic botany, production systems, and impact on societies. Fall.

**HORT 2210 LANDSCAPE GARDENING (4).** LEC. 2, LAB. 4. Principles of landscape gardening applied to residential and small-scale commercial grounds. Involves plant identification and use, basic landscape design, and landscape installation and management concepts. Summer and Fall.

## Horticulture (HORT)

**HORT 2240 PLANT PROPAGATION (3).** LEC. 2, LAB. 3. Pr., P/C, BIOL 1030 or BIOL 1037. Basic principles and practices involved in the propagation of horticulture plants. Departmental approval. Fall and Spring.

**HORT 2250 INTERIOR PLANTS AND FLORAL DESIGN (3).** LEC. 2, LAB. 2. Basic principles, practices and design with foliage plants and flowers in the interior setting. Summer and Fall.

**HORT 3000 GROWTH AND DEVELOPMENT OF HORTICULTURAL PLANTS (3).** LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1030. Growth and development of plants with concepts applied to the practice of Horticultural Science. Summer and Fall.

**HORT 3110 PLANTS AND PEOPLE: A HISTORY OF GARDENS IN CULTURAL CONTEXT (3).** LEC. 3. Heritage and traditions influencing the development of public and private garden styles, context, and function including cultural expressions, plant use, and impact of noted designers and horticulturists throughout history.

**HORT 3210 SMALL TREES, SHRUBS AND VINES (4).** LEC. 2, LAB. 6. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). Identification, culture and landscape use of small trees, shrubs and vines. Spring and Summer.

**HORT 3220 ARBORICULTURE (4).** LEC. 2, LAB. 6. Pr., BIOL 1030 or BIOL 1037. Identification, culture and use of ornamental trees in landscape plantings. Departmental approval. Fall.

**HORT 3280 LANDSCAPE CONSTRUCTION (3).** LEC. 3, LAB. 4. Principles and practices used in the interpretation and implementation of landscape construction and planting plans. Fall.

**HORT 3800 CAREERS IN HORTICULTURE (1).** LEC. 1. SU. Current developments and career opportunities in horticulture. Fall.

**HORT 3840 STUDY/TRAVEL IN HORTICULTURE (1-10).** AAB/FLD. Study of horticultural or fruit and vegetable science, landscape design, nursery and greenhouse management in U.S. or international location. May be repeated up to 10 credit hours. Course may be repeated for a maximum of 10 credit hours.

**HORT 3920 HORTICULTURE INTERNSHIP (4).** INT. 4. Practical on-the-job training for selected commercial horticultural companies. Course may be repeated for a maximum of 8 credit hours.

**HORT 3950 CAREERS IN HORTICULTURE (1).** LEC. 1. SU. Current developments and career opportunities in horticulture. Fall.

**HORT 4000 PESTICIDE MGT IN HORT (3).** LEC. 3. Pr., ENTM 4020 and PLPA 3000. Proper management of pesticides in horticulture; decision making skills in relation to control strategies; environmental issues relevant to horticulture; safety considerations; scouting and application techniques. Fall.

**HORT 4100 HERBACEOUS ORNAMENTALS (4).** LEC. 2, LAB. 4. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). Identification, culture, and use of herbaceous annuals and perennials, bulbs, herbs, and ornamental grasses. Consideration of flower bed and border preparation, care and maintenance. Spring and Summer.

**HORT 4150 RETAIL GARDEN CENTER MANAGEMENT (3).** LEC. 3, LAB. 4. Pr., HORT 3210 or HORT 3220. The following objectives will be covered: financing, location, design, stocking, selling, personnel management, advertising and maintaining plants. Summer.

**HORT 4250 INTERMEDIATE FRUIT & VEG PROD (3).** LEC. 3. Pr., HORT 2040 or HORT 2030. Intermediate horticulture course in which students apply knowledge gained in the classroom to hands-on fruit and vegetable gardening practices.

**HORT 4270 INTERMEDIATE LANDSCAPE DESIGN (3).** LEC. 2, LAB. 4. Pr., HORT 3210 or HORT 3220 or HORT 4100. Human nature, art and technology and their influence on landscape design.

**HORT 4280 ADVANCED LANDSCAPE DESIGN (3).** LEC. 1, LAB. 4. Pr., HORT 4270. Continuation of HORT 4270 with an emphasis on design projects. Fall.

**HORT 4300 COMP AIDED PLANTING DESIGN (3).** LEC. 3. Graphic concepts relating to spatial visualization and communication and project cost estimation using computer aided drafting and project management software developed for landscape professionals. Spring.

**HORT 4930 DIRECTED STUDIES (1-3).** AAB/IND. Directed Studies related to research, teaching or outreach educational programs in Horticulture. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HORT 4967 HONORS SPECIAL PROBLEMS (1-3).** LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**HORT 4970 SPECIAL TOPICS (3).** IND. 3. Principles, methods and techniques for understanding various horticultural disciplines. Course may be repeated for a maximum of 6 credit hours.

**HORT 4997 HONORS THESIS (1-3).** LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**HORT 5110 TREE FRUIT CULTURE (2).** LEC. 2. Pr., HORT 3000. Manipulation of growth and development of tree fruit crops by cultural methods. Departmental approval. Summer, odd years.

**HORT 5120 SMALL FRUIT AND PECAN CULTURE (3).** LEC. 2, LAB. 2. Pr., BIOL 3100 and BIOL 3101. Principles and practices involved in the production and marketing of small fruits and pecans. Departmental approval. Spring.

**HORT 5130 SUSTAINABLE VEGETABLE CROP PRODUCTION (3).** LEC. 2, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and HORT 3000. Best management practices and quality of vegetable crops. Departmental approval. Spring.

**HORT 5140 POST-HARVEST BIOLOGY AND TECHNOLOGY (3).** LEC. 2, LAB. 3. Pr., PLPA 3000 and HORT 3000. Physiological changes occurring in fruits, vegetables and other horticultural products after harvest. Departmental approval. Spring.

**HORT 5210 LANDSCAPE BIDDING, INSTALLATION AND MAINTENANCE (4).** LEC. 3, LAB. 3. Pr., AGRN 2040 and PLPA 3000. Principles and practices of the bidding, installation and maintenance of commercial and residential landscapes. Spring.

**HORT 5220 GREENHOUSE MANAGEMENT SCIENCE (4).** LEC. 3, LAB. 2. Pr., HORT 3000 and CHEM 1030 and HORT 2240 and AGRN 2040. Management, culture and economics of commercial greenhouse production. Fall.

**HORT 5230 NURSERY MANAGEMENT (4).** LEC. 3, LAB. 4. Pr., HORT 2240 and HORT 3000. Factors affecting plant production. Environmental issues related to facilities design and pesticide and nutrient management. Departmental approval. Fall.

**HORT 6110 TREE FRUIT CULTURE (2).** LEC. 2. Pr., HORT 3000. Manipulation of growth and development of tree fruit crops by cultural methods. Departmental approval. Summer, odd years.

**HORT 6120 SMALL FRUIT AND PECAN CULTURE (3).** LEC. 2, LAB. 2. Pr., BIOL 3100 and BIOL 3101. Principles and practices involved in the production and marketing of small fruits and pecans. Departmental approval. Spring, even years.

**HORT 6130 SUSTAINABLE VEGETABLE CROP PRODUCTION (3).** LEC. 2, LAB. 2. Pr., HORT 3000. Advanced course in best management practices and quality of vegetable crops. Departmental approval. Spring.

**HORT 6140 POST-HARVEST BIOLOGY AND TECHNOLOGY (3).** LEC. 2, LAB. 2. Pr., PLPA 3000 and HORT 3000. Physiological changes occurring in fruits, vegetables and other horticultural products after harvest. Spring.

**HORT 6210 LANDSCAPE BIDDING, INSTALLATION AND MAINTENANCE (4).** LEC. 3, LAB. 3. Pr., AGRN 2040 and PLPA 3000. Principles and practices of the bidding, installation and maintenance of commercial and residential landscapes. Spring.

**HORT 6220 GREENHOUSE MANAGEMENT SCIENCE (4).** LEC. 3, LAB. 2. Pr., HORT 3000 and CHEM 1030 and HORT 2240 and AGRN 2040. Management, culture and economics of commercial greenhouse production. Fall.

**HORT 6230 NURSERY MANAGEMENT (4).** LEC. 3, LAB. 4. Pr., HORT 2240 and HORT 3000. Factors affecting plant production. Environmental issues related to facilities design and pesticide and nutrient management. Departmental approval. Fall.

**HORT 7010 EXPERIMENTAL METHODS IN HORTICULTURE (4).** LEC. 2, LAB. 3. Coreq., STAT 7000. Principles and methodologies of horticultural research, experimental design, preparation of project and grant proposals, and development of publication skills. Departmental approval. Fall.

**HORT 7040 ADVANCED GROWTH AND DEVELOPMENT OF HORTICULTURAL PLANTS (3).** LEC. 3. Pr., (HORT 3000 or BIOL 3100) and BIOL 3101. Plant growth and development from seed germination, through maturity and senescence. Summer, even years.

**HORT 7050 NUTRITIONAL REQUIREMENTS OF HORTICULTURAL PLANTS (3).** LEC. 3, LAB. 2. Pr., HORT 3000. Nutritional requirements of horticulture crops and factors affecting these requirements. Departmental approval. Summer, odd years.

**HORT 7070 PLANT BIOTECHNOLOGY (4).** LEC. 2, LAB. 3. Pr., BIOL 3000. Plant biotechnology, including plant tissue culture technologies and genetic transformation and applications to horticultural crop improvement. Departmental approval. Spring, odd years.

**HORT 7080 ENVIRONMENTAL PLANT STRESS (3).** LEC. 4. Pr., HORT 3000. Mechanisms related to adaptation of plants to environmental stresses. Departmental approval.

**HORT 7850 URBAN FORESTRY SEMINAR (1).** LEC. 3. SU. Presentation and discussion of research, scientific papers and issues related to urban forestry establishment, care and planning. Credit will not be given for HORT 7850 and FORY 7850.

**HORT 7950 SEMINAR (1).** SEM. SU. Graduate students are required to attend all seminars. Course may be repeated with change in topic.

**HORT 7960 SPECIAL PROBLEMS (1-3).** IND. 3. Conferences, problems and assigned readings in horticulture. Course may be repeated for a maximum of 6 credit hours.

**HORT 7970 SPECIAL TOPICS IN HORTICULTURE (1-3).** LEC. Principles, methods and techniques involved in gaining an understanding of different horticultural disciplines. Course may be repeated for a maximum of 3 credit hours.

## Human Sciences (HUSC)

**HORT 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**HORT 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with a change in topic.

### Hotel and Restaurant Management (HRMT)

Dr. Martin O'Neill - 844-4261

**HRMT 1010 INTRODUCTION TO HOSPITALITY MANAGEMENT (2).** LEC. 2. Overview of the hotel, restaurant, club, and travel industries and their interaction.

**HRMT 2300 HOSPITALITY LAW (3).** LEC. Pr., (HRMT 1010 or NUFS 1010). Legal systems and laws relevant to the management of restaurants, hotels, private clubs and other hospitality operations. Spring.

**HRMT 2400 FOOD PRODUCTION IN HOSPITALITY (4).** LEC. 3, LAB. 3. Pr., HRMT 1010 and (NTRI 2000 or NTRI 2007) and BIOL 1000. Skills, competencies and knowledge to manage a variety of food production and service facilities. Fall, Spring.

**HRMT 2500 LODGING OPERATIONS (2).** LEC. 2. Pr., HRMT 1010 or NUFS 1010. Lodging operations management, with emphasis on guest cycle.

**HRMT 2940 PROFESSIONAL DEVELOPMENT IN HOSPITALITY (1).** LEC. 1. Pr., (HRMT 1010 or NUFS 1010). Departmental approval. Job-seeking and career development skills, based upon individual needs. Departmental approval.

**HRMT 3200 HOSPITALITY FINANCIAL MANAGEMENT (3).** LEC. 3. Pr., ACCT 2810 and HRMT 1010 or NUFS 1010. Financial systems and statements in the hospitality industry. Spring.

**HRMT 3400 HOSPITALITY MARKETING (3).** LEC. 3. Pr., HRMT 1010 or NUFS 1010 and (P/C, MKTG 3310 or P/C, MKTG 3810). Service marketing concepts and issues as applied to the global hospitality industry. Springs.

**HRMT 3800 HOSPITALITY INFORMATION TECHNOLOGY (3).** LEC. 3. Pr., HRMT 2400 or NUFS 2400 and HRMT 2500. Strategic and operational issues surrounding introduction of technology in hospitality.

**HRMT 4200 HOSPITALITY FACILITIES MANAGEMENT (3).** LEC. 3. Pr., HRMT 2400 or NUFS 2400 and HRMT 2500. Departmental approval. Design and operation of hospitality facilities.

**HRMT 4300 FOOD AND BEVERAGE MANAGEMENT (3).** LEC. 3. Pr., HRMT 2400 or NUFS 2400 and (MNGT 3810 or MNGT 3100). Control system design, implementation, and management in food and beverage operations.

**HRMT 4350 ADVANCED RESTAURANT MANAGEMENT (3).** LEC. 3. Pr., HRMT 2400 and HRMT 4300. Advanced concepts and managerial issues of restaurant management. Spring.

**HRMT 4500 STRATEGIC HOSPITALITY MANAGEMENT (3).** LEC. 3. Pr., HRMT 1010 and MNGT 3100 or MNGT 3810. Development and implementation of strategic management in hospitality.

**HRMT 4600 BEVERAGE APPRECIATION (3)** LEC. 3. Departmental approval. Production, selection, service, and sensory evaluation of alcoholic and non-alcoholic beverages. Must be 21 years of age.

**HRMT 4800 SENIOR LECTURE SERIES (1).** LEC. 1. SU. Successful leaders to share their experiences with career development, industry related topics and issues, successful management strategies and leadership. Spring. Departmental approval.

**HRMT 4910 HOSPITALITY LEADERSHIP PRACTICUM (1).** LEC. 3. Pr., HRMT major, 400 hours (time at Auburn) work experiences in hospitality field, senior standing, 2.2 GPA or departmental approval. Senior management perspective (rotation) on the management and operation of the Auburn University Hotel and Conference Center.

**HRMT 4920 HOSPITALITY INTERNSHIP (4).** INT. Pr., HRMT major, 400 hours (during collegiate experience) work experience in hospitality field, 2.2 GPA. Application of theories and principles of hospitality in a professional hospitality setting.

**HRMT 5460 CATERING AND EVENT MANAGEMENT (3).** LEC. 2, LAB. 1. Pr., HRMT 2400 or NUFS 2400. Management and organization of menu planning, food knowledge, types of service, customer relations, and production/service techniques in catering and special event situations. Credit will not be give for both HRMT 5460 and HRMT 6460. Departmental approval.

**HRMT 5530 SCIENCE OF QUALITY SERVICE IN HOSPITALITY (3).** LEC. 3. Pr., HRMT 2400 or NUFS 2400 and HRMT 2500. Role of quality service in attaining and retaining customers with emphasis on organizational strategic mission. May count HRMT 5530 or 6530/6536.

**HRMT 5540 CONFERENCE COORDINATION (3).** LEC. 3. Pr., HRMT 1010 or NUFS 1010. Departmental approval. Systems for managing conference coordination. May count HRMT 5540 or 6540/6546.

**HRMT 5550 CLUB MANAGEMENT (3).** LEC. 3. Pr., HRMT 2400 or NUFS 2400 and HRMT 2500. Examination of unique features, opportunities and problems associated with club management. Credit will not be given for HRMT 5550 and HRMT 6550/6556.

**HRMT 5570 GLOBAL HOSPITALITY (3).** LEC. 3. Pr., MNGT 3100 or MNGT 3810. Departmental approval. Contemporary issues confronting the global hospitality industry. Management and marketing operations emphasized. Credit will not be given for NUFS 5570 and NUFS 6570/6576.

**HRMT 5590 RECREATIONAL FOODSERVICE MANAGEMENT (3).** LEC. 3. Pr., HRMT 2400 or NUFS 2400. Departmental approval. Methods and systems of managing foodservice operations recreational facilities. Credit is not allowed for both HRMT 5590 and HRMT 6590/6596.

**HRMT 6460 CATERING AND EVENT MANAGEMENT (3).** LEC. 2, LAB. 1. Departmental approval. Management and organization of menu planning, food knowledge, types of service, customer relations, and production/service techniques in catering and special event situations. Credit will not be give for both HRMT 5460 and HRMT 6460. Spring.

**HRMT 6530/6536 SCIENCE OF QUALITY SERVICE FOR HOSPITALITY (3).** LEC. 3. Departmental approval. This course introduces students to the important role that quality service plays in attaining and retaining customers in the pursuit of an organizations strategic mission. Credit will not be given for HRMT 6530/6536 and HRMT 5530.

**HRMT 6540/6546 CONFERENCE COORDINATION (3).** LEC. 3. Systems for the management of the conference coordination segment of the hospitality industry. Credit will not be given for HRMT 6540/6546 and HRMT 5540. Departmental approval.

**HRMT 6550/6556 CLUB MANAGEMENT (3).** LEC. 3. Unique features, opportunities, and problems associated with resort and club management. Credit will not be given for HRMT 6550/6556 and HRMT 5550. Departmental approval.

**HRMT 6570/6576 GLOBAL HOSPITALITY (3).** LEC. 3. Departmental approval. Contemporary issues confronting the global hospitality industry. Credit will not be given for HRMT 6570/6576 and HRMT 5570.

**HRMT 6590/6596 RECREATIONAL FOODSERVICE MGNT (3).** LEC. 3. Methods and systems of managing foodservice operations in recreational facilities. Credit will not be given for both HRMT 6590/6596 and HRMT 5590. Departmental approval.

**HRMT 7920/7926 PROF INTERNSHIP IN HRMT (1-3).** INT. SU. Application and analysis of principles and theories of hospitality in a professional hospitality setting. No more than three hours may count toward a graduate degree. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**HRMT 8860/8866 CURRENT ISSUES IN HRMT (3).** LEC. 3. Analysis of current issues in the hospitality industry with emphasis on management.

**HRMT 8870 ADVANCED HOSPITALITY MANAGEMENT RESEARCH AND APPLICATIONS (3).** LEC. 3. Comprehensive review of the academic research process in the context of hospitality management.

**HRMT 8880 THEORETICAL DEVELOPMENTS FOR HOSPITALITY (3).** LEC. 3. The nature of hospitality theory and its development.

### Human Sciences (HUSC)

**HUSC 2000 HUNGER: CAUSES, CONSEQUENCES, AND RESPONSES (3).** LEC. 3. Examine hunger as a complex issue of sustainable human development. Topics include causes and consequences of domestic and global hunger and potential solutions. Credit will not be given for both HUSC 2000 and HUSC 2007.

**HUSC 2007 HUNGER: CAUSES, CONSEQUENCES, AND RESPONSES (3).** LEC. 3. Pr., Honors College. Examine hunger as a complex issue of sustainable human development. Topics include causes and consequences of domestic and global hunger and potential solutions. Credit will not be given for both HUSC 2000 and HUSC 2007.

**HUSC 3380/3383 STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (2).** LEC. 2. Coreq., HUSC 4010 and HUSC 4380 and HUSC 4940. Pre-departure orientation for student participating in the Joseph S. Bruno Auburn Aboard program in Ariccia, Italy. May also be taken by students exploring study abroad opportunities through the alternative International Minor in Human Sciences. Ungapped 2.5 gpa. Departmental approval.

**HUSC 4000 HUNGER STUDIES CAPSTONE (3).** LEC. 3. Pr., HUSC 2000 or HUSC 2007. Examination of global and domestic hunger issues from multidisciplinary perspectives.

**HUSC 4010 CHS@AU IN ITALY: INTEGRATED GLOBAL STUDIES (6).** LEC. 6. Coreq., HUSC 3380 and HUSC 4380 and HUSC 4940. Multi-faceted cultural experience focused on individuals/ families in the context of history and Italian culture. Ungapped 2.5 gpa. Departmental approval.

**HUSC 4380 STUDY AND TRAVEL IN HUMAN SCIENCES (2).** AAB/FLD. 2. Coreq., HUSC 3380 and HUSC 4010 and HUSC 4940. Broaden world views, increase awareness and appreciation of cultures, and demonstrate an ability to function in a global community through the Joseph S. Bruno Aboard in program in Ariccia, Italy. Ungapped 2.5. gpa. Departmental approval.

**HUSC 4940 CHS@AU IN ITALY: DIRECTED FIELD EXPERIENCES (6).** AAB/FLD. 6. Coreq., HUSC 3380 and HUSC 4010 and HUSC 4380. Supplemental lectures for HUSC 4010 provided through field trips and participation in Italian culture experiences. Ungapped 2.5 gpa. Departmental approval.

## Industrial Design (INDD)

**HUSC 7040 RELATIONSHIP DEVELOPMENT AND PROCESS IN ADULTHOOD (3).** LEC. 3. Theoretical and empirical themes focused on processes and dynamics of relationships in adulthood and aging.

**HUSC 7910 CHS@AU IN ITALY PROGRAM ADMINISTRATION PRACTICUM (6).** PRA. 6. SU. Graduate status and acceptance to the Joseph S. Bruno Auburn Abroad in Italy program. One course in interpersonal communications or Departmental approval. Directed practical experience administering an undergraduate study abroad program.

### Industrial Design (INDD)

Prof. Clark Lundell - 844-2364

Prof. Bret Smith - 844-2364

**INDD 1120 INDUSTRIAL DESIGN IN MODERN SOCIETY (3).** LEC. 3. Survey of design and its impact upon modern society. Review of methods, products, marketing, patents, education, and career opportunities.

**INDD 1310 SYNTHESIS OF DRAWING (10).** LEC. 3, LST. 12. Developing mechanical and production design drawings, with in-depth study of perspective systems. Product design communication with emphasis on drawing, development, presentation.

**INDD 1320 PROTOTYPE FABRICATION (3).** LEC. 2, LAB. 2. Fabrication of three-dimensional models utilizing various materials and machineries. Includes model making, creative modeling, study models, presentation models, mock-ups and prototypes.

**INDD 2110 TWO DIMENSIONAL INDUSTRIAL DESIGN PRINCIPLES (6).** LEC. 2, LST. 10. Transference of abstract principles of design to fabrication of simple tools. Emphasis on expression of functional objects.

**INDD 2120 COMPUTER AND DESIGN COMMUNICATIONS (3).** LEC. 2, LAB. 2. Alternative modes of communicating design ideas via computer. Executing design ideas for two-dimensional design fundamentals and mechanical design drawings.

**INDD 2130 PRESENTATION RENDERING (3).** LEC. 2, LAB. 2. Concept development using drawing and rendering skills with different media for ideas communication and presentation.

**INDD 2210 THREE DIMENSIONAL INDUSTRIAL DESIGN PRINCIPLES (6).** LEC. 2, AAB/LST. 10. Pr., INDD 2110. Analysis of design fundamentals through three dimensional form. Analyzing function, utility, convenience, safety, maintenance and sustainable design.

**INDD 2220 ANTHROPOMETRY (3).** LEC. 3. Pr., INDD 2110. Body measurements, movements and human capacity in relation to design with introduction to ergonomics and human physiology as it relates to design. Departmental approval.

**INDD 2230 HISTORY OF INDUSTRIAL DESIGN (3).** LEC. 3. Pr., INDD 2110. Survey humankind's production of artifacts, from prehistory to present. Emphasis on ideas that mass produced artifacts mirror history and everyday culture.

**INDD 3110 EXHIBIT AND PACKAGING (6).** LEC. 1, LST. 8. Pr., INDD 2120. Display systems using models, concepts development, rendering, packaging, identity programs and professional presentations.

**INDD 3120 INDUSTRIAL DESIGN METHODS (3).** LEC. 3. Pr., INDD 2210. Introduction to design management. Design methods and organizational procedures in analysis and solutions of design problems. Surveying philosophies and theories of design.

**INDD 3130 BASIC PHOTOGRAPHY FOR INDUSTRIAL DESIGN (3).** LEC. 2, LAB. 2. Pr., INDD 2210. Photography in design and art environments. Techniques of developing, printing and enlarging. Lighting techniques for portfolio photography, including lighting, studio photography, composition.

**INDD 3210 PRODUCT DESIGN (6).** LEC. 2, LST. 10. Pr., INDD 2210. Product design utilizing design methodology from proposal to working pre-prototype, including planning, research, development, model-making, manufacturing and documentation.

**INDD 3220 MATERIALS AND TECHNOLOGY (3).** LEC. 3. Pr., INDD 3120. Characteristics and utility of materials such as plastic, metal, and ceramics in manufacture and the study of machine/tool processes used by industry.

**INDD 3230 ADVANCED COMPUTER AIDED DESIGN (3).** LEC. 2, LAB. 2. Pr., INDD 2120. Introduction to CAD software emphasizing three-dimensional modeling. Students will learn drawing functions. Concepts of three-dimensional relationship of objects discussed.

**INDD 4110 ADVANCED PRODUCT DESIGN (6).** LEC. 2, AAB/LST. 10. Pr., INDD 3120 and INDD 3210. Design or redesign of products and systems of advanced complexity.

**INDD 4210 INDUSTRIAL DESIGN THESIS (6).** LEC. 2, AAB/LST. 10. Pr., INDD 4110. Product design projects involving all design phases; including planning, research, development, finalization, specification, and documentation.

**INDD 4220 PROFESSIONAL PRACTICE (3).** LEC. 3. Pr., INDD 3110 and INDD 3210. Business aspects of industrial design, including property, design contract, letters of agreement, business planning and design marketing.

**INDD 4907 HONORS READING (1-3).** LEC. Departmental approval.

**INDD 4997 HONORS THESIS (1-3).** LEC. Pr., Honors College. Departmental approval.

**INDD 5010 HISTORY OF INDUSTRIAL DESIGN II (3).** LEC. 3. A survey of humankind's production of artifacts, from prehistory to contemporary times, with an emphasis on the idea that mass produced artifacts mirror the meanings of historical events and everyday culture.

**INDD 5030 CASE STUDIES IN DESIGN (3).** LEC. 3. Design projects undertaken by industry studied by examination of artifacts and records, and by class discussion. Focus on the socio-cultural relevancy of the artifacts.

**INDD 5120 PROFESSIONAL PORTFOLIO (3).** LEC. 3. Pr., INDD 3110 and INDD 3210. Design and development of a portfolio and promotional material presenting the student's work to entry-level professional standards.

**INDD 5960 SPECIAL PROBLEMS (1-5).** AAB. Development of individual projects. Research, design and reports on approved topics. Course may be repeated for a maximum of 15 credit hours.

**INDD 6010 HISTORY OF INDUSTRIAL DESIGN II (3).** LEC. 3. A survey of humankind's production of artifacts, from prehistory to contemporary times, with an emphasis on the idea that mass produced artifacts mirror the meanings of historical events and everyday culture.

**INDD 6030 CASE STUDIES IN DESIGN (3).** LEC. 3. Design projects undertaken by industry studied by examination of artifacts and records, and by class discussions. Focus on the socio-cultural relevancy of the artifacts.

**INDD 6120 PORTFOLIO (3).** LEC. 3. Preparation of professional portfolio for graduation and employment.

**INDD 6960 SPECIAL PROBLEMS (1-5).** AAB. Development of individual projects. Research, design and reports on approved topics. Course may be repeated for a maximum of 15 credit hours.

**INDD 7010 DESIGN ORIENTATION (3).** LEC. 3. Introduction to the Industrial Design graduate program: degree options, study directions, research methods, and areas. Students are required to develop a research/project proposal.

**INDD 7020 COMPUTER/INDUSTRIAL DESIGN (3).** LEC. 3. Synthesizing studies in research, analysis, and application based on interdisciplinary concept. Emphasis on the relation of products and systems to those who use them.

**INDD 7610 PRINCIPLES OF INDUSTRIAL DESIGN (3).** LEC. 3. Detailed study of the communication principles of form qualities with emphasis of these aesthetic principles to the technical and human factors of artifacts.

**INDD 7620 DESIGN MANAGEMENT (3).** LEC. 3. Detailed study of the industrial design project management and development with emphasis on the interrelational management concepts of research, product planning, production and marketing.

**INDD 7630 HUMAN FACTORS IN DESIGN (3).** LEC. 3. Theoretical and empirical examination of human factors (Anthropometrics, Biotechnology, Engineering Psychology, Behavioral Cybernetics, Ergonomics) as applied to man-machine environmental systems.

**INDD 7640 AESTHETICS IN DESIGN (3).** LEC. 3. Aesthetics in the context of the designed environment encompassing: non-verbal communication; object language semiotics; gestalt and perception systems; information aesthetics, and consumer product safety.

**INDD 7650 DESIGN THEORIES (3).** LEC. 3. Examination of design theories and philosophies related to technical artifacts in man-machine systems. Comparative studies of unifying theories in art, science, design, technology and the humanities.

**INDD 7660 INDUSTRIAL DESIGN METHODOLOGY (3).** LEC. 3. Industrial design methodologies and specific methods employed in research, analysis, synthesis, and evaluation in comprehensive design problems.

**INDD 7670 SYSTEMS DESIGN (3).** LEC. 3. Systems approach and interdisciplinary team work to design problems. inquires into details of sub-systems, components and parts, with emphasis on the relation of the performance of technical systems to optional human factor effects.

**INDD 7910 INDUSTRY PRACTICUM (5).** AAB/STU. 5. This course will demand the application of acquired skill title resolution of product design based issues within an industry collaboration studio over the period of one semester.

**INDD 7980 NON-THESIS DESIGN (3).** STU. 3. Synthesizing studies in research, analysis and application based on interdisciplinary concept. Emphasis on the relation of products and systems to those who use them.

**INDD 7990 DESIGN THESIS (1-5).** AAB/RES. Credit to be arranged. Course may be repeated with a change in topic.

### GRAPHIC DESIGN (GDES)

Prof. Clark Lundell - 844-2364

Prof. John Morgan - 844-2364

**GDES 2210 GRAPHIC PROCESSES (4).** LEC. 1, STU. 6. Pr., ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Design and production processes, preparation of design for printing, paper, copyright, electronic techniques, and related subjects.

**Industrial and Systems Engineering (INSY)**

Dr. Alice Smith - 844-1400

**GDES 2220 TYPOGRAPHICS I (4).** LEC. 1, STU. 6. Pr., ARTS 1120 and ARTS 1210 and ARTS 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Historical development and practical applications of typography for design, layout, and other contemporary formats.

**GDES 2230 INTRODUCTION TO GRAPHIC DESIGN (4).** STU. 8. Pr., GDES 2210 and GDES 2220. Design, layout, and image-making procedures for creative problem-solving in graphic design, with emphasis on presentation, creativity, and visualization.

**GDES 3200 INTRO TO GRAPHIC DESIGN (4).** LEC. Pr., GDES 2210 and GDES 2220 and ARTS 1710 and ARTS 1720 and ARTS 1730. Design and layout, and image making procedures for problem solving in graphic design, emphasis on presentation, creativity, and visualization. Departmental approval. Portfolio review required for admission.

**GDES 3210 PHOTO DESIGN (4).** AAB/STU. 8. Pr., GDES 2210 and GDES 2220. Technical aspects of equipment, materials and processing combined with electronic image manipulation techniques. Emphasis on aesthetics, composition and current technologies. 6 hours of ART History.

**GDES 3220 PHOTO COMMUNICATIONS (4).** STU. 8. Pr., ARTS 2220 or GDES 2210 and ARTS 2220 or GDES 2220 and ARTS 3200 or GDES 3200 or GDES 2230 and ARTS 3210 or GDES 3210. Photography as applied communication such as advertising, editorial photography, and annual report photography. Emphasis on advanced technological and studio techniques.

**GDES 3240 INTERACTIVE MEDIA (4).** STU. 8. Pr., ARTS 3200 or GDES 3200 or GDES 2230. Exploration of the technical and conceptual aspects of Web site design and motion graphics through a series of problem solving processes. Emphasis on new technology in relation to advertising design, graphic design, and imaging. 6 hours of art history or departmental approval.

**GDES 3250 TYPOGRAPHICS II (4).** STU. 8. Pr., (ARTS 2210 or GDES 2210) and (ARTS 2220 or GDES 2220) and (ARTS 3200 or GDES 3200 or GDES 2230). Experimental application of typography for design and layout, exploring contemporary techniques. Historical understanding expected. Emphasis on presentation and visualization of concepts.

**GDES 3710 GRAPHIC DESIGN HISTORY (4).** LEC. 4. Pr., GDES 3200 or GDES 2230. History of graphic design, with emphasis on social and cultural contexts, symbolic application, formal characteristics, and significant movements.

**GDES 3920 GRAPHIC DESIGN INTERNSHIP (4).** INT. 4. Pr., ARTS 3200 or GDES 3200 or GDES 2230. A fifteen-week period working full time as a staff member with an approved internship sponsor under the direction of a supervising art director.

**GDES 4240 GRAPHIC DESIGN I (4).** STU. 8. Pr., (ARTS 2710 or GDES 3710) and (ARTS 3200 or GDES 3200 or GDES 2230). Application of communicative procedures and skills necessary to convey messages by means of graphic presentation: problem solving in corporate identity, advertising design, self promotion, etc. Development of student's individual style. Courses in this sequence may not be taken concurrently.

**GDES 4250 GRAPHIC DESIGN II (4).** STU. 8. Development of individual style in communication via graphic presentation, with emphasis on problem-solving in publication design, self-promotion, large-format design, and layout.

**GDES 4640 IMAGE I (4).** STU. 8. Pr., ARTS 3200 or GDES 3200 or GDES 2230. Application of illustration techniques and concepts to various graphic formats. Development of personal skills and individual style. Courses in this sequence may not be taken concurrently. 6 hours of art history courses.

**GDES 4650 IMAGE II (4).** STU. 8. Pr., ARTS 3200 or GDES 3200 or GDES 2230. Exploration of two dimensional and three dimensional imaging techniques and concepts. Development of personal skills and an individual style. Courses in this sequence may not be taken concurrently.

**GDES 4900 DIRECTED STUDIES FOR GRAPHIC DESIGN (2-3).** AAB. Pr., GDES 2210 and GDES 2220. Directed Studies in Graphic Design focuses on individualized study in Graphic Design. Student must have a 3.0 average in GDES course curriculum and departmental approval. Topics may include Graphic Design, Imaging, Web Design. Course may be repeated for a maximum of 9 credit hours.

**GDES 4970 SPECIAL TOPICS FOR GRAPHIC DESIGN (2-3).** LEC. 4-6. Pr., (GDES 3200 or ARTS 3200 or GDES 2230) and (GDES 2710 or GDES 3710 or ARTS 2710). Special Topics in Graphic Design focuses on topics in graphic design that are additional to the regular curriculum. Specific course topics are developed by the instructor. Student must have a 3.0 average in GDES course curriculum Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**GDES 4990 SENIOR PROJECT FOR GRAPHIC DES (4).** STU. 8. Pr., (ARTS 4240 or GDES 4240) and (ARTS 4640 or GDES 4640 and ARTS 4650 or GDES 4650). A directed terminal studio project with choice of subject and medium. Project will be exhibited and a faculty committee will award a letter grade. Professional quality color slides of the project work must be presented to the department before student is cleared for graduation. Must be taken in student's final semester.

**INSY 3020 OCCUPATIONAL SAFETY ERGONOMICS (3).** LEC. 3. Basic principles of occupational safety engineering and ergonomics in the evaluation and design of occupation work areas and processes that include human operators.

**INSY 3021 METHODS ENGINEERING, WORK MEASUREMENT AND ERGONOMICS LABORATORY (3).** LEC. 2, LAB. 3. Pr., P/C, INSY 3020. Develops the student's ability to design workplaces and methods while providing an understanding of the work measurements process. Enables students to generate much of the basic methods data utilized in most industrial engineering projects.

**INSY 3030 CAD FOR ENGINEERS WITH INDUSTRIAL APPLICATIONS (1).** LAB. 3. Pr., COMP 1200 or COMP 1210 or COMP 3000 or ENGR 1110. Use of computer technology to aid engineering design in industrial applications, e.g. represent and modify mechanical parts, diagrams, schematics, tools, equipment, office and plant layouts, etc.

**INSY 3400 STOCHASTIC OPERATIONS RESEARCH (3).** LEC. 3. Pr., ENGR 1110 and MATH 2660 and STAT 3600. Modeling and analysis of decision-making and operations subject to randomness including decision analysis, stochastic dynamic programming, Markov chains, and queuing theory.

**INSY 3410 DETERMINISTIC OPERATIONS RESEARCH (3).** LEC. 2, LAB. 3. Pr., ENGR 1110 and MATH 2660. Formulation, solution, interpretation, and implementation of mathematical models in operations research including linear programming, integer programming and network flows.

**INSY 3420 SIMULATION (3).** LEC. 2, LAB. 3. Pr., INSY 3400 and COMP 3010 and STAT 3610. Simulation procedures for solving complex systems analysis problems. Emphasis on random processes, model building and construction of computer simulation models.

**INSY 3600 ENGINEERING ECONOMY (3).** LEC. 3. Pr., ENGR 1110. Principles required in engineering economic studies.

**INSY 3700 OPERATIONS PLANNING AND CONTROL (3).** LEC. 2, LAB. 3. Pr., INSY 3400 and INSY 3410 and STAT 3610. Analytical methods for operations planning and control, including forecasting systems, production planning, inventory control systems, scheduling systems, and project management.

**INSY 3800 MANUFACTURING PROCESSES (3).** LEC. 2, LAB. 3. Pr., MATL 2100. Materials, measurement and quality assurance. Manufacturing processes (casting, forming, materials removal, joining). Processes and techniques related to manufacturing.

**INSY 4330 STATISTICAL QUALITY DESIGN AND CONTROL (3).** LEC. 3. Pr., STAT 3610. Statistical process control and methods for quality improvement. Acceptance sampling for attributes and for variables.

**INSY 4500 PROFESSIONAL PRACTICE (1).** LEC. Discussion and activities in current problems, the global context of, professional practice, professional opportunities and lifelong learning in Industrial and Systems Engineering. Senior standing in INSY.

**INSY 4700 MANUFACTURING SYSTEMS (3).** LEC. 3. Pr., INSY 3420 and INSY 3600 and INSY 3700. Design and operation of manufacturing systems. Models to design, analyze, operate, and control manufacturing systems. Facility layout and location models.

**INSY 4800 SENIOR DESIGN (3).** LAB. 9. Pr., INSY 3021 and INSY 4700. Capstone course in which undergraduate course-work principles are brought to bear upon a design problem in a cooperating industry or institution.

**INSY 4960 SPECIAL PROBLEMS (1-5).** IND. Individual student endeavor under faculty supervision involving special problems in Industrial and Systems Engineering. Interested student must submit written proposal to department head. Course may be repeated for a maximum of 5 credit hours. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**INSY 4970 INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-10).** LEC. Special topics in Industrial and Systems Engineering. Specific prerequisites will be determined and announced for each offering. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**INSY 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Individual student endeavor consisting of direct research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**INSY 5010 SAFETY ENGINEERING I (3).** LEC. 3. Pr., INSY 3020. Departmental approval. Occupational safety engineering and management with emphasis on control of hazardous materials, fire prevention, safety considerations in production facility design, and maintenance, and operation of effective safety programs.

**INSY 5240 PRODUCTION AND INVENTORY CONTROL SYSTEMS (3).** LEC. 3. Pr., INSY 3700. Analysis and design of production and inventory control systems with emphasis on quantitative methods, algorithms, and information technology.

**INSY 5250 SCHEDULING AND PROJECT MANAGEMENT (3).** LEC. 3. Pr., INSY 3700. Sequencing and scheduling methods and models are presented, with special emphasis on scheduling and controlling projects.

**INSY 5330 DATA BASED DECISION MAKING USING SIX SIGMA (3).** LEC. 3. Pr., INSY 4330. Covers statistical tools needed for implementation of "Six Sigma",

## Industrial and Systems Engineering (INSY)

"Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both INSY 5330 and INSY 6330/6336. Departmental approval.

**INSY 5500 INFORMATION TECHNOLOGY FOR OPERATIONS (3).** LEC. 3. Pr., COMP 3010. Role and potential of using computer-integrated systems within manufacturing and service industries. Analysis of relevant data, synthesis of the flow of information in an operations environment, and development of databases to support the production process.

**INSY 5550 DECISION SUPPORT SYSTEMS FOR OPERATIONS (3).** LEC. 3. Pr., COMP 3010. Fundamentals for modeling, designing, and implementing decision support systems for the operation of manufacturing and service industries.

**INSY 5600 MANUFACTURING AND PRODUCTION ECONOMICS (3).** LEC. 3. Pr., INSY 3600. Continuation of INSY 3600. Emphasis on design economics and cost estimating techniques and applications to various manufacturing and service operations.

**INSY 5630 REAL OPTIONS AND DECISION ANALYSIS (3).** LEC. 3. Pr., INSY 3600 and STAT 3600. Analysis of engineering and business decisions under risk and contemporary risk management methods including statistical decision theory and real options. Credit will not be given for both INSY 5630 and INSY 6630/6636. INSY 3600 and STAT 3600 or equivalents.

**INSY 5800 LEAN PRODUCTION (3).** LEC. 3. Pr., MECH 2210. Coreq., INSY 3800. Manufacturing system design based on a strategy of linked cells providing a continuous flow of materials. Evaluation strategies and analysis tools are studied.

**INSY 5830 VEHICLE TECHNOLOGY AND TRENDS (3).** LEC. 3. Investigation of the advances in automotive technology and the impact of future technologies on the design and manufacture of the automobile. Credit will not be given for both INSY 5830 and INSY 6830.

**INSY 5840 CONTROL OF THE MANUFACTURING FLOOR AND PROCESSES (3).** LEC. 2, LAB. 3. Students work within multi-disciplinary teams to apply the principles of Computer Aided Manufacturing and the Toyota Production System (TPS) on the modern automated floor. Laboratory features CNC Controls, Robots, Programmable Logic Controllers (PLC) and Kanban system. DELMIA Catia, and MasterCAM. Credit will not be given for both INSY 5840 and INSY 6840.

**INSY 5850 ELECTRONICS MANUFACTURING SYSTEMS (3).** LEC. 3. Introduction to electronics packaging and electronics manufacturing technologies including current and future trends, design and quality, and manufacturing for high volume.

**INSY 5860 AUTOMOTIVE MANUFACTURING SYSTEMS (3).** LEC. 3. History of automotive manufacturing and the automotive manufacturing systems for a typical automotive assembly plant. Credit will not be given for both INSY 5860 and INSY 6860.

**INSY 6010/6016 SAFETY ENGINEERING I (3).** LEC. 3. Occupational safety engineering and management with emphasis on control of hazardous materials, fire prevention, safety considerations in production facility design and maintenance, and operation of effective safety programs. Departmental approval.

**INSY 6240/6246 PRODUCTION AND INVENTORY CONTROL SYSTEMS (3).** LEC. 3. Analysis and design of production and inventory control systems with emphasis on quantitative methods, algorithms, and information technology.

**INSY 6250/6256 SCHEDULING AND PROJECT MANAGEMENT (3).** LEC. 3. Sequencing and scheduling methods and models are presented, with special emphasis on scheduling and controlling projects.

**INSY 6330/6336 DATA BASED DECISION MAKING USING SIX SIGMA (3).** LEC. 3. Covers statistical tools needed for implementation of "Six Sigma", "Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both INSY 5330 and INSY 6330/6336. Departmental approval.

**INSY 6500/6506 INFORMATION TECHNOLOGY FOR OPERATIONS (3).** LEC. 3. Role and potential of using computer-integrated systems within manufacturing and service industries. Analysis of relevant data, synthesis of the flow of information in an operations environment, and development of databases to support the production process.

**INSY 6550/6556 DECISION SUPPORT SYSTEMS FOR OPERATIONS (3).** LEC. 3. Fundamentals for modeling, designing, and implementing decision support systems for the operation of manufacturing and service industries.

**INSY 6600/6606 MANUFACTURING AND PRODUCTION ECONOMICS (3).** LEC. 3. Continuation of INSY 3600. Emphasis on design economics and cost estimating techniques and applications to various manufacturing and service operations.

**INSY 6630/6636 REAL OPTIONS/DECISION ANALYSIS (3).** LEC. 3. Analysis of engineering and business decisions under risk and contemporary risk management methods including statistical decision theory and real options. Credit will not be given for both INSY 5630 and INSY 6630/6636. INSY 3600 and STAT 3600, or equivalents.

**INSY 6800/6806 LEAN PRODUCTION (3).** LEC. 3. Coreq., INSY 3800. Manufacturing system design based on a strategy of linked cells providing a continuous flow of materials. Evaluation strategies and analysis tools are studied.

**INSY 6830/6836 VEHICLE TECHNOLOGY AND TRENDS (3).** LEC. 3. Investigation of the advances in automotive technology and the impact of future

technologies on the design and manufacture of the automobile. Credit will not be given for both INSY 5830 and INSY 6830.

**INSY 6840/6846 CONTROL OF THE MANUFACTURING FLOOR AND PROCESSES (3).** LEC. 2, LAB. 3. Students work within multi-disciplinary teams to apply the principles of Computer Aided Manufacturing and the Toyota Production System (TPS) on the modern automated floor. Laboratory features CNC Controls, Robots, Programmable Logic Controllers (PLC) and Kanban system. DELMIA Catia and MasterCAM. Credit will not be given for both INSY 5840 and INSY 6840.

**INSY 6850/6856 ELECTRONICS MANUFACTURING SYSTEMS (3).** LEC. 3. Introduction to electronics packaging and electronics manufacturing technologies including current and future trends, design and quality, and manufacturing for high volume.

**INSY 6860/6866 AUTOMOTIVE MANUFACTURING SYSTEMS (3).** LEC. 3. History of automotive manufacturing and the automotive manufacturing systems for a typical automotive assemble plant. Credit will not be given for both 5860 and 6860.

**INSY 7020/7026 SAFETY ENGINEERING II (3).** LEC. 3. Pr., (INSY 6010 or INSY 6016). Systems safety analysis techniques including human error and reliability, fault trees, and cost benefit analysis.

**INSY 7030/7036 MANUFACTURING SYSTEMS DESIGN AND ANALYSIS (3).** LEC. 3. Modeling and analysis of manufacturing systems. Emphasis on the development of analytical models of serial production lines, flexible manufacturing systems, cellular systems, and facility layout and location problems. Departmental approval.

**INSY 7050/7056 INDUSTRIAL HYGIENE AND ENVIRONMENTAL HAZARDS (3).** LEC. 3. Introduction to the basic concepts of industrial hygiene with emphasis on the industrial hygiene/safety interface and on the evaluation and control of noise and vibration stress.

**INSY 7060/7066 ERGONOMICS I (3).** LEC. 3. Overview of the human body systems and evaluation of the physiological response of the human body to occupational activities with emphasis on task design.

**INSY 7070/7076 ERGONOMICS II (3).** LEC. 3. Pr., INSY 7060 or INSY 7066. Use of biomechanics in the evaluation and design of work activities. Emphasis is placed on biomechanical modeling, manual materials handling, tool design, and repetitive motion trauma.

**INSY 7080/7086 HUMAN FACTORS ENGINEERING (3).** LEC. 3. Examination of human factors, ergonomics and safety research methodologies. Emphasis is on human information input, output and control processes with the objective of optimizing integration of the human into simple and complex systems.

**INSY 7081 HUMAN FACTORS LABORATORY (1).** LAB. 3. Coreq., INSY 7080. Laboratory experience in testing human factors principles and concepts covered in INSY 7080. Experience in proper writing of laboratory reports.

**INSY 7090 OCCUPATIONAL SAFETY/ERGONOMICS AND INJURY PREVENTION FORUM (2).** LEC. 2. Study of recent issues in occupational safety and ergonomics and/or occupational injury prevention. Activities include lectures, seminars, laboratory demonstrations, readings, plant and facility visits, and research exposure.

**INSY 7100/7106 ADAPTIVE OPTIMIZATION (3).** LEC. 3. Adaptive search methods inspired by nature for continuous and combinatorial optimization. Methods include simulated annealing, genetic algorithms, evolutionary strategies, tabu search and ant colony systems. Departmental approval.

**INSY 7200/7206 ENGINEERING APPLICATIONS OF FUZZY SYSTEMS AND NEURAL NETWORKS (3).** LEC. 3. Introduction to fuzzy systems and neural networks with emphasis on their uses in engineering applications in clustering, modeling, optimization, control, forecasting, and classification. Departmental approval.

**INSY 7230/7236 ADVANCED LAYOUT AND LOCATION (3).** LEC. 3. Facility layout algorithms and the facility design process. Facility location models and their relationship to strategic organization goals.

**INSY 7240/7246 PRODUCTION AND INVENTORY CONTROL THEORY (3).** LEC. 3. Theoretical foundations for the analysis and design of production and inventory control systems with emphasis on quantitative methods and current areas of research.

**INSY 7300/7306 ADVANCED ENGINEERING STATISTICS I (3).** LEC. 3. Advanced concepts of experimental design including blocked designs, analysis of variance regression approach, and fractional factorials in base-2 designs. Emphasis throughout is on developing and improving industrial products and processes. Credit will not be given for both INSY 7300 and STAT 7300.

**INSY 7310/7316 ADVANCED ENGINEERING STATISTICS II (3).** LEC. 3. Pr., STAT 7300 or INSY 7300. Fractional factorial experimentation applied for the purpose of process and quality improvement and optimization, introduction to analysis of covariance, multiple regression analysis, and response surface analysis. Credit will not be given for both INSY 7310 and STAT 7310.

**INSY 7330/7336 OFF-LINE AND ON-LINE QUALITY CONTROL (3).** LEC. 3. Pr., STAT 7010 or STAT 7300 or INSY 7300. Taguchi's quality loss functions. Taguchi's orthogonal arrays and their relationships to fractional factorial designs. Taguchi's parameter and tolerance designs, on-line process control concepts and methods.

## Kinesiology (KINE)

Process capability. CUSUM charts and other process control charts. Departmental approval.

**INSY 7380/7386 RELIABILITY ENGINEERING (3).** LEC. 3. Pr., STAT 7600 or STAT 7300 or INSY 7300. Reliability, maintenance, replacement with emphasis on failure-rate estimation and life testing. Hazard functions, parameter estimation and reliability testing including exponential and Weibull distributions. Markov models and repairable systems. Credit is not given for both INSY 7380 and STAT 7780. Departmental permission.

**INSY 7400/7406 SIMULATION MODELING AND ANALYSIS (3).** LEC. 3. Introduction to discrete event modeling and simulation. Fundamental concepts of Monte Carlo and discrete event simulation and the application of those concepts using commercial simulation software.

**INSY 7420/7426 LINEAR PROGRAMMING AND NETWORK FLOWS (3).** LEC. 3. Linear programming and network flows emphasizing algorithms and theory.

**INSY 7430/7436 INTEGER AND NONLINEAR PROGRAMMING (3).** LEC. 3. Pr., INSY 7420 or INSY 7426. Integer and non linear programming, emphasizing algorithms and theory. Departmental approval.

**INSY 7440/7446 DYNAMIC PROGRAMMING (3).** LEC. 3. Aspects of sequential decision making with emphasis on formulation and solution using the dynamic programming algorithm. Approximation methods for problems involving large state spaces. Solution techniques for problems under uncertainty. Departmental approval.

**INSY 7470/7476 SEARCH METHODS FOR OPTIMIZATION (3).** LEC. 3. Pr., INSY 3410. Single and multivariate search techniques and strategies that are used in finding the optimum of discrete and continuous functions.

**INSY 7500/7506 ADVANCED SIMULATION (3).** LEC. 3. Pr., INSY 7400 or INSY 7406. Coverage of advanced simulation and simulation language design concepts. Includes advanced input/output analysis, modeling concepts, and language design/implementation concepts.

**INSY 7550/7556 STOCHASTIC OPERATIONS RESEARCH (3).** LEC. 3. Pr., STAT 3600 and INSY 3420 and MATH 2660. Stochastic operations research models with emphasis on model formation, solution and interpretation of results. Emphasis on stochastic processes, queuing theory and their applications.

**INSY 7600/7606 ADVANCED ECONOMIC DECISION ANALYSIS (3).** LEC. 3. Theory and practice of decision making under uncertainty. Stochastic capital budgeting models: Decision trees, the value of information: Bayesian approaches, including conjugate and predictive distributions: Utility theory foundations, risk preference, multi-attribute utility: Financial engineering, real options. Departmental approval.

**INSY 7940 INDUSTRIAL AND SYSTEMS ENGINEERING PROBLEMS (1-5).** IND. Individual student endeavor under staff supervision involving special problems of an advanced undergraduate or graduate nature in Industrial and Systems Engineering. Interested student must submit written proposal to department head. Course may be repeated for a maximum of 5 credit hours. Departmental approval.

**INSY 7950/7956 SEMINAR (1).** LEC. 1. SU. Presentation and discussion of ISE research by graduate students, faculty and guests. Must be taken at least one term and cannot be used in the plan of study to apply towards the minimum number of hours for a degree.

**INSY 7970/7976 INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5).** LEC. 1, LAB. 1. Special topics of a graduate nature pertinent to Industrial and Systems Engineering. Specific prerequisites will be determined and announced for each offering. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**INSY 7980/7986 MASTER'S IN INDUSTRIAL AND SYSTEMS ENGINEERING PROJECT (1-5).** IND. SU. Non-thesis master's project. Course may be repeated for a maximum of 5 credit hours.

**INSY 7990 RESEARCH AND THESIS (1-10).** MST. Departmental approval. Course may be repeated with change in topics.

**INSY 8010 ADVANCED SAFETY ENGINEERING (3).** LEC. 3. Pr., INSY 7020. Topics of current interest in occupational safety research. Occupational safety research methodology and research priorities.

**INSY 8060/8066 ADVANCED ERGONOMICS (3).** LEC. 3. Pr., INSY 7060. Topics of current interest in occupational ergonomics and human factors research. Occupational ergonomics and human factors research methodology and research priorities.

**INSY 8250 SCHEDULING THEORY (3).** LEC. 3. Pr., INSY 6250 and INSY 7420. The theory for various scheduling methods and models is presented. Emphasis is on current research in the scheduling area.

**INSY 8420/8426 TOPICS IN OPTIMIZATION (3).** LEC. 3. Pr., INSY 7420. Basic concepts and theory of optimization, including saddle point conditions for differentiable and non-differentiable programs, duality, approximation, decomposition and partitioning, illustrated by application to specific algorithms.

**INSY 8970 INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5).** LEC. Special topics of an advanced graduate nature pertinent to industrial and systems engineering. Specific prerequisites will be determined and announced

for each offering. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**INSY 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change of topics. Departmental approval. Course may be repeated with change in topics.

## Integrated Textile and Apparel Science (ITAS)

Dr. Carol Warfield - 844-4084

**ITAS 8970 ADVANCED TOPICS IN INTEGRATED TEXTILE AND APPAREL QUALITY CONTROL (3).** LEC. 3. Quality related topics integrated for textile and apparel operations. Spring. Departmental approval.

## Kinesiology (KINE)

Dr. Mary Rudisill - 844-1458

**KINE 1100/1103/1104 WELLNESS (2).** LEC. 1, LAB. 2. Basic concepts and principles of wellness with laboratory experiences for the self-appraisal of health-related physical fitness.

**KINE 2250 MOTOR DEVELOPMENT DURING THE SCHOOL YEARS (2).** LEC. 2. Practical strategies and applications for the enhancement of motor development for school-aged children. Priority given to students for whom the course is required and Kinesiology majors.

**KINE 2251 LABORATORY IN MOTOR DEVELOPMENT DURING THE SCHOOL YEARS (1).** LAB. 2. SU. Coreq., KINE 2250 Laboratory experiences to enhance motor development in school-aged children. Priority given to students for whom the course is required and Kinesiology majors.

**KINE 2800 INTRODUCTION TO KINESIOLOGY (3).** LEC. 3. People, history and programs that have led to the current status of physical education, exercise science and health promotion.

**KINE 3010 INSTRUCTION AND TECHNOLOGY IN KINESIOLOGY (2).** LEC. 1, LAB. 2. Communication skills, instructional strategies and technological competencies related to conveying information in the health and human performance disciplines.

**KINE 3020/3023 SCIENTIFIC FOUNDATIONS OF KINESIOLOGY (4).** LEC. 4. Overview of the biomechanical, physiological and psychological foundations of human movement. Core biology.

**KINE 3200 SKILLS AND CONCEPTS OF RHYTHMIC ACTIVITIES (3).** LEC. 2, LAB. 2. Skillful performance in gymnastics and other rhythmic activities and an understanding of the basic movement concepts in those activities.

**KINE 3210 SKILLS AND CONCEPTS OF SPORT (3).** LEC. 2, LAB. 2. Skillful performance in games and sports and an understanding of the tactics in those activities. Admission to Teacher Education.

**KINE 3250 SKILL ACQUISITION FOR SCHOOL-AGED CHILDREN (3).** LEC. 2, LAB. 2. Pr., (HLHP 2250 or KINE 2250) and (HLHP 3020 or KINE 3020). Principles of skill acquisition applied to instructional settings in teaching and coaching.

**KINE 3260 PHYSICAL EDUCATION FOR INDIVIDUALS WITH DISABILITIES (3).** LEC. 2, LAB. 2. Pr., (KINE 3020 or HLHP 3020). Program needs of individuals with disabilities in physical education and physical activity settings.

**KINE 3280 ASSESSMENT IN PHYSICAL EDUCATION (3).** LEC. 3. Development of appropriate measurement tools to assess student learning. Admission to Teacher Education.

**KINE 3300 INSTRUCTIONAL STRATEGIES IN PHYSICAL EDUCATION (3).** LEC. 2, LAB. 2. Pr., HLHP 3010 or KINE 3010. Admission to Teacher Education. Instructional and class management strategies appropriate to teach quality elementary and secondary physical education Admission to Teacher Education.

**KINE 3400 HEALTH PROMOTION IN THE WORKPLACE (3).** LEC. 3. Planning, implementation, evaluation and marketing of health promotion programs.

**KINE 3620 BIOMECHANICAL ANALYSIS OF HUMAN MOVEMENT (4).** LEC. 3, LAB. 2. Pr., (KINE 3020 or HLHP 3020) and MATH 1610. Understanding of anatomical, neuromuscular, and biomechanical principles of human movement. Or departmental approval.

**KINE 3650 MOTOR LEARNING AND PERFORMANCE (4).** LEC. 3, LAB. 2. Pr., (KINE 3020 or HLHP 3020). Understanding of the basic psychological processes in learning and control of skillful human movement.

**KINE 3680 PHYSIOLOGY OF EXERCISE (4).** LEC. 3, LAB. 2. Pr., (KINE 3020 or HLHP 3020). Energetics of exercise and physiological responses and adaptations of various organ systems (muscular, circulatory, respiratory, etc.) to acute and chronic exercise in different environments.

**KINE 3820 PRINCIPLES OF SPORT COACHING (3).** LEC. 3. Pr., (KINE 3020 or HLHP 3020). Basic principles of sport pedagogy and the conduct of sport training programs.

**KINE 4200 PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (4).** LEC. 2, LAB. 4. Pr., HLHP 3300 Admission to Teacher Education. Understanding of the skill theme approach based on skill themes, movement concepts and levels of skill



## Kinesiology (KINE)

proficiency. Credit will not be given for both KINE 4200 and KINE 4360. Admission to Teacher Education.

**KINE 4300 PHYSICAL EDUCATION IN SECONDARY SCHOOLS (4).** LEC. 2, LAB. 4. Pr., (KINE 3300 or HLHP 3300) Admission to Teacher Education. Constructing and implementing appropriate lifetime sports and fitness programs for middle and secondary school students. Admission to Teacher Education.

**KINE 4350 TEACHING FOR LIFETIME PHYSICAL ACTIVITY (3).** LEC. 2, LAB. 2. Pr., (HLHP 3020 or KINE 3020). Admission to Teacher Education. Coreq., KINE 3300. Skills and knowledge to conduct comprehensive fitness education programs in schools. Admission to Teacher Education.

**KINE 4360 HEALTH EDUCATION AND PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (3).** LEC. 2, LAB. 2. Pr., Admission to Teacher Education. Critical topics in health education and physical education for prospective elementary education teachers. Credit will not be given for both KINE 4360 and KINE 4200. Admission to Teacher Education.

**KINE 4450 PHYSICAL ACTIVITY AND PUBLIC HEALTH (3).** LEC. 3. Pr., (HLHP 3020 or KINE 3020) Basic principles of epidemiology; health benefits of physical activity; strategies to promote physical activity at the individual and community levels.

**KINE 4610 MOTOR DEVELOPMENT ACROSS THE LIFE SPAN (3).** LEC. 3. Pr., (HLHP 3020 or KINE 3020). Understanding principles related to motor development across the life span.

**KINE 4620 EXERCISE AND SPORT PSYCHOLOGY (3).** LEC. 3. Pr., (HLHP 3020 or KINE 3020). Role of psychological factors in sport, exercise and physical activity.

**KINE 4720 MEASUREMENT AND QUANTITATIVE ANALYSIS IN EXERCISE SCIENCE (3).** LEC. 3. Pr., (KINE 3020 or HLHP 3020) and STAT 2510. Concepts and statistics related to assessing human performance. Departmental approval.

**KINE 4760 INTRODUCTION TO EXERCISE SCIENCE RESEARCH (3).** LEC. 3. Pr., (HLHP 3020 or KINE 3020) and (HLHP 3620 or KINE 3620) or (HLHP 3650 or KINE 3650) or (HLHP 3680 or KINE 3680). Research literature, experimental design and research interpretation in exercise science.

**KINE 4780 EXERCISE SCIENCE RESEARCH (3).** LEC. 3. SU. Pr., (HLHP 4760 or KINE 4760). Development of a research proposal including the introduction, review of literature, methods, experimental design and statistics.

**KINE 4900 DIRECTED STUDIES (1-6).** IND. SU. In-depth study of specific topics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**KINE 4910 PRACTICUM (1-6).** AAB/PRA. SU. Application of basic concepts to specific work environment. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**KINE 4920 INTERNSHIP (1-12).** AAB/IND. SU. Supervised work experience in schools, fitness or rehabilitation settings. Two hours of work experience per week for each hour course credit. Course may be repeated for a maximum of 12 credit hours.

**KINE 4970 SPECIAL TOPICS (1-3).** AAB. Advanced presentation of critical issues in physical education, health promotion or exercise science. Course may be repeated with change in topic.

**KINE 4997 HONORS THESIS (1-3).** LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**KINE 5200 RESEARCH PROJECT IN PHYSICAL EDUCATION (3).** LEC. 3. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Focus on action research in teaching and learning in physical education in schools.

**KINE 5250 INSTRUCTIONAL SUPERVISION FOR PHYSICAL EDUCATION (2).** LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Development of systematic observation systems for providing feedback to teachers and strategies for monitoring progress.

**KINE 5300 ADVOCACY PHYSICAL EDUCATION (2).** LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Strategies for development of advocacy programs in physical education.

**KINE 5400 EXERCISE PRESCRIPTION FOR NORMAL AND SPECIAL POPULATIONS (3).** LEC. 3. Pr., (HLHP 3680 or KINE 3680). Principles of exercise prescription for normal and special populations with emphasis on specific exercise strategies in elderly, obese, hypertensive and hyperlipidemic populations. CPR certification.

**KINE 5500 EXERCISE TECHNOLOGY I: PRINCIPLES OF EXERCISE TESTING AND INTERPRETATION (4).** LEC. 2, LAB. 4. Pr., KINE 3020 or HLHP 3020. Concept and skill development in physiologic testing, test selection, and interpretation in normal and special populations. CPR certification must be obtained prior to or during course. HLHP 3680 or KINE 3680 must be taken prior to this course or KINE 3680 must be taken with course.

**KINE 5550 EXERCISE TECHNOLOGY II: APPLIED EXERCISE TESTING AND INTERPRETATION (4).** LEC. 1, LAB. 6. Pr., (HLHP 5500 or KINE 5500). Practical experience in cardiovascular and musculoskeletal exercise evaluation and prescription; interpretation of exercise test results for exercise prescription and health risk stratification. CPR certification.

**KINE 5600 PHYSIOLOGICAL BASIS OF TRAINING AND CONDITIONING (3).** LEC. 2, LAB. 2. Pr., (HLHP 3680 or KINE 3680). Physiological adaptations to training and conditioning for optimizing sport performance.

**KINE 5820 SPORT MANAGEMENT (3).** LEC. 3. This course is designed to give students critical skills in understanding and analyzing a number of social issues as they relate to sport.

**KINE 5920 INTERNSHIP (1-12).** INT. SU. Supervised work experiences in schools, fitness or rehabilitation settings. Two hours of work experience per week for each hour course credit. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**KINE 6200 RESEARCH PROJECT IN PHYSICAL EDUCATION (3).** LEC. 3. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Focus on action research in teaching and learning in physical education in schools.

**KINE 6250 INSTRUCTIONAL SUPERVISION FOR PHYSICAL EDUCATION (2).** LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Development of systematic observation systems for providing feedback to teachers and strategies for monitoring progress.

**KINE 6300 ADVOCACY IN PHYSICAL EDUCATION (2).** LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Strategies for development of advocacy programs in physical education.

**KINE 6400/6406 EXERCISE PRESCRIPTION FOR NORMAL AND SPECIAL POPULATIONS (3).** LEC. 3. Pr., (HLHP 3680 or KINE 3680). Principles of exercise prescription for normal and special populations with emphasis on specific exercise strategies in elderly, obese, hypertensive and hyperlipidemic populations.

**KINE 6500 EXERCISE TECHNOLOGY I: PRINCIPLES OF EXERCISE TESTING AND INTERPRETATION (4).** LEC. 2, LAB. 4. Pr., (HLHP 3680 or KINE 3680). Concept and skill development in physiologic testing, test selection, and interpretations in normal and special populations. CPR certification must be obtained prior to or during course. HLHP 3680 or KINE must be taken prior to course or KINE 3680 must be taken with course.

**KINE 6550 EXERCISE TECHNOLOGY II: APPLIED EXERCISE TESTING AND INTERPRETATION (4).** LEC. 1, LAB. 6. Pr., HLHP 5500 or (KINE 6500 or HLHP 6500). Practical experience in cardiovascular and musculoskeletal exercise evaluation and prescription; interpretation of exercise test results for exercise prescription and health risk stratification. CPR certification must be obtained prior to this course.

**KINE 6600 PHYSIOLOGICAL BASIS OF TRAINING AND CONDITIONING (3).** LEC. 2, LAB. 2. Pr., (HLHP 3680 or KINE 3680). Physiological adaptations to training and conditioning for sport performance.

**KINE 6820 SPORT MANAGEMENT (3).** LEC. 3. This course is designed to give students critical skills in understanding and analyzing a number of social issues as they relate to sport.

**KINE 6920 INTERNSHIP (1-12).** IND. SU. Supervised work experiences in schools, fitness or rehabilitation settings. Departmental approval.

**KINE 7010 RESEARCH METHODS IN PHYSICAL ACTIVITY (3).** LEC. 3. Study of research methods and analysis of current research in physical education, health promotion, and exercise science.

**KINE 7200 CURRICULUM AND TEACHING IN PHYSICAL EDUCATION (3).** LEC. 3. Issues in developing and critiquing curricula in physical education.

**KINE 7250 EVALUATION OF PROGRAMS AND ASSESSMENT OF STUDENTS IN PHYSICAL EDUCATION (3).** LEC. 3. Development of tools for assessment of student learning and evaluation of physical education programs.

**KINE 7260 INDIVIDUALS WITH DISABILITIES IN PHYSICAL EDUCATION (3).** LEC. 3. Developing inclusive physical activity programs for children and adolescents with disabilities in physical education.

**KINE 7280 NATURALISTIC INQUIRY IN PHYSICAL ACTIVITY SETTINGS (3).** LEC. 3. Pr., (HLHP 7010 or KINE 7010). Exploration of naturalistic inquiry in physical activity and educational settings.

**KINE 7300 CONTENT AND PEDAGOGY IN PHYSICAL EDUCATION (3).** LEC. 3. Instructional strategies and content for elementary and secondary physical education.

**KINE 7350 ORGANIZATION AND ANALYSIS OF INSTRUCTION IN PHYSICAL EDUCATION (3).** LEC. 3. Focus on the teaching-learning process in physical education.

**KINE 7380 INTEGRATING CLASSROOM CONCEPTS (3).** LEC. 3. Relationship of developmental foundations of young children and programming of physical activities.

**KINE 7570 EXERCISE ELECTROCARDIOGRAPHY (3).** LEC. 3. Pr., (HLHP 3680 or KINE 3680). Electrocardiography from a exercise scientist's perspective; recognition of normal and abnormal electrocardiographic patterns at rest and during exercise.

**KINE 7620 PRINCIPLES OF BIOMECHANICS IN HUMAN MOVEMENT (3).** LEC. 3. Pr., (HLHP 3620 or KINE 3620). Biomechanical principles and laws with applications to human movement in sport, exercise and daily activities. Departmental approval.

## Kinesiology (KINE)

**KINE 7650 ADVANCED MOTOR LEARNING AND PERFORMANCE (3).** LEC. 3. Pr., (HLHP 3650 or KINE 3650). Theories, experimental studies, and current issues in the acquisition, performance, and retention of motor skills. Departmental approval.

**KINE 7660 BIOMECHANICS OF SPORT INJURY AND REHABILITATION (3).** LEC. 3. Pr., (HLHP 7620 or KINE 7620). Biomechanical properties of the human body as related to injuries and rehabilitation in sport and daily activities.

**KINE 7670 LAB TECHNIQUES IN BIOMECHANICS (3).** LEC. 1, LAB. 2. Pr., (HLHP 7620 or KINE 7620). Study of equipment and standing practices utilized by a biomechanist in measuring and analyzing motion.

**KINE 7680 ADVANCED PHYSIOLOGY OF EXERCISE I (3).** LEC. 3. Pr., (HLHP 3680 or KINE 3680). Physiological responses to exercise and control of metabolism, the cardiovascular system, and the respiratory system during acute exercise and training. Departmental approval.

**KINE 7700 ADVANCED PHYSIOLOGY OF EXERCISE II (3).** LEC. 3. Pr., (HLHP 3680 or KINE 3680). Temperature regulation and endocrine response to exercise; physiological responses and adaptations to aerobic training, strength training, and environmental extremes; limiting factors and fatigue in exercise.

**KINE 7710 LAB TECH IN EXERCISE PHYSIO (3).** LEC. 1, LAB. 4. Pr., (HLHP 7680 or KINE 7680). Techniques for measuring and evaluating physical performance.

**KINE 7730 NEUROMOTOR CONTROL (3).** LEC. 3. Pr., (HLHP 3650 or KINE 3650). Structure and function of the central and peripheral systems underlying human motor control. Departmental approval.

**KINE 7740 ADVANCED MOTOR DEVELOPMENT (3).** LEC. 3. Pr., (HLHP 4610 or KINE 4610). Examination of theoretical and empirical issues in motor development across the life span. Departmental approval.

**KINE 7750 ADVANCED SPORT PSYCHOLOGY (3).** LEC. 3. Pr., (HLHP 4620 or KINE 4620). Examination of psychological factors that influence athletic performance. or equivalent, Departmental approval.

**KINE 7780 EXERCISE MOTIVATION AND ADHERENCE (3).** LEC. 3. Pr., (HLHP 4620 or KINE 4620). Theoretical foundations and recent research in exercise motivation and adherence. Or equivalent.

**KINE 7790 MOTOR BEHAVIOR OF INDIVIDUALS WITH DISABILITIES (3).** LEC. 3. Pr., (HLHP 7650 or KINE 7650). Examination of motor behavior characteristics of individuals with disabilities.

**KINE 7900 DIRECTED STUDIES (1-3).** IND. SU. In-depth study of specific topics. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**KINE 7910 PRACTICUM (1-3).** PRA. Application of concepts to specific work environment. Course may be repeated for a maximum of 6 credit hours. Departmental approval.

**KINE 7920 INTERNSHIP (1-10).** INT. SU. Supervised work experiences in schools, fitness or rehabilitation settings. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**KINE 7930 DIRECTED FIELD EXPERIENCES (1-10).** FLD. SU. Field studies away from campus. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**KINE 7950 SEMINAR (1-3).** SEM. SU. Course may be repeated for a maximum of 3 credit hours.

**KINE 7960 SPECIAL PROBLEMS (1-3).** IND. SU. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**KINE 7970 SPECIAL TOPICS (1-3).** LEC. Advanced presentation of critical issues in physical education, health promotion, or exercise science. Course may be repeated with change in topic.

**KINE 7990 RESEARCH AND THESIS (1-10).** IND. Course may be repeated with change of topic. Course may be repeated with change in topics.

**KINE 8710 SCIENTIFIC COMMUNICATION IN EXERCISE SCIENCE (3).** LEC. 3. Pr., (HLHP 7010 or KINE 7010). In-depth analysis of the major formats for scientific communication and the peer-review process in exercise science. Or equivalent.

**KINE 8750 THREE-DIMENSIONAL ANALYSIS OF HUMAN MOVEMENT (3).** LEC. 3. Pr., (HLHP 7620 or HLHP 7620). Three-dimensional nature of body segments in human movement, with emphasis on data processing and modeling techniques.

**KINE 8760 PHYSICAL ACTIVITY EPIDEMIOLOGY (3).** LEC. 3. Pr., (HLHP 7010 or KINE 7010) and (HLHP 7680 or KINE 7680). Development of analytic skills to evaluate and/or conduct population-based research related to physical activity and disease.

**KINE 8770 NEUROMUSCULAR ASPECTS OF EXERCISE AND TRAINING (3).** LEC. 3. Pr., (HLHP 7680 or KINE 7680) and (HLHP 7700 or KINE 7700). Examination of neuromuscular mechanisms that allow humans to perform work, including energy output, neural integration, energy metabolism and adaptations to training. Departmental approval.

**KINE 8780 BIOCHEMISTRY OF EXERCISE (3).** LEC. 3. Pr., (HLHP 7680 or KINE 7680) and (HLHP 7700 or KINE 7700). Regulation of the metabolic pathways of

energy metabolism with emphasis on the energetic response to acute exercise and exercise training. Departmental approval.

**KINE 8900 DIRECTED STUDIES (1-3).** IND. SU. In-depth study of specific topics. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**KINE 8910 PRACTICUM (1-3).** PRA. SU. Application of basic concepts to specific work environments. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**KINE 8920 INTERNSHIP (1-10).** INT. SU. Supervised work experiences in schools, fitness and rehabilitation settings. Course may be repeated for a maximum of 10 credits. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**KINE 8930 DIRECTED FIELD EXPERIENCES (1-10).** FLD. SU. Field studies away from campus. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**KINE 8950 SEMINAR (1-3).** SEM. SU. Course may be repeated for a maximum of 3 credit hours.

**KINE 8960 SPECIAL PROBLEMS (1-3).** IND. SU. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**KINE 8970 SPECIAL TOPICS (1-3).** LEC. Advanced presentation of critical issues in physical education, health promotion, or exercise science. Course be repeated with change in topic.

**KINE 8980 FIELD PROJECT (1-6).** FLD.

**KINE 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Field project away from campus. Course may be repeated for a maximum of 9 credit hours. Departmental approval. Course may be repeated with change in topics.

## PHYSICAL EDUCATION (PHED)

Dr. Mary Rudisill 844-4483

**PHED 1200 CARDIO RESPIRATORY: FITNESS (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning. Activities may include, but are not limited to running (jogging) swimming, cycling and aerobic dance. Course may be repeated with a change in topic.

**PHED 1210 CARDIO RESPIRATORY: AEROBIC DANCE (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in aerobic dance.

**PHED 1220 CARDIO RESPIRATORY: CIRCUIT TRAINING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in circuit training.

**PHED 1230 CARDIO RESPIRATORY: JOGGING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in jogging.

**PHED 1240 CARDIO RESPIRATORY: SWIM FOR FITNESS (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in swim for fitness.

**PHED 1250 CARDIO RESPIRATORY: WATER AEROBICS (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in water aerobics.

**PHED 1300 FITNESS AND CONDITIONING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness. Activities may include, but are not limited to calisthenics and weight training. Course may be repeated with a change in topic.

**PHED 1310 FITNESS: BODYBUILDING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in bodybuilding.

**PHED 1320 FITNESS: LIFETIME ACTIVITY (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in lifetime activity.

**PHED 1330 FITNESS: WEIGHT CONTROL (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in weight control.

**PHED 1340 FITNESS: WEIGHT TRAINING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in weight training.

**PHED 1350 FITNESS WEIGHT TRAINING WOMEN (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness for weight training for women.

**PHED 1360 FITNESS: WEIGHT TRAINING II (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in weight training II.

**PHED 1400 TEAM SPORTS (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific team sport. Team sports may include, but are not limited to, volleyball, basketball and softball. Course may be repeated with change in topic.

## Mathematics (MATH)

**PHED 1410 TEAM SPORTS: BASKETBALL (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific team sport.

**PHED 1420 TEAM SPORTS: FLAG FOOTBALL (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific team sport.

**PHED 1430 TEAM SPORTS: SOCCER (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific team sport.

**PHED 1440 TEAM SPORTS: SOFTBALL (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific team sport.

**PHED 1450 TEAM SPORTS: VOLLEYBALL (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific team sport.

**PHED 1500 INDIVIDUAL SPORTS (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport. Sports may include, but are not limited to tennis, golf and racquetball. Course may be repeated with a change in topic.

**PHED 1510 INDIVIDUAL SPORTS: BOWLING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

**PHED 1520 INDIVIDUAL SPORTS: GOLF (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

**PHED 1530 INDIVIDUAL SPORTS: GOLF II (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

**PHED 1540 INDIVIDUAL SPORTS: RACQUETBALL (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

**PHED 1550 INDIVIDUAL SPORTS: TENNIS (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

**PHED 1560 INDIVIDUAL SPORTS: TENNIS II (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

**PHED 1600 PERFORMANCE ACTIVITIES (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific performance activity. Activities may include, but are not limited to, dance and gymnastics. Course may be repeated with a change in topic.

**PHED 1610 PERFORM ACTIVITY - PILATES (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

**PHED 1620 PERFORMANCE ACTIVITY: KARATE (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

**PHED 1630 PERFORMANCE ACTIVITY: TAE KWON DO (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

**PHED 1640 PERFORMANCE ACTIVITY: YOGA (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

**PHED 1700 AQUATICS: OTHER (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills. Activities may include, but are not limited to, swimming skills instruction, lifeguard training, and scuba diving. When appropriate, successful completion of the course will lead to Red Cross certification or certification by other agencies. Course may be repeated for a maximum of 4 credit hours.

**PHED 1710 AQUATICS: BEGINNING KAYAKING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1720 AQUATICS: ADVANCED KAYAKING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1730 AQUATICS: KEELBOAT SAILING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1740 AQUATICS: LIFEGUARD TRAINING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1750 AQUATICS: BEGINNING SWIMMING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1760 AQUATICS: SCUBA (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1770 AQUATICS: WATER SKIING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1780 AQUATICS: ADVANCED WATER SKIING (2).** LEC. 1, LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

**PHED 1800 VARSITY MEN'S SPORTS: STRENGTH AND CONDITION (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topic.

**PHED 1810 VARSITY MEN'S SPORTS: FOOTBALL (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1820 VARSITY MENS SPORTS: BASKETBALL (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1830 VARSITY MEN'S SPORTS: TRACK (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1840 VARSITY MEN'S SPORTS: CROSS COUNTRY (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1850 VARSITY MEN'S SPORTS: SWIMMING AND DIVING (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1860 VARSITY MEN'S SPORTS: GOLF (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1870 VARSITY MEN'S SPORTS: TENNIS (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1880 VARSITY MEN'S SPORTS: BASEBALL (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1900 VARSITY WOMEN'S SPORTS: SOCCER (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1910 VARSITY WOMEN'S SPORTS: GYMNASTICS (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1920 VARSITY WOMEN'S SPORTS: BASKETBALL (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1930 VARSITY WOMEN'S SPORTS: TRACK (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1940 VARSITY WOMEN'S SPORTS: CROSS COUNTRY (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1950 VARSITY WOMEN'S SPORTS: SWIMMING AND DIVING (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1960 VARSITY WOMEN'S SPORTS: GOLF (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1970 VARSITY WOMEN'S SPORTS: TENNIS (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1980 VARSITY WOMENS SPORTS: SOFTBALL (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

**PHED 1990 VARSITY WOMEN'S SPORTS: VOLLEYBALL (1).** LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

## Mathematics (MATH)

Dr. Michel Smith - 844-4290

**MATH 1000/1003 COLLEGE ALGEBRA (3).** LEC. 3. Fundamental concepts of algebra, equations and inequalities, functions and graphs, polynomial and rational functions. Does not satisfy the core requirement in mathematics. Students who have previous credit in any higher-numbered math course may not receive credit. High school geometry and second year high school algebra.

**MATH 1100 FINITE MATH AND APPLICATIONS (3).** LEC. 3. Mathematics Core. Overview of finite mathematics and its applications. Graph theory, matrices, finite and conditional probability; descriptive and inferential statistics, voting methods, game theory.

**MATH 1120/1123 PRE-CALCULUS ALGEBRA (3).** LEC. 3. Pr., or MATH 1000. Mathematics Core. Algebra of functions including polynomial, rational, exponential and logarithmic functions. Systems of equations and inequalities, quadratic inequalities, the binomial theorem. Students who have previous credit in any higher-numbered math course may not receive may not receive credit. ADDITIONAL PREREQUISITES: High school geometry and second-year high school algebra.

**MATH 1130 PRE-CALCULUS TRIGONOMETRY (3).** LEC. 3. Pr., or MATH 1120. Mathematics Core. Preparatory course for the calculus sequence. Basic analytic and geometric properties of the trigonometric functions. Complex numbers, de Moivre'e theorem, polar coordinates. Students who have previous credit in any higher-numbered math course may not receive credit. High school geometry and second year high school algebra.

**MATH 1150 PRE-CALCULUS ALGEBRA AND TRIGONOMETRY (4).** LEC. 4. Mathematics Core. Algebraic functions, Exponential Logarithmic functions. Analytic and geometric properties of trigonometric functions. Students who have previous

## Mathematics (MATH)

credit in any higher-numbered math course may not receive credit. High school geometry and second year high school algebra. Students are further required to have an appropriate score on the mathematics placement exam or to have passed MATH 1000 with a C or better.

**MATH 1151 MATHEXEL PRECALCULUS WORKSHOP (2).** LEC. 2. SU. Coreq., MATH 1150 Workshop for MATH 1150. Two 2-hour sessions per week. Fall, Spring. Appropriate score on the mathematics placement exam or grade of C or better in MATH 1000.

**MATH 1610 CALCULUS I (4).** LEC. 4. Pr., or MATH 1130 or MATH 1150. Mathematics Core. Limits, the derivative of algebraic, trigonometric, exponential, logarithmic functions. Applications of the derivative, antiderivatives, the definite integral and applications to area problems, the fundamental theorem of calculus. Students may receive credit for only one of MATH 1610, MATH 1617, or MATH 1710. High school trigonometry and second year high school algebra.

**MATH 1611 MATHEXCEL CALCULUS WORKSHOP I (2).** LEC. SU. Coreq., MATH 1610. Workshop for Math 1610. Two 2-hour sessions per week. Or appropriate score on mathematics placement exam.

**MATH 1617 HONORS CALCULUS I (4).** LEC. 4. Pr., Honors College. MATH 1600. Mathematics Core. This course covers the same material as MATH 1610 but in a greater depth appropriate for honors students. Credit will not be given for both MATH 1617 and MATH 1680. Students may receive credit for only one of MATH 1610, MATH 1617, or MATH 1710. Membership in Honors College.

**MATH 1620 CALCULUS II (4).** LEC. 4. Pr., MATH 1610 or MATH 1617 or MATH 1710. Techniques of integration, applications of the integral, parametric equations, polar coordinates. Vectors, lines and planes in space. Infinite sequences and series. Students may receive credit for only one of MATH 1620, MATH 1627, or MATH 1720.

**MATH 1621 MATHEXCEL CALCULUS WORKSHOP II (2).** LEC. 2. SU. Coreq., MATH 1620. Workshop for MATH 1620. Two 2-hour sessions per week.

**MATH 1627 HONORS CALCULUS II (4).** LEC. 4. Pr., Honors College. MATH 1617. The same material as MATH 1620, but in greater depth appropriate for honors students. Students may receive credit for only one of MATH 1620, MATH 1627 or MATH 1720. Membership in the Honors College.

**MATH 1680 CALCULUS WITH BUSINESS APPLICATIONS I (4).** LEC. 3, LEC. 2. Pr., or MATH 1120 or MATH 1130 or MATH 1150. For students in the College of Business. Mathematics Core. Differentiation and integration of exponential and logarithmic functions and applications to business. Functions of several variables, partial derivatives, and multiple integrals. Or appropriate score on Math Placement Exam. Second year high school algebra.

**MATH 1681 MATHEXCEL BUSINESS CALCULUS WORKSHOP I (2).** LEC. 2. SU. Coreq., MATH 1680. Workshop for MATH 1680. Two 2-hour sessions per week. Or appropriate score on Math Placement Exam.

**MATH 1690 CALCULUS WITH BUSINESS APPS II (3).** LEC. 3. Pr., MATH 1680 or MATH 1610 or MATH 1617. Probability, random variables, probability distributions. Further topics in calculus: integration, functions of several variables, applications to probability. Applications to business and related areas. Credit will not be given to majors in Engineering or Math or Physics. Or with departmental approval.

**MATH 1691 MATHEXCEL BUSINESS CALCULUS WORKSHOP II (2).** LEC. 2. SU. Coreq., MATH 1690. Workshop for MATH 1690. Two 2-hour sessions per week. Appropriate score on the mathematics placement Exam.

**MATH 1710 CALCULUS FOR ENGINEERING AND SCIENCE I (4).** LEC. 4. Mathematics Core. Vector algebra, limits, derivatives and antiderivatives of real and vector valued functions and applications. The fundamental theorem of calculus. MATH 1710 and MATH 1720 include and re-order the material of MATH 1610 and MATH 1620, and MATH 1720 may be substituted for MATH 1620. MATH 1710 is not a sufficient prerequisite for MATH 1620. Credit will be given for only one of MATH 1610, MATH 1617, or MATH 1710. Credit will not be given for MATH 1680 and MATH 1710. Second year high school algebra and high school trigonometry.

**MATH 1720 CALCULUS FOR ENGINEERING AND SCIENCE II (4).** LEC. 4. Pr., MATH 1710. Exponents and logarithms, separation of variables, L'Hopital's rule. Techniques of integration, work and energy, line integrals, the gradient and directional derivatives, the curl. Credit will be given for only one of MATH 1620, MATH 1627, or MATH 1720.

**MATH 2630 CALCULUS III (4).** LEC. 4. Pr., MATH 1620 or MATH 1627 or MATH 1720. Multivariate calculus: vector-valued functions, partial derivatives, multiple integration, vector calculus. Credit will be given for only one of MATH 2630, MATH 2637, or MATH 2730.

**MATH 2637 HONORS CALCULUS III (4).** LEC. 4. Pr., Honors College. MATH 1627. The same material as MATH 2630, but in greater depth appropriate for honors students. Credit will be given for only one of MATH 2630, MATH 2637, or MATH 2730. Membership in Honors College.

**MATH 2650 LINEAR DIFFERENTIAL EQUATIONS (3).** LEC. 3. Pr., P/C, MATH 2630 or P/C, MATH 2637 or P/C, MATH 2730. First and second order linear differential equations including the solutions by infinite series, applications.

**MATH 2660 TOPICS IN LINEAR ALGEBRA (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Vector spaces, linear transformations, matrices, determinants,

linear equations, bases and dimension, eigenvalues, inner product spaces, diagonalization of symmetric matrices.

**MATH 2730 CALCULUS FOR ENGINEERING AND SCIENCE III (4).** LEC. 4. Pr., MATH 1720. Optimization and Lagrange multipliers. Linear, spherical, cylindrical, polar transformations. The Jacobian. Surface integrals and integrals over solids. Divergence, Stokes' Theorem, Gauss' Theorem. Credit will only be given for one of MATH 2730, MATH 2630, or MATH 2637.

**MATH 2790 MATHEMATICS OF INTEREST THEORY (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Mathematical foundations of the theory of interest necessary as preparation for the Society of Actuaries examination on the theory of interest.

**MATH 2850 MATHEMATICS FOR ELEMENTARY EDUCATION I (3).** LEC. 3. Mathematical insights for elementary school teachers. Sets, the structure of the number system (integers, fraction, decimals). Elementary Education majors Departmental approval.

**MATH 2860 MATHEMATICS FOR ELEMENTARY EDUCATION II (3).** LEC. 3. Pr., MATH 2850. Mathematical insights for elementary school teachers. Probability, informal geometry, measurement. Elementary Education majors Departmental approval.

**MATH 2870 MATHEMATICS FOR ELEMENTARY EDUCATION III (3).** LEC. 3. A reexamination of the number system, geometry, probability, graph theory and discrete mathematics with emphasis on multiple problem solving techniques. Open for credit only for elementary education majors except by special permission of the mathematics department. Spring, Fall.

**MATH 3010 HISTORY OF MATHEMATICS (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. The evolution of modern mathematics from its motivational roots in the physical sciences; the lives and contributions of outstanding mathematicians; the parallel development of mathematics and western culture. Departmental approval.

**MATH 3100 INTRODUCTION TO ADVANCED MATHEMATICS (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Teaching of the fundamental abilities necessary for the pursuance of mathematical studies. Logic and set theory, mathematical induction, basic number theory, basic analysis. Credit will not be given for both MATH 3100 and Math 3710.

**MATH 3710 DISCRETE MATHEMATICS (3).** LEC. 3. Pr., MATH 2660. Methods of proof, induction, counting, inclusion-exclusion, discrete probability, relations, partial orders, graphs, trees, languages, grammars, finite state machines, automata. Credit will not be given for both MATH 3710 and Math 3700.

**MATH 4790 ACTUARIAL SEMINAR IN THE MATHEMATICS OF FINANCE (3).** LEC. 3. Pr., MATH 2790. Intensive seminar in the mathematical aspects of finance, and the theory of interest primarily intended as preparation for the Society of Actuaries Course 2 examination.

**MATH 4820 ACTUARIAL SEMINAR IN PROBABILITY (3).** LEC. 3. Pr., STAT 3600. Intensive seminar in calculus, probability, and risk theory primarily intended as preparation for the Society of Actuaries Course 1 examination, or equivalent.

**MATH 4930 DIRECTED STUDIES (1-3).** IND. Study of individual problems or topics of interest to students. Course may be repeated for a maximum of 3 credit hours. Course may be repeated for a maximum of 3 credit hours.

**MATH 4970 SPECIAL TOPICS (1-4).** IND. An individual problems course. Each student will work under the direction of a staff member on a problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

**MATH 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Membership in Honors College. Course may be repeated for a maximum of 6 credit hours.

**MATH 5000 MATH MODELING CONTINUOUS (3).** LEC. 3. Pr., MATH 2650 and MATH 2660. Introduction to mathematical models and related techniques. Includes general principles involving continuous deterministic problems and a detailed, specific term- project. Programming ability.

**MATH 5010 VECTOR CALCULUS (3).** LEC. 3. Pr., MATH 2630 and MATH 2660. Vector-valued functions, vector fields. Gradient, divergence, curl. Integral theorems: Green's Theorem, Stoke's Theorem, Gauss' Theorem. Tensors and differential forms. Applications. Departmental approval.

**MATH 5030 COMPLEX VARIABLES WITH APPLICATIONS I (3).** LEC. 3. Pr., MATH 2650. Complex functions and their elementary mapping properties; contour integration and residues; Laurent series; applications to real integrals. MATH 6030-6040 are appropriate for students of engineering or science.

**MATH 5040 COMPLEX VARIABLES WITH APPLICATIONS II (3).** LEC. 3. Pr., MATH 5030. Linear fractional transformations; conformal mappings; harmonic functions; applications to boundary value problems; analytic continuation; entire functions. MATH 5030-5040 are appropriate for students of engineering or science.

**MATH 5050 MATRIX THEORY AND APPLICATIONS (3).** LEC. 3. Pr., MATH 2660. Canonical forms, determinants, linear equations, characteristic value problems.

**MATH 5060 ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3).** LEC. 3. Pr., MATH 2650. First and second order linear partial differential equations with emphasis on the method of eigen function expansions.

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**MATH 5120 INFORMATION THEORY (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Information and entropy, information rate optimization and channel capacity, variable-length codes, data compression (Kraft-McMillan inequality, Huffman's algorithm), maximum likelihood decoding, Shannon's Noisy Channel Theorem.

**MATH 5130 CALCULUS OF VARIATION (3).** LEC. 3. Pr., MATH 2650. Fundamental concepts of extrema of functions and functionals; first and second variations; generalizations; sufficient conditions; constrained functionals; the general Lagrange Problem; optimal control.

**MATH 5140 DATA COMPRESSION (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Lossless compression methods, including static, dynamic, and higher order Huffman and arithmetic encoding, interval and recency rank encoding, and dictionary methods; lossy transform methods (JPEG).

**MATH 5150 ALGEBRAIC CODING THEORY (3).** LEC. 3. Linear codes, Hamming and Golay codes, BCH codes, cyclic codes. Random error detection and correction. Burst-error correction. Decoding algorithms. Credit will not be given for both MATH 5150 and MATH 6150/6156.

**MATH 5160 INTRODUCTION TO APPLIED MATHEMATICS (3).** LEC. 3. Pr., MATH 2650 and MATH 2660. Fourier transforms, Z-transforms, Function spaces, eigen function methods. Conservation laws, diffusion, equilibrium states, wave phenomena, classical transform methods, energy integrals and conservation, maximum principles.

**MATH 5180 CRYPTOGRAPHY (3).** LEC. 3. Pr., MATH 2660. Classical cryptosystems, the Data Encryption Standard, one-way functions and relevant number theoretic problems (factoring, primality testing, discrete logarithm problem), RSA and other public key cryptosystems.

**MATH 5190 INTRODUCTION TO APPROXIMATION THEORY (3).** LEC. 3. Pr., MATH 2650. Approximation of functions by polynomials, spline functions or trigonometric function, expansions in series. MATH 6180 is appropriate for students of engineering and science.

**MATH 5200 ANALYSIS I (3).** LEC. 3. Pr., MATH 3100. The real number system, theorems concerning number sets, sequences, graphs of functions. Or analogous course subject to departmental approval.

**MATH 5210 ANALYSIS II (3).** LEC. 3. Pr., MATH 5200. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integration, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.

**MATH 5240 FOURIER ANALYSIS (3).** LEC. 3. Pr., MATH 2650. Convergence and oscillation theorems for Fourier Series. Gibbs phenomenon. Fourier transform. Fast Fourier transform.

**MATH 5280 SYSTEMS OF DIFFERENTIAL EQUATIONS AND APPLICATIONS (3).** LEC. 3. Pr., MATH 2650 and MATH 2660. Linear systems of differential equations, stability, phase portraits; non-linear systems, linearization, qualitative properties of orbits, Poincare-Bendixson Theorem; numerical methods; applications.

**MATH 5300 THEORY OF DIFFERENCE EQUATIONS (3).** LEC. 3. Pr., MATH 2660. Linear difference equations, initial value problems, Green's functions, boundary value problems, systems, periodic solutions, nonlinear difference equations, models.

**MATH 5310 INTRODUCTION TO ABSTRACT ALGEBRA I (3).** LEC. 3. Pr., MATH 3100. Groups, Groups of Permutations, isomorphisms and homomorphisms; Cyclic Groups, Quotient Groups, The Fundamental Homomorphism Theorem. Departmental approval.

**MATH 5320 INTRODUCTION TO ABSTRACT ALGEBRA II (3).** LEC. 3. Pr., MATH 5310. Theory of rings and fields, Ideals and Homomorphisms, Quotient Rings, Rings of Polynomials, Extensions of Fields, Galois Theory.

**MATH 5330 COMPUTATIONAL ALGEBRA (3).** LEC. 3. Pr., MATH 5310. Introduction to computation in multivariate polynomial rings and finite fields. Topics include Berlekamp's Algorithm, Groebner bases, Buchberger's Algorithm, kinematic/robotics problems, symbolic manipulation software.

**MATH 5370 LINEAR ALGEBRA (3).** LEC. 3. Pr., MATH 2660. Linear transformations, matrix algebra, finite-dimensional vector spaces.

**MATH 5380 INTERMEDIATE EUCLIDEAN GEOMETRY I (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Fundamental concepts and theorems of Euclidean geometry, introduction to higher dimensions. Regular polygons and polyhedra, symmetry groups, convexity, geometric extremum problems. Geometric transformations and their invariants.

**MATH 5390 INTERMEDIATE EUCLIDEAN GEOMETRY II (3).** LEC. 3. Pr., MATH 5380. Planar graphs and Euler's theorem. The symmetry group of a set, homotheties and similitudes, path, arcs and length of curves, advanced theorems on the circle.

**MATH 5470 DYNAMICAL SYSTEMS I (3).** LEC. 3. Pr., MATH 2650. One dimensional dynamics. The logistic equation, bifurcation theory, chaos, hyperbolicity, symbolic dynamics, Sarkovskii's Theorem, maps of the circle, homoclinic points and the theory of kneading sequences.

**MATH 5480 DYNAMICAL SYSTEMS II (3).** LEC. 3. Pr., MATH 5470. Higher dimensional and complex dynamics. Lorenz map, Henon map, toral automorphisms,

stable and unstable manifolds, strange attractors, quadratic maps of the complex plane, Julia sets, Mandelbrot set.

**MATH 5500 INTRODUCTION TO TOPOLOGY (3).** LEC. 3. Pr., MATH 3100. Metric spaces, topological spaces, continuity, compactness, connectedness, product and quotient spaces and local properties. Departmental approval.

**MATH 5620 MATHEMATICAL COMPUTATION AND SCIENTIFIC VISUALIZATION (3).** LEC. 3. Pr., MATH 2650. An introduction to the computational modeling process, numerical programming tools for large-scale scientific computation, parallel and cluster computing, and to scientific visualization techniques. MATH 2650 and a programming language, Departmental approval.

**MATH 5630 INTRODUCTION TO NUMERICAL ANALYSIS I (3).** LEC. 3. Pr., MATH 2650. Numerical solution of equations, polynomial approximation, numerical differentiation and integration, numerical solutions of ordinary differential equations, error analysis. Written programs using algorithms. Programming ability.

**MATH 5640 INTRODUCTION TO NUMERICAL ANALYSIS II (3).** LEC. 3. Pr., MATH 2660. Numerical solutions of systems of linear equations, numerical computation of eigenvalues and eigenvectors, error analysis. Written programs using the algorithms. Programming ability.

**MATH 5650 THEORY OF NONLINEAR OPTIMIZATION (3).** LEC. 3. Pr., MATH 2650 and MATH 2660. Kuhn-Tucker conditions, quadratic programming, search methods and gradient methods, Lagrangean and penalty function methods.

**MATH 5670 PROBABILITY AND STOCHASTIC PROCESS I (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both MATH 5670 and STAT 5670.

**MATH 5680 PROBABILITY AND STOCHASTIC PROCESS II (3).** LEC. 3. Pr., MATH 5670 or STAT 5670. Multivariate distributions. Central Limit Theorem, Laplace transforms, convolutions, simulation, renewal processes Continuous-time Markov Chains, Markov renewal and semi-regenerative processes, Brownian motion and diffusion. Credit will not be given for both MATH 5680 and STAT 5680.

**MATH 5690 INTRODUCTION TO CHAOTIC AND RANDOM PHENOMENA (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Stochastic properties of random phenomena in computational complexity, data analysis, chaotic nonlinear systems. Computer simulation and experimenting within Mathematical, supported by Internet resources. Credit will not be given for both MATH 5690 and STAT 5690. Basic programming.

**MATH 5710 LINEAR OPTIMIZATION (3).** LEC. 3. Pr., MATH 2660. Theory and algorithms for standard linear optimization problems. Simplex algorithm and duality, shortest paths, network flows, min-cost flows and circulations, out-of-kilter method, assignments and matchings.

**MATH 5730 ENUMERATION (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Using generating functions and Polya theory to do sophisticated counting. Permutations and combinations, inclusion-exclusion, partitions, recurrence relations, group actions, Polya theory with applications.

**MATH 5750 GRAPH THEORY (3).** LEC. 3. Pr., MATH 2660. Algorithmic and theoretical aspects of graph theory: matchings, colorings, scheduling problems, Hamilton cycles. Euler tours, spanning trees, network reliability, connectivity, extremal graphs, planar graphs, disjoint paths.

**MATH 5770 COMBINATORIAL DESIGNS (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720 Latin squares, mutually orthogonal latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries.

**MATH 5800 ACTUARIAL MATHEMATICS I (3).** LEC. 3. Pr., MATH 2790 and STAT 3600. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums.

**MATH 5810 ACTUARIAL MATHEMATICS II (3).** LEC. 3. Pr., MATH 5800. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums.

**MATH 5840 FOUNDATIONS OF NUMBER THEORY FOR SECONDARY SCHOOL TEACHERS (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Divisibility, Diophantine equations, congruencies.

**MATH 5850 NUMERICAL ANALYSIS FOR SECONDARY TEACHERS (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. The numerical solutions of selected problems arising in calculus and algebra along with the programming techniques. Computer familiarity.

**MATH 5860 FOUNDATIONS OF NON-EUCLIDEAN GEOMETRY FOR SECONDARY SCHOOL TEACHERS (3).** LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. B.L. geometry, hyperbolic geometry, absolute geometry, parallel postulates.

**MATH 5970 SPECIAL TOPICS (1-3).** IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**MATH 6000 MATHEMATICAL MODELING: CONTINUOUS (3).** LEC. 3. Introduction to mathematical models and related techniques. Includes general prin-

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principles involving continuous deterministic problems and a detailed, specific term-project. Programming ability.

**MATH 6010 VECTOR CALCULUS (3).** LEC. 3. Pr., (MATH 2630 or MATH 2637) and MATH 2660. Vector-valued functions, vector fields. Gradient, divergence, curl. Integral theorems: Green's Theorem, Stoke's Theorem, Gauss' Theorem. Tensors and differential forms. Applications. Departmental approval.

**MATH 6030/6036 COMPLEX VARIABLES WITH APPLICATIONS I (3).** LEC. 3. Complex functions and their elementary mapping properties; contour integration and residues; Laurent series; applications to real integrals. MATH 6030-6040 are appropriate for students of engineering or science.

**MATH 6040 COMPLEX VARIABLES WITH APPLICATIONS II (3).** LEC. 3. Pr., MATH 6030 or MATH 6036. Linear fractional transformations; conformal mappings; harmonic functions; applications to boundary value problems; analytic continuation; entire functions. MATH 6030-6040 are appropriate for students of engineering or science.

**MATH 6050 MATRIX THEORY AND APPLICATIONS (3).** LEC. 3. Canonical forms, determinants, linear equations, characteristic value problems.

**MATH 6060 ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3).** LEC. 3. First and second order linear partial differential equations with emphasis on the method of eigen function expansions.

**MATH 6120 INFORMATION THEORY (3).** LEC. 3. Information and entropy, information rate optimization and channel capacity, variable-length codes, data compression (Kraft-McMillan inequality, Huffman's algorithm), maximum likelihood decoding, Shannon's Noisy Channel Theorem.

**MATH 6130 CALCULUS OF VARIATION (3).** LEC. 3. Pr., MATH 2650. Fundamental concepts of extrema functions and functionals; first and second generalizations; sufficient conditions; constrained functionals; the general Legendre problem; optimal control.

**MATH 6140 DATA COMPRESSION (3).** LEC. 3. Lossless compression methods, including static, dynamic, and higher order Huffman and arithmetic encoding, interval and recency rank encoding, and dictionary methods; lossy transform methods (JPEG).

**MATH 6150/6156 ALGEBRAIC CODING THEORY (3).** LEC. 3. Linear codes, Hamming and Golay codes, BCH codes, cyclic codes. Random error detection and correction. Burst-error correction. Decoding algorithms. Credit will not be given for both MATH 5150 and MATH 6150/6156.

**MATH 6160 INTRODUCTION TO APPLIED MATHEMATICS (3).** LEC. 3. Fourier transforms, Z-transforms, Function spaces, eigen function methods. Conservation laws, diffusion, equilibrium states, wave phenomena, classical transform methods, energy integrals and conservation, maximum principles.

**MATH 6180 CRYPTOGRAPHY (3).** LEC. 3. Classical cryptosystems, the Data Encryption Standard, one-way one-way functions and relevant number theoretic problems (factoring, primality testing, discrete logarithm problem), RSA and other public key cryptosystems.

**MATH 6190 INTRODUCTION TO APPROXIMATION THEORY (3).** LEC. 3. Pr., MATH 2650. Approximation of functions by polynomials, spline functions or trigonometric function, expansions in series. MATH 6180 is appropriate for students of engineering and sciences.

**MATH 6200 ANALYSIS I (3).** LEC. 3. The real number system, theorems concerning number sets, sequences, graphs of functions. Or analogous course subject to departmental approval.

**MATH 6210 ANALYSIS II (3).** LEC. 3. Pr., MATH 6200. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integrations, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.

**MATH 6240 FOURIER ANALYSIS (3).** LEC. 3. Pr., MATH 6200. Convergence and oscillation theorems for Fourier Series. Gibbs phenomenon. Fourier transform. Fast Fourier transform.

**MATH 6280 SYSTEMS OF DIFFERENTIAL EQUATIONS AND APPLICATIONS (3).** LEC. 3. Linear systems of differential equations, stability, phase portraits; nonlinear systems, linearization, qualitative properties of orbits, Poincaré-Bendixson Theorem; numerical methods; applications.

**MATH 6300 THEORY OF DIFFERENCE EQUATIONS (3).** LEC. 3. Linear difference equations, initial value problems, Green's functions, boundary value problems, systems, periodic solutions, nonlinear difference equations, models.

**MATH 6310 INTRODUCTION TO ABSTRACT ALGEBRA I (3).** LEC. 3. Groups, Groups of Permutations, isomorphisms and homomorphisms; Cyclic Groups, Quotient Groups, The Fundamental Homomorphism Theorem. Departmental approval.

**MATH 6320 INTRODUCTION TO ABSTRACT ALGEBRA II (3).** LEC. 3. Pr., MATH 6310. Theory of rings and fields, Ideals and Homomorphisms, Quotient Rings, Rings of Polynomials, Extensions of Fields, and Galois Theory.

**MATH 6330 COMPUTATIONAL ALGEBRA (3).** LEC. 3. Pr., MATH 6310. Introduction to computation in multivariate polynomial rings and finite fields. Topics

include Berlekamp's Algorithm, Groebner bases, Buchberger's Algorithm, kinematic/robotics problems, and symbolic manipulation software.

**MATH 6370 LINEAR ALGEBRA (3).** LEC. 3. Linear transformations, matrix algebra, finite-dimensional vector spaces.

**MATH 6380 INTERMEDIATE EUCLIDEAN GEOMETRY I (3).** LEC. 3. Fundamental concepts and theorems of Euclidean geometry, introduction to higher dimensions. Regular polygons and polyhedra, symmetry groups, convexity, geometric extremum problems. Geometric transformations and their invariants.

**MATH 6390 INTERMEDIATE EUCLIDEAN GEOMETRY II (3).** LEC. 3. Pr., MATH 6380. Planar graphs and Euler's theorem. The symmetry group of a set, homotheties and similitudes, path, arcs and length of curves, and advanced theorems on the circle.

**MATH 6470 DYNAMICAL SYSTEMS I (3).** LEC. 3. Pr., MATH 2650. One dimensional dynamics. The logistic equation, bifurcation theory, chaos, hyperbolicity, symbolic dynamics, Sarkovskii's Theorem, maps of the circle, homoclinic points and the theory of kneading sequences.

**MATH 6480 DYNAMICAL SYSTEMS II (3).** LEC. 3. Pr., MATH 6470. Higher dimensional and complex dynamics. Lorenz map, Henonmap, toral automorphisms, stable and unstable manifolds, strange attractors, quadratic maps of the complex plane, Julia sets, Mandelbrot set.

**MATH 6500 INTRODUCTION TO TOPOLOGY (3).** LEC. 3. Metric spaces, topological spaces, continuity, compactness, connectedness, product and quotient spaces and local properties. Departmental approval.

**MATH 6620 MATHEMATICAL COMPUTATION AND SCIENTIFIC VISUALIZATION (3).** LEC. 3. An introduction to the computational modeling process, numerical programming tools for large-scale scientific computation, parallel and cluster computing, and to scientific visualization techniques.

**MATH 6630/6636 INTRODUCTION TO NUMERICAL ANALYSIS I (3).** LEC. 3. Numerical solution of equations, polynomial approximation, numerical differentiation and integration, numerical solutions of ordinary differential equations, error analysis. Written programs using algorithms. Programming ability.

**MATH 6640/6646 INTRODUCTION TO NUMERICAL ANALYSIS II (3).** LEC. 3. Numerical solutions of systems of linear equations, numerical computation of eigenvalues and eigenvectors, error analysis. Written programs using the algorithms. Programming ability.

**MATH 6650 THEORY OF NONLINEAR OPTIMIZATION (3).** LEC. 3. Kuhn-Tucker conditions, quadratic programming, search methods and gradient methods, Lagrangean and penalty function methods.

**MATH 6670/6676 PROBABILITY AND STOCHASTIC PROCESS I (3).** LEC. 3. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both MATH 6670 and STAT 6670.

**MATH 6680 PROBABILITY AND STOCHASTIC PROCESS II (3).** LEC. 3. Pr., MATH 6670 or STAT 6670. Multivariate distributions. Central Limit Theorem, Laplace transforms, convolutions, simulation, renewal processes Continuous-time Markov Chains, Markov renewal and semi-regenerative processes, Brownian motion and diffusion. Credit will not be given for both MATH 6680 and STAT 6680.

**MATH 6690 INTRODUCTION TO CHAOTIC AND RANDOM PHENOMENA (3).** LEC. 3. Pr., MATH 1620. Stochastic properties of random phenomena in computational complexity, data analysis, chaotic nonlinear systems. Computer simulation and experimenting within Mathematical, supported by Internet resources. Credit will not be given for both MATH 6690 and STAT 6690.

**MATH 6710 LINEAR OPTIMIZATION (3).** LEC. 3. Theory and algorithms for standard linear optimization problems. Simplex algorithm and duality, shortest paths, network flows, min-cost flows and circulations, out-of-kilter method, assignments and matchings.

**MATH 6730 ENUMERATION (3).** LEC. 3. Using generating functions and Polya theory to do sophisticated counting. Permutations and combinations, inclusion-exclusion, partitions, recurrence relations, group actions, Polya theory with applications.

**MATH 6750 GRAPH THEORY (3).** LEC. 3. Algorithmic and theoretical aspects of graph theory: matchings, colorings, scheduling problems, Hamilton cycles. Euler tours, spanning trees, network reliability, connectivity, extremal graphs, planar graphs, disjoint paths.

**MATH 6770 COMBINATORIAL DESIGNS (3).** LEC. 3. Latin squares, mutually orthogonal latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries.

**MATH 6800 ACTUARIAL MATHEMATICS I (3).** LEC. 3. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums. Departmental approval.

**MATH 6810 ACTUARIAL MATHEMATICS II (3).** LEC. 3. Pr., MATH 6800. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums.

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**MATH 6840 FOUNDATIONS OF NUMBER THEORY FOR SECONDARY SCHOOL TEACHERS (3).** LEC. 3. Divisibility, Diophantine equations, congruencies.

**MATH 6850 NUMERICAL ANALYSIS FOR SECONDARY TEACHERS (3).** LEC. 3. Pr., MATH 2630 or MATH 2637. The numerical solutions of selected problems arising in calculus and algebra along with the programming techniques. Computer familiarity.

**MATH 6860 FOUNDATIONS OF NON-EUCLIDEAN GEOMETRY FOR SECONDARY SCHOOL TEACHERS (3).** LEC. 3. Pr., MATH 2630 or MATH 2637. B.L. geometry, hyperbolic geometry, absolute geometry, parallel postulates.

**MATH 6970/6976 SPECIAL TOPICS (1-3).** IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**MATH 7000/7006 APPLIED MATHEMATICS I (3).** LEC. 3. Linear spaces, matrices, eigenvalues, least squares solutions to linear systems, Hilbert spaces, orthogonal expansions, integral equations, compact operators, Green's functions for boundary value problems, eigen function expansions. Departmental approval.

**MATH 7010/7016 APPLIED MATHEMATICS II (3).** LEC. 3. Pr., MATH 7000. Calculus of variations, asymptotic expansions, Spectral theory, Fourier transform, Partial differential equations, transform methods and eigen function expansions, vibrations, diffusion processes, equilibrium states, Green's functions, boundary layer problems.

**MATH 7040/7046 APPROXIMATION THEORY I (3).** LEC. 3. Introduction and theory of some of the important methods of approximation. Includes uniform approximation, best approximation, best trigonometric approximation. Departmental approval.

**MATH 7050/7056 APPROXIMATION THEORY II (3).** LEC. 3. Pr., MATH 7040 or MATH 7046. Least square approximation and rational approximation, and advanced topics of current interest.

**MATH 7070 INTERPOLATION I (3).** LEC. 3. Techniques of approximation by interpolation, rates of convergence and methods of estimating error. Simultaneous approximation of functions and their derivatives; spline function interpolation; curve and surface fitting. Departmental approval.

**MATH 7080 INTERPOLATION II (3).** LEC. 3. Pr., MATH 7070. Timan's Theorem. Telyakovski and Gopengauz Theorems. Brudnyi's inequality, Polynomial based discrete cosine transforms, Piecewise polynomial interpolation, B-splines, Recurrence relations, Schoenberg-Whitney Theorem, Convergence properties of spline approximations.

**MATH 7100 SPECIAL FUNCTIONS (3).** LEC. 3. Special functions from classical complex analysis which play an important role in the mathematics of physics, chemistry, and engineering. Departmental approval.

**MATH 7110 DISCRETE GEOMETRY AND CONVEXITY I (3).** LEC. 3. Geometric objects and configurations with discrete symmetry groups. Regular polygons and polyhedra. Regular arrangements. Plane tilings and patterns. Departmental approval.

**MATH 7120 DISCRETE GEOMETRY AND CONVEXITY II (3).** LEC. 3. Pr., MATH 7110. Convexity and related geometric extremum problems. Packing and covering. Arrangements of extreme density.

**MATH 7130 TENSOR ANALYSIS (3).** LEC. 3. Manifolds, differential structure, vector and tensor fields, vector and tensor bundles, differential forms, chains. elements of differential geometry, advanced topics. Departmental approval.

**MATH 7140 INTRODUCTION TO MODEL THEORY (3).** LEC. 3. First-order languages, Satisfaction. Consequences. The completeness and compactness theorems, models constructed from constants. Elementary substructures and embeddings, Lowenheim-Skolem-Tarski theorems. Ultra products and ultrapowers. Departmental approval.

**MATH 7150 AXIOMATIC SET THEORY I (3).** LEC. 3. Introduction to modern set theory. The axioms of ZFC, ordinals and cardinals, closed unbounded sets, the constructible universe  $L$ , Martin's Axiom. Departmental approval.

**MATH 7160 AXIOMATIC SET THEORY II (3).** LEC. 3. Pr., MATH 7150. Introduction to forcing, independence results, iterated forcing, consistency of Martin's Axiom.

**MATH 7170 ALGORITHMS DISCRETE OPTIMIZATION (3).** LEC. 3. Pr., MATH 6750. Theory and practice of discrete algorithms: complexity class classes, reductions, approximate algorithms, greedy algorithms, search techniques, heuristics, randomized algorithms, and numeric algorithms.

**MATH 7180 ALGORITHMIC ALGEBRA I (3).** LEC. 3. Fundamental aspects of algorithmic algebra. Noetherian rings. Theory of Groebner bases. Hilbert Nullstellensatz. Elimination theory. Applications to graph theory and algebraic geometry. Departmental approval.

**MATH 7190 ALGORITHMIC ALGEBRA II (3).** LEC. 3. Pr., MATH 7180. Modules. Groebner bases for modules and syzygy computations. Improved Buchberger's algorithm. Computation of Ext. Groebner bases over rings. Primary decomposition of ideals. Dimension theory.

**MATH 7200 REAL ANALYSIS I (3).** LEC. 3. Sigma algebras, measures, measurable functions, integrability, properties of Lebesgue's measure, density, Lusin's

theorem, Egeroff's theorem, product measures, Fubini's theorem. Limit theorems involving pointwise convergence and integration. Departmental approval.

**MATH 7210 REAL ANALYSIS II (3).** LEC. 3. Pr., MATH 7200.  $L^p$  spaces, completeness, duals. Weak convergence, norm convergence, pointwise convergence, convergence in measure. Signed and complex measures. Absolute continuity, Lebesgue decomposition. Measure theory, Lebesgue integration, introductory functional analysis.

**MATH 7230 FUNCTIONS OF A COMPLEX VARIABLE I (3).** LEC. 3. Complex numbers, analytic functions, derivatives, Cauchy integral theorem and formulae, Taylor and Laurent series, analytic continuation, residues, maximum principles, Riemann surfaces. Departmental approval.

**MATH 7240 FUNCTIONS OF A COMPLEX VARIABLE II (3).** LEC. 3. Pr., MATH 7230. Conformal mapping, families of analytic functions and harmonic analysis.

**MATH 7280 ADVANCED THEORY OF ORDINARY DIFFERENTIAL EQUATIONS I (3).** LEC. 3. Existence and continuation theorems for ordinary differential equations, continuity and differentiability with respect to initial conditions, linear systems, differential inequalities, Sturm theory. Departmental approval.

**MATH 7290 ADVANCED THEORY OF ORDINARY DIFFERENTIAL EQUATIONS II (3).** LEC. 3. Pr., MATH 7280. Stability theory, periodic solutions, boundary value problems, disconjugacy of linear equations, Green's functions, upper and lower solutions, a priori bounds methods, current research.

**MATH 7310 ALGEBRA I (3).** LEC. 3. Groups, Lagrange's Theorem, normal subgroups, factor groups, Isomorphism and Correspondence Theorems. Symmetric groups, alternating groups, free groups, torsion groups. Introduction to rings, correspondence theorems. Departmental approval.

**MATH 7320 ALGEBRA II (3).** LEC. 3. Pr., MATH 7310. Rings, modules, vector spaces, and semi-simple modules. Commutative rings; prime and primary ideals, PIDs are UFD, factorizations in integral domains, field extensions, the Galois Correspondence Theorem.

**MATH 7330 LINEAR REPRESENTATIONS OF FINITE GROUPS (3).** LEC. 3. Pr., MATH 7320. Maschke's Theorem, characters, orthogonality relations, induced modules, Frobenius reciprocity, Clifford's Theorem, Mackey's Subgroup Theorem, Burnside's theorem on solvability.

**MATH 7340 RING THEORY (3).** LEC. 3. Pr., MATH 7320. Topics on: commutative rings (Cohen-Seidenberg theorems, Krull Intersection Theorem, Dedekind domains), or noncommutative rings (projective modules over Artinian algebras, representation type, Noether-Skolem Theorem, division algebras).

**MATH 7350 ABELIAN GROUPS (3).** LEC. 3. Pr., MATH 7320. Torsion groups: Decompositions, Ulm's theorem, uniqueness theorem for Axion 3 groups, Torsion-free groups: Completely decomposable groups, Butler groups,  $p$ -local groups, Warfield groups, splitting criteria. Homological topics.

**MATH 7370 MATRICES I (3).** LEC. 3. Jordan form, functions of a matrix, spectral theorem, singular values, norms, quadratic forms, field of values, inertia; topics of current interest. Departmental approval.

**MATH 7380 MATRICES II (3).** LEC. 3. Pr., MATH 7370. Matrix stability and inertia, inequalities for matrix eigenvalues and singular values, The Kronecker and Hadamard matrix products, the exponential and logarithm matrix map; topics of current interest.

**MATH 7400 FUNCTIONAL ANALYSIS I (3).** LEC. 3. Pr., MATH 7210. Bounded linear transformations and functionals on Banach and Hilbert spaces, weak topologies, linear operators, adjoints, compact operators. Banach algebras, spectral theory, Gelfand transform. Departmental approval.

**MATH 7410 FUNCTIONAL ANALYSIS II (3).** LEC. 3. Pr., MATH 7400.  $C^*$ -algebras, Hermitian, self adjoint elements, functional calculus for commutative algebras. Normal operators on Hilbert space, spectral theorem, applications, symmetric and self-adjoint operators, normal operators, the spectral theorem.

**MATH 7440 PARTIAL DIFFERENTIAL EQUATIONS I (3).** LEC. 3. Second order linear elliptic and hyperbolic equations stressing non-linear and numerical problems, characteristics domains of dependence, energy integrals, finite difference schemes, Sobolev spaces, maximum principle. Departmental approval.

**MATH 7450 PARTIAL DIFFERENTIAL EQUATIONS II (3).** LEC. 3. Pr., MATH 7440. Parabolic and hyperbolic equations, stressing numerical problems, characteristics, domains of dependence, energy integrals, reaction-diffusion problems, Navier-Stokes equations, fixed-point and Galerkin methods.

**MATH 7500 TOPOLOGY I (3).** LEC. 3. Separation and countability axioms, covering properties, completeness, connectedness, metric spaces and metrizable, product and quotient spaces, function spaces. Departmental approval.

**MATH 7510 TOPOLOGY II (3).** LEC. 3. Pr., MATH 7500. Homotopy, elementary properties of retracts, fundamental groups, covering spaces, computations of fundamental groups.

**MATH 7520 DIMENSION THEORY (3).** LEC. 3. Pr., MATH 7500 or MATH 6500. Topological study of dimension in separable metric spaces. Topological invariance of dimension of Euclidean spaces. Dimension and measure. Departmental approval.

**MATH 7530 CONTINUUM THEORY I (3).** LEC. 3. Pr., MATH 7510. Topics such as inverse limits, decompositions, hyperspaces, special mappings, topological

## Mathematics (MATH)

structures from the pathological (indecomposable continua), to the straightforward (Peano continua). Departmental approval.

**MATH 7540 CONTINUUM THEORY II (3).** LEC. 3. Pr., MATH 7530. Topics in continuum theory such as confluent mappings, epsilon mappings, chains, to-the-boundary theorems, relationship to inverse limits, advanced topics.

**MATH 7550 SET THEORETIC TOPOLOGY I (3).** LEC. 3. Pr., MATH 7510. Compactifications, covering properties, metrization theorems and generalized metrizable spaces, topological groups. Departmental approval.

**MATH 7560 SET THEORETIC TOPOLOGY II (3).** LEC. 3. Pr., MATH 7550. Topological Groups, Cardinal invariants, use of set-theoretic axioms such as Martin's Axiom, independence results, advanced topics.

**MATH 7570 EUCLIDEAN TOPOLOGY I (3).** LEC. 3. Pr., MATH 7510. An introduction to concepts basic in algebraic and geometric topology through the study of simple objects such as polyhedra, manifolds, retracts, and the Brouwer fixed point theorem.

**MATH 7580 EUCLIDEAN TOPOLOGY II (3).** LEC. 3. Pr., MATH 7570. Further study of basic geometric topology. Retracts, absolute neighborhood retracts, maps into spheres, invariance of domain.

**MATH 7600/7606 ADVANCED NUMERICAL MATRIX ANALYSIS (3).** LEC. 3. Topics selected from: discretization matrices, sparse matrices, QR-algorithm, symmetric eigenvalue problems, singular value decomposition, pseudo-inverses, simplex method, matrix algorithms for vector computers. Departmental approval.

**MATH 7610/7616 NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS (3).** LEC. 3. The numerical solution of partial differential equations using finite difference and finite element methods. Departmental approval.

**MATH 7620 OPTIMIZATION THEORY (3).** LEC. 3. Unconstrained problems: basic descent, conjugate gradient and quasi-Newton methods. Constrained problems: gradient projection, penalty, cutting plane and Lagrange methods. Credit will not be given for both MATH 7620 and INSY 8420. An ability to program in high-level language.

**MATH 7650 HARMONIC ANALYSIS I (3).** LEC. 3. Fourier series, Fourier transforms, maximal functions, singular integral theory, introduction to function spaces. Departmental approval.

**MATH 7660 HARMONIC ANALYSIS II (3).** LEC. 3. Pr., MATH 7650. Function spaces and interpolation, Calderon's reproducing formulas, wavelets, frames, connections to function spaces applications.

**MATH 7680/7686 ADVANCED TOPICS IN NUMERICAL ANALYSIS (3).** LEC. 3. Topics include: sparse systems of equations, parallel and vector algorithms, nonlinear and singular partial differential equations, calculation of eigenvalues and eigenvectors, pseudo-random numbers, filtering techniques. Departmental approval.

**MATH 7710 COMPUTATIONAL GEOMETRY (3).** LEC. 3. Design and time-complexity of computer algorithms for geometry problems studying the geometric ideas needed for computer-aided design, computer graphics and robotics. Departmental approval.

**MATH 7720 INTRODUCTION TO CODING THEORY (3).** LEC. 3. Introduction to methods and algorithms for reliable communications through error control coding. BCH, Reed-Solomon, Reed-Muller codes, convolutional codes, Berlekamp-Massey, Viterbi, and iterated decoding algorithms. Or its equivalent.

**MATH 7730 ADVANCED TOPICS IN CODING THEORY (3).** LEC. 3. Pr., MATH 7720. Structure and theoretical properties of codes and related algorithms. Relations to other combinatorial and algebraic objects stressed. Departmental approval.

**MATH 7740 ADVANCED COMBINATORIAL DESIGNS (3).** LEC. 3. Topics of current interest and research in combinatorial design theory. Areas included: latin squares, embeddings, Wilson's constructions, quadruple systems, Hadamard designs, graph designs, orthogonal arrays.

**MATH 7750 ADVANCED TOPICS IN GRAPH THEORY (3).** LEC. 3. Pr., MATH 6750. Topics of current interest and recent research in graph theory. May include edge colorings, algebraic graph theory, network flows, factor theory.

**MATH 7760 INTRODUCTION TO ALGEBRAIC TOPOLOGY I (3).** LEC. 3. Pr., MATH 7510. Homology of chain complexes, the axioms of homology and their verification, computations of homology groups. Departmental approval.

**MATH 7770 INTRODUCTION TO ALGEBRAIC TOPOLOGY II (3).** LEC. 3. Pr., MATH 7760. Homology with coefficients and universal coefficient theorem theorems, Cohomology and universal coefficient theorems, homology of products of spaces, cup and cap products, duality in manifolds.

**MATH 7780 ADVANCED ALGEBRAIC TOPOLOGY I (3).** LEC. 3. Advanced topics in homology, cohomology, and duality with relations to and further study of homotopy theory Applications to and further study of manifolds and geometric topology. Departmental approval.

**MATH 7790 ADVANCED ALGEBRAIC TOPOLOGY II (3).** LEC. 3. Pr., MATH 7780. Continuation of MATH 7780; advanced topics in homology, cohomology, and duality with relations to and further study of homotopy theory. Applications to and further study of manifolds and geometric topology.

**MATH 7800 PROBABILITY I (3).** LEC. 3. Pr., a full year of undergraduate mathematical analysis at a level commensurate with MATH 5200/5210. Measure-theoretic foundations, independence, conditioning, martingales, Markov property, stationarity, random walks Markov chains Poisson processes.

**MATH 7810/7816 PROBABILITY II (3).** LEC. 3. Pr., MATH 7800. Classical and modern topics in stochastic processes (Markov chains, Poisson process, Brownian motion). Applications and stochastic models (queues, stationary processes, population dynamics, finances). Credit will not be given for both MATH 7810 and STAT 7810.

**MATH 7820/7826 APPLIED STOCHASTIC PROCESSES I (3).** LEC. 3. Pr., MATH 7810 or STAT 7810. Classical and modern topics in stochastic processes (Markov processes, Random Walks, Martingales, Brownian motion). Introduction to stochastic integrals and differential equations. Applications (queues, population dynamics, chaos, finances). Credit will not be given for both MATH 7820 and STAT 7820.

**MATH 7830 APPLIED STOCHASTIC PROCESSES II (3).** LEC. 3. Pr., MATH 7810. Classical and modern topics in stochastic processes (Markov processes, Random Walks, Martingales, Brownian motion). Introduction to stochastic integrals and differential equations. Applications (queues, population dynamics, chaos finances).

**MATH 7870 REAL FUNCTIONS AND DESCRIPTIVE SET THEORY I (3).** LEC. 3. Pr., MATH 7210 or MATH 7500. Borel classification of sets, the Baire classification of real functions. Derivatives and approximately continuous functions. The Lebesgue density topology.

**MATH 7880 REAL FUNCTIONS AND DESCRIPTIVE SET THEORY II (3).** LEC. 3. Pr., MATH 7870. Analytic and coanalytic sets. Lebesgue measurable, universally measurable and Marczewski measurable sets and functions. Baire properties. Singular sets. Category analogs to real analysis.

**MATH 7950 SEMINAR (1-3).** SEM. SU. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**MATH 7960 SPECIAL PROBLEMS (1-10).** IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**MATH 7970 SPECIAL TOPICS (1-10).** IND. Topics may vary as needed. Departmental approval. Course may be repeated with change in topics.

**MATH 7980 RESEARCH AND SPECIAL PROJECT IN APPLIED MATHEMATICS (1-10).** RES. SU. For students working on the Master of Applied Mathematics degree with concentration in numerical analysis. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**MATH 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with change in topic.

**MATH 8310 HOMOLOGICAL ALGEBRA I (3).** LEC. 3. Pr., MATH 7320. Homology and cohomology. Hom and Tensor functors; the adjoint isomorphisms, injective/projective modules, flat modules, the classification of certain rings using homological tools. Departmental approval.

**MATH 8320 HOMOLOGICAL ALGEBRA II (3).** LEC. 3. Pr., MATH 8310. Localizations of modules, nonsingular rings and modules, the Goldie dimension, homological classification of modules; Whitehead modules, reflexive modules, R-modules as modules over their rings of endomorphisms.

**MATH 8400 ADVANCED FUNCTIONAL ANALYSIS I (3).** LEC. 3. Pr., MATH 7210 and MATH 7400. Topics concerning bounded and unbounded linear operators in Banach and Hilbert spaces; theory of distributions and topological vector spaces with applications, current research.

**MATH 8410 ADVANCED FUNCTIONAL ANALYSIS II (3).** LEC. 3. Pr., MATH 8400. Topics from the theory of bounded and unbounded linear operators in Banach and Hilbert spaces; elements of nonlinear functional analysis, topics of current research interest.

**MATH 8600 ADVANCED PROBABILITY I (3).** LEC. 3. Processes, distributions, independence, Random sequences, series, averages, characteristic functions. Classical limits theorems, conditioning. Some experience with graduate level mathematics, preferably in the areas of analysis and topology.

**MATH 8610 ADVANCED PROBABILITY II (3).** LEC. 3. Pr., MATH 8600. Martingales, Markov chains, random walks, renewal theory, Poisson processes and ergodic theory.

**MATH 8630 ADVANCED STOCHASTIC PROCESSES I (3).** LEC. 3. Pr., MATH 8610. Gaussian processes, Brownian motion, invariance principles, convergence of random processes, measures and sets, stochastic integrals and quadratic variation.

**MATH 8640 ADVANCED STOCHASTIC PROCESSES II (3).** LEC. 3. Pr., MATH 8630. Continuous martingales and Brownian motion, stochastic differential equations and martingale problems, local time, excursions, one-dimensional SDE's and diffusions.

**MATH 8700 FINITE GEOMETRY I (3).** LEC. 3. Pr., MATH 5370. Projective and affine spaces over finite fields. Inversive planes. Relationship with linear algebra over finite fields and permutation groups. Applications to combinatorial designs. Or equivalent.

**MATH 8710 FINITE GEOMETRY II (3).** LEC. 3. Pr., MATH 8700. Projective and affine spaces over finite fields. Inversive planes. Relationship with linear algebra over finite fields and permutation groups. Applications to combinatorial designs.



## Materials Engineering (MATL)

**MATH 8960 SPECIAL PROBLEMS (1-10).** IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

**MATH 8970 SPECIAL TOPICS (1-10).** IND. Topics may vary as needed. Course may be repeated with change in topic. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

**MATH 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

### Materials Engineering (MATL)

Dr. Jeffrey Fergus - 844-3405

**MATL 2100 INTRODUCTION TO MATERIALS SCIENCE (3).** LEC. 3. The science of solid materials and the relationship between this science and material properties.

**MATL 2210 MATERIALS FOR SUSTAINABLE ENERGY PRODUCTION AND STORAGE (1).** LEC. 1. Pr., CHEM 1030 Technologies for sustainable energy production and storage, renewable energy conversion, associated materials challenges.

**MATL 2220 MATERIALS AND THE ENVIRONMENT (1).** LEC. 1. Pr., CHEM 1030. Environmental impact of the production, use and disposal of materials.

**MATL 3100 ENGINEERING MATERIALS - METALS (3).** LEC. 3. Pr., MATL 2100. The relationship among processing, microstructure, properties and engineering applications of metallic materials.

**MATL 3101 METALLOGRAPHY LABORATORY (1).** LAB. 3. Coreq., MATL 3100. The use of micro structural characterization to understand the relationship between microstructure and properties of metallic materials.

**MATL 3200 ENGINEERING MATERIALS POLYMERS (3).** LEC. 3. Pr., CHEM 1040. The synthesis, processing, structure and properties of polymers and polymer matrix composites.

**MATL 3201 POLYMER AND COMPOSITES LABORATORY (1).** LAB. 3. Coreq., MATL 3200. A hands-on lab course on the synthesis, processing, structure and properties of polymers and polymer matrix composites.

**MATL 3300 ENGINEERING MATERIALS - CERAMICS (3).** LEC. 3. Pr., MATL 2100. The engineering of ceramic materials. Structural property relationships of crystalline and glassy ceramics will be included.

**MATL 4500 MATERIALS PROPERTIES AND SELECTION (4).** LEC. 3, LAB. 3. Pr., ENGR 2070 and MATL 3100 and MATL 3200. Methods for microstructure control. Design of processing sequences, statistical and economical analysis.

**MATL 4930 DIRECTED STUDIES (1-6).** IND. SU. Areas of interest within Materials Engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**MATL 4980 SENIOR DESIGN PROJECT (3).** LEC. 1, LAB. 6. Students select, design, schedule, fabricate and perform an engineering design project related to Materials Engineering.

**MATL 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Individual student directed research and writing of honors thesis. Course may be repeated for a maximum of 6 credit hours. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**MATL 5100 THERMODYNAMICS OF MATERIALS SYSTEMS (3).** LEC. 3. Pr., CHEM 1040 and ENGR 2200. Application of thermodynamics to describe phase stability, crystal imperfections, solubility, oxidation, surface, and interface energy and transformations. Departmental approval.

**MATL 5200 CRYSTALLOGRAPHY (2).** LEC. 2. Pr., PHYS 1610. Principles of crystallography, reciprocal lattice X-ray diffraction techniques. Departmental approval.

**MATL 5201 XRAY DIFFRACTION LABORATORY (1).** LAB. 3. Coreq., MATL 5200. Laboratory on the use of x-ray diffraction for materials characterization.

**MATL 5300 PHASE TRANSFORMATIONS IN MATERIAL PROCESSING (3).** LEC. 3. Pr., MATH 2650 and ENGR 2200. Principles that govern phase transformations in materials systems and control of nucleation and growth, microstructure and morphology. Departmental approval.

**MATL 5400 PHYSICS OF SOLIDS (3).** LEC. 3. Pr., PHYS 1610. The physics of solid-state materials, including the electronic, optical and magnetic properties of materials. Departmental approval.

**MATL 5500 NUMERICAL SIMULATION OF MATERIALS PROCESSING (3).** LEC. 3. Pr., MATL 5100 and P/C, MATL 5300. Fundamental principles and applications of computer-aided simulation of transport phenomena in materials processing systems. Departmental approval.

**MATL 5600 CORROSION (3).** LEC. 3. Pr., CHEM 1040. Fundamentals of chemical degradation of materials. Types and methods for prevention and minimization of corrosion.

**MATL 5700 BIOMATERIALS (3).** LEC. 3. Interactions between materials and proteins, cells, and tissue as related to medicine and biotechnology including tissue culture, cardiovascular, drug delivery, tissue engineering and other applications. Thermodynamics of protein adsorption. Cell biology of adhesion. Analytical methods, sterilization, and regulations. Departmental approval.

**MATL 5750 MICROSTRUCTURE AND MECHANICS OF SKELETAL TISSUES (3).** LEC. 3. Pr., MATL 2100 and (ENGR 2070 or MECH 3130). Molecular and cellular micro structural influence over the viscoelastic deformation of the skeletal tissues of bone muscle, ligament, tendon and cartilage; mechanics of failure and biomechanical injury mechanisms; consideration of the physiological processes of adaptive remodeling and healing of tissues; recent developments in orthopedic implant materials.

**MATL 5970 INTERMEDIATE SPECIAL TOPICS (1-3).** LEC. 1-3. Regular course addressing an advanced specialized area of Materials Engineering not covered by regularly offered courses. Departmental approval. Course may be repeated with change in topics.

**MATL 6100/6106 THERMODYNAMICS OF MATERIALS SYSTEMS (3).** LEC. 3. Application of thermodynamics to describe phase stability, crystal imperfections, solubility, oxidation, surface and interface energy and transformations. Departmental approval.

**MATL 6200/6206 CRYSTALLOGRAPHY (2).** LEC. 2. Principles of crystallography, reciprocal lattice X-ray diffraction techniques. Departmental approval.

**MATL 6201 XRAY DIFFRACTION LABORATORY (1).** LAB. 3. Coreq., MATL 6200. Laboratory on the use of x-ray diffraction for materials characterization.

**MATL 6300/6306 PHASE TRANSFORMATIONS IN MATERIAL PROCESSING (3).** LEC. 3. Principles that govern phase transformations in materials systems and control of nucleation and growth, microstructure, and morphology. Additional Pr: Departmental approval.

**MATL 6400/6406 PHYSICS OF SOLIDS (3).** LEC. 3. The physics of solid-state materials, including the electronic, optical, and magnetic properties of materials. Departmental approval.

**MATL 6500/6506 NUMERICAL SIMULATION OF MATERIALS PROCESSING (3).** LEC. 3. Fundamental principles and applications of computer-aided simulation of transport phenomena in materials processing systems. Departmental approval.

**MATL 6600/6606 CORROSION (3).** LEC. 3. Pr., CHEM 1040. Fundamentals of chemical degradation of materials. Types and methods for prevention and minimization of corrosion.

**MATL 6700/6706 BIOMATERIALS (3).** LEC. 3. Interactions between materials and proteins, cells, and tissue as related to medicine and biotechnology including tissue culture, cardiovascular, drug delivery, tissue engineering and other applications. Thermodynamics of protein adsorption. Cell biology of adhesion. Analytical methods, sterilization and regulations. Departmental approval.

**MATL 6750/6756 MICROSTRUCTURE AND MECHANICS OF SKELETAL TISSUES (3).** LEC. 3. Molecular and cellular micro structural influence over the viscoelastic deformation of the skeletal tissues of bone muscle, ligament, tendon and cartilage; mechanics of failure and biomechanical injury mechanisms; consideration of the physiological processes of adaptive remodeling and healing of tissues; recent developments in orthopedic implant materials. Departmental approval.

**MATL 6970/6976 INTERMEDIATE SPECIAL TOPICS IN MATERIALS ENGINEERING (1-3).** LEC. 3. Regular course addressing an advanced specialized area of Materials Engineering not covered by regularly offered courses. Departmental approval. Course may be repeated with change in topics.

**MATL 7050/7056 DEFORMATION AND FAILURE OF ENGINEERING MATERIALS (3).** LEC. 3. Coreq., MATL 6200. Theoretical presentation of the fundamental principles of deformation and failure in materials systems. Departmental approval.

**MATL 7110/7116 PHYSICAL METALLURGY AND APPLICATIONS IN METAL FABRICATION (3).** LEC. 3. The physical metallurgy underlying processing-structure- property relationships in metals and alloys, with examples from joining processes. Departmental approval.

**MATL 7120/7126 ADVANCED CERAMIC MATERIALS (3).** LEC. 3. Processing, structure-property relationships and applications of advanced ceramics. Structural and functional applications of ceramics. Departmental approval.

**MATL 7130/7136 ADVANCED POLYMER SCIENCE AND TECHNOLOGY (3).** LEC. 3. Recent developments in both functional and structural polymers including approaches to synthesis, processing techniques, high-strength materials, electronic polymers, optic polymers, and medical polymers. Departmental approval.

**MATL 7140/7146 ADVANCED COMPOSITE MATERIALS (3).** LEC. 3. Processing, mechanics structure and properties of composite materials. Emphasis will be placed on an understanding of processing-structure-property relationships in polymer-, ceramic-, and metal-matrix composites. Departmental approval.

**MATL 7150/7156 NANOSCALE SCIENCE AND TECHNOLOGY (3).** LEC. 3. Synthesis and properties of nanomaterials and nanostructures including: nanograined materials and carbon nanotubes. Nanotechnology including: nanolithography self- assembly, single atom manipulation, nanoelectromechanical devices. Departmental approval.

**MATL 7210/7216 PLASTIC DEFORMATION AND STRENGTHENING OF METALLIC MATERIALS (3).** LEC. 3. Mechanisms of plastic deformation and strengthening in metals and alloys. The role of dislocations in plastic deformation. Departmental approval.

## Mechanical Engineering (MECH)

**MATL 7220/7226 RADIATION EFFECTS ON MATERIALS (3).** LEC. 3. Theoretical and experimental treatment of the radiation effects and damage in materials as related to the nuclear industry. Departmental approval.

**MATL 7230/7236 HIGH TEMPERATURE MATERIALS PERFORMANCE (3).** LEC. 3. Theoretical and experimental treatment of the behavior of metals at high temperature. Departmental approval.

**MATL 7310/7316 SOLIDIFICATION PROCESSING (3).** LEC. 3. Theoretical science and engineering principles that apply to semiconductor crystal growth, ingot solidification, metal casting, welding and rapid solidification processes. Departmental approval.

**MATL 7320/7326 THIN FILM SCIENCE AND TECHNOLOGY (3).** LEC. 3. Structure, properties, characterization, processing and application of thin films. Departmental approval.

**MATL 7410/7416 CHEMICAL SENSORS (3).** LEC. 3. Fundamentals and application of chemical sensors. Includes electrolyte, semiconductor and acoustic wave-based sensors. Departmental approval.

**MATL 7420/7426 SMART MATERIALS AND STRUCTURES (3).** LEC. 3. An introduction to the principles and applications of various sensor, actuator and functional smart material systems and structures. Departmental approval.

**MATL 7430/7436 DIELECTRIC MATERIALS AND DEVICES (3).** LEC. 3. Pr., (MATL 6100 or MATL 6106) and MATL 6400. Processing, structure, properties, and application of dielectrics, including physics of dielectrics, material/ device design/ fabrication processes, and application of dielectric materials in high-technological industry. Departmental approval.

**MATL 7440/7446 MATERIALS PROCESSES MICRO AND NANOSYSTEMS (3).** LEC. 3. Materials, processes, and principles involved in manufacturing of micro and nanoelectromechanical systems. Properties of materials used in micromachined transducers as a related to current and potential micro and nanofabrication processes. Departmental approval.

**MATL 7450/7456 HIGH TEMPERATURE ELECTROCHEMICAL DEVICES (3).** LEC. 3. Principles of solid-state electrochemistry, application to temperature devices including chemical sensors, fuel cells and batteries. Departmental approval.

**MATL 7510/7516 ELECTRON MICROSCOPY (3).** LEC. 3. Theory, instrumentation, techniques and applications of scanning and transmission electron microscopy. Departmental approval.

**MATL 7511 ELECTRON MICROSCOPY LABORATORY (1).** LAB. 3. Coreq., MATL 7510 Laboratory on the use of electron microscopy for materials characterization.

**MATL 7600/7606 BIOSENSORS: PRINCIPLES AND APPLICATIONS (3).** LEC. 3. The fundamentals and applications of biological sensor. Physical and chemical transducers, biorecognition. Biosensor materials, technology, and fabrication. Departmental approval.

**MATL 7610/7616 ENGINEERING ASPECTS OF BIOLOGICAL AND CHEMICAL DETECTION (3).** LEC. 3. Biological and chemical scientific concepts related to biological and chemical threat agents. Existing and developing detection technologies, trends and needs for the future detection systems. Physical principles behind the detection technologies. Evaluation of detection device or system performance. Departmental approval.

**MATL 7620/7626 NANO/MICRO FLUIDIC SYSTEMS (3).** LEC. 3. Basic understanding of nano/microfluidics (typical volumes are nanoliters or picoliters) and practical applications in materials science and engineering, biotechnology, and other interdisciplinary fields of engineering and science. Departmental approval.

**MATL 7630/7636 NANOMATERIALS FOR BIOTECHNOLOGY (3).** LEC. 3. Basic understanding of nanobiotechnology and practical applications in the interdisciplinary fields of Materials Science and Engineering and biotechnology/medicine including nanostructured biomolecules and bioarrays as well as biomolecular nanoelectronics. Departmental approval.

**MATL 7950 MATERIALS ENGINEERING SEMINAR (0).** SEM. SU. Required during each semester of residency, but cannot be used toward minimum requirements for graduate degree in materials engineering. Content changes each semester and consists of off-campus speakers and presentations by graduate students and faculty.

**MATL 7960/7966 DIRECTED READINGS IN MATERIALS ENGINEERING (1-6).** IND. SU. May be taken more than one semester. Up to 6 hours may count toward the minimum degree requirements. Departmental approval. Course may be repeated with change in topics.

**MATL 7970/7976 SPECIAL TOPICS IN MATERIALS ENGINEERING (1-3).** LEC. Regular course addressing an advanced specialized area of Materials Engineering not covered by regularly offered courses. Departmental approval. Course may be repeated with change in topics.

**MATL 7980/7986 MASTER MATERIALS ENGINEERING PROJECT (3).** LEC. 3. SU. Special design project report directed by major faculty. Topics to be determined by the student's graduate committee.

**MATL 7990 RESEARCH AND THESIS (1-15).** MST. Course may be repeated with change in topic.

**MATL 8990 RESEARCH AND DISSERTATION (1-15).** DSR. Course may be repeated with change in topic.

## Mechanical Engineering (MECH)

Dr. Sushil Bhavnani - 844-3303

**MECH 2AA0 MECHANICAL ENGINEERING PROGRESS ASSESSMENT I (0).** TST. SU. Progress Assessment Examination in: multivariate calculus, differential equations, chemistry, physics, statics, dynamics.

**MECH 2110 STATICS AND DYNAMICS (4).** LEC. 3, LAB. 3. Pr., (MATH 1620 or MATH 1627) and PHYS 1600. Vectors, forces, moments and free body diagrams. Systems in mechanical equilibrium. Particles in motion.

**MECH 2120 KINEMATICS AND DYNAMICS OF MACHINES (4).** LEC. 3, LAB. 3. Pr., MATH 2630 and MECH 2110. Kinematics and kinetics of rigid bodies. Kinematics and dynamics of mechanisms, cams and gears.

**MECH 2220 COMPUTER-AIDED ENGINEERING (3).** LEC. 2, LAB. 3. Pr., ENGR 1110 and COMP 1200 and P/C, MATH 2650. The computer as a tool in mechanical engineering.

**MECH 3AA0 MECHANICAL ENGINEERING PROGRESS ASSESSMENT II (0).** TST. SU. Pr., MECH 2AA0. Progress Assessment Examination in: Statistics, linear algebra, mechanical design, thermo-fluid design, social impact, contemporary issues.

**MECH 3020 THERMODYNAMICS II (3).** LEC. 3. Pr., ENGR 2010. Gas and Vapor power cycles, Refrigeration cycles, Gas and gas-vapor mixtures, Chemical reactions, Chemical and phase equilibrium, Thermodynamic property relations.

**MECH 3030 FLUID MECHANICS (3).** LEC. 3. Pr., MECH 2110 and ENGR 2010 and MATH 2650 and P/C, MECH 3130. Fluid properties; fluid statics; mass conservation; momentum equation; external and internal flows; Euler and Bernoulli equations; dimensional analysis; viscous flows; boundary layers; compressible flow.

**MECH 3040 HEAT TRANSFER (3).** LEC. 3. Pr., MECH 3020 and MECH 3030. Fundamentals of heat transfer by conduction, convection, and radiation. Introduction to heat exchangers.

**MECH 3050 MEASUREMENT AND INSTRUMENTATION (3).** LEC. 2, LAB. 3. Pr., MECH 3030 and P/C, ELEC 3810 and P/C, MECH 3040. Theory and practice of modern sensors and computer-based data acquisition techniques, uncertainty analysis, results reporting, filtering and signal processing.

**MECH 3130 MECHANICS OF MATERIALS (4).** LEC. 3, LAB. 1. Pr., MECH 2110 and MATL 2100 and MATH 2650 and MATH 2660 and (MECH 2220 or MECH 3220). Stress and strain concepts, stress-strain relationships, applications, uniaxially loaded members, torsion, normal and shear stresses in beams, beam deflections, buckling, stress concentration, combined loading, failure theories, strain energy, impact loading, cyclic loading.

**MECH 3140 SYSTEM DYNAMICS AND CONTROLS (3).** LEC. 3. Pr., MECH 2120 and MATH 2650. System dynamics and automatic control theory.

**MECH 3200 CONCEPTS IN DESIGN AND MANUFACTURING (2).** LEC. 2. Pr., MECH 2110 and (P/C, MECH 2220 or P/C, MECH 3220). The mechanical design process, project based, with teamwork, project management and communication. Users' needs, engineering requirements, concept generation and selection, design development.

**MECH 3210 DESIGN AND MANUFACTURING LAB (1).** LAB. 1. Manufacturing safety lab for introduction to manufacturing processes associated with cutting, forming, and joining of metals and other materials.

**MECH 3230 MACHINE DESIGN (3).** LEC. 3. Pr., MECH 3130 and (MECH 3210 or MECH 2210) and (MECH 3200 or MECH 2210) and (MECH 2220 or MECH 3220). Design of systems containing a variety of mechanical elements.

**MECH 4240 COMPREHENSIVE DESIGN I (2).** LEC. 1, LAB. 3. Pr., (MECH 3AA0 and MECH 3230 and MECH 3040 and P/C, MECH 3050 and P/C, MECH 3140) or (MECH 3AA0 and MECH 3230 and P/C, MECH 3040 and MECH 3050 and P/C, MECH 3140) or (MECH 3AA0 and MECH 3230 and P/C, MECH 3040 and P/C, MECH 3050 and MECH 3140) Capstone engineering design course based on a design project similar to those encountered by the engineer in industry involving thermal and mechanical design.

**MECH 4250 COMPREHENSIVE DESIGN II (2).** LEC. 1, LAB. 3. Pr., (MECH 4240 and MECH 3040 and MECH 3050 and P/C, MECH 3140 and P/C, INSY 3600) or (MECH 4240 and MECH 3050 and MECH 3140 and P/C, MECH 3040 and P/C, INSY 3600) or (MECH 4240 and MECH 3140 and MECH 3040 and P/C, MECH 3050 and P/C, INSY 3600). Continuation of MECH 4240. Detailed design, fabrication, communication, and presentation of a prototype machine for an industrial sponsor.

**MECH 4300 MECHANICAL EQUIPMENT ENGINEERING (3).** LEC. 3. Pr., MECH 3020 and MECH 3030. Operation, performance, maintenance, selection, design and optimization of mechanical equipment commonly found in industrial operations.

**MECH 4310 HEATING, VENTILATING, AIR CONDITIONING AND REFRIGERATION (3).** LEC. 3. Pr., MECH 3040. Theory and practice of modern heating, ventilation, air conditioning and refrigeration systems; concepts, equipment, and systems design.

## Mechanical Engineering (MECH)

- MECH 4320 APPLIED CFD AND HEAT TRANSFER (3).** LEC. 3. Pr., MECH 3040 and MATH 2660. Introduction to computational fluid dynamics and heat transfer techniques used to analyze thermal performance of devices and systems. Commercial software will be used.
- MECH 4410 ENGINES (3).** LEC. 3. Pr., ENGR 2200 or (ENGR 2010 and AERO 3110) or CHEN 2610 or MECH 3030 or CIVL 3110. Theoretical, design and application issues in internal combustion engine-driven power trains, including combustion, engines, turbomachinery and drive trains.
- MECH 4420 VEHICLE DYNAMICS (3).** LEC. 3. Pr., ENGR 2100 or ENGR 2350 or MECH 2120. Ground vehicle resistance, propulsion, maneuvering, and control tires, suspensions, braking, aerodynamics, case studies.
- MECH 4430 VEHICLE DESIGN (3).** LEC. 3. Pr., ENGR 2100 or ENGR 2070 or MECH 3130. Ground vehicle design process: arrangement, structure, systems safety, manufacturing; case studies.
- MECH 4440 AUTOMOTIVE DESIGN EXPERIENCE I (2).** LEC. 1, LAB. 3. Pr., (MECH 4410 and MECH 4420) or (MECH 4410 and MECH 4430) or (MECH 4420 and MECH 4430). Team-based design of a ground vehicle, both whole-vehicle and subsystem; design evaluation and modification; oral and written communication. Departmental approval.
- MECH 4450 AUTOMOTIVE DESIGN EXPERIENCE II (2).** LEC. 1, LAB. 3. Pr., MECH 4440. Team-based fabrication, testing, modification and operation of a ground vehicle; oral and written communication; project management. Departmental approval.
- MECH 4510 INDUSTRIAL AND ENVIRONMENTAL NOISE CONTROL (3).** LEC. 3. Pr., MECH 2120 and MECH 3220. Sources of industrial and community noise, criteria for control, noise measuring instrumentation, issues involved in the design of machinery for minimum noise, noise ordinances and regulations.
- MECH 4520 MACHINERY NOISE AND VIBRATION DIAGNOSTICS (3).** LEC. 3. Pr., MECH 2120 and MECH 3220. An introduction to machinery diagnostics through noise and vibration signatures. Fundamental principles and applications of predictive maintenance of machinery.
- MECH 4700 INTEGRATED ENGINEERING THEORY AND PRACTICE (3).** LEC. 3. Pr., MECH 3200. Real world engineering management decision making, case studies from industry.
- MECH 4930 DIRECTED STUDIES IN MECHANICAL ENGINEERING (1-3).** INT. Individual or small group study of a specialized area of Mechanical Engineering under faculty direction. Departmental approval. Course may be repeated for a maximum of 3 credit hours.
- MECH 4970 SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3).** LEC. Regular course addressing a specialized area of Mechanical Engineering not covered by a regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 3 credit hours.
- MECH 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Individual student directed research and writing of an honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.
- MECH 5010 COMPRESSIBLE FLUID FLOW (3).** LEC. 3. Pr., MECH 3020 and MECH 3030. Properties of ideal gases; General one-dimensional wave motion; Isentropic flow with area change; Normal shock waves; Flow with friction (Fanno Flow) and heat transfer (Rayleigh Flow); Method of characteristics.
- MECH 5110 INTERMEDIATE HEAT TRANSFER (3).** LEC. 3. Pr., MECH 3040. Introduction to the analytical treatment of heat transfer by conduction, convection, and radiation. Suitable for those that require general coverage of advanced theory but whose primary research interest may lie elsewhere.
- MECH 5120 COMBUSTION (3).** LEC. 3. Pr., MECH 3040. Thermodynamics and chemical kinetics of combustion processes, premixed and diffusion flames, ignition, characterization and combustion of gaseous, liquid, and solid fuels, environmental aspects of combustion.
- MECH 5210 ELECTRONICS THERMAL MANAGEMENT (3).** LEC. 3. Pr., MECH 3040 and ELEC 3810. Thermal issues in electronics, review of heat transfer thermal resistance networks, design of finned heat sinks, numerical analysis of electronics cooling, advanced thermal management strategies.
- MECH 5220 VIRTUAL PROTOTYPING (3).** LEC. 3. Departmental approval. Computer simulation of mechanical systems integrating computer-aided design, dynamic simulation and finite element software; application to two-dimensional and three dimensional simple and complex mechanical systems.
- MECH 5230 FRICTION, WEAR AND LUBRICATION (3).** LEC. 3. Pr., MECH 3030 and MECH 3230 or INSY 3800. Friction, wear, and lubrication in design of machine components and other surface interactions, with emphasis on optimizing tribological performance. May count MECH 5230 or MECH 6230/6236.
- MECH 5300 ADVANCED MECHANICS OF MATERIALS (3).** LEC. 3. Pr., MECH 3130. Stress and strain analysis, plane stress and plane strain concepts, generalized Hooke's law, stress function approach applications to 2-D problems, axisymmetric problems bending of curved members, torsion of prismatic members, stress concentration problems.
- MECH 5310 MECHANICS OF ELECTRONIC PACK (3).** LEC. 3. Pr., MECH 3130 and ELEC 3810. Stress and strain analysis of microelectronic packages and electronic assemblies using analytical, experimental and numerical methods.
- MECH 5390 FUNDAMENTALS OF THE FINITE ELEMENT METHOD (3).** LEC. 2, LAB. 3. Pr., MECH 3040 and MECH 3130 and MATH 2660. Introduction to the fundamentals of the finite element method.
- MECH 5410 DYNAMICS OF ROTATING MACHINERY (3).** LEC. 3. Pr., MECH 3140. Issues involved in the analysis and design of high-speed rotating machinery. Modeling, resonance, balancing, bearings, condition monitoring.
- MECH 5420 DYNAMICS OF MULTIBODY SYSTEMS (3).** LEC. 3. Pr., MECH 3140. Concepts in dynamics of multibody systems such as kinematics analysis, Newton Euler, Lagrange and Kane equations of motion, collisions, and vibrations of flexible links.
- MECH 5430 BASICS SENSOR APPLICATIONS (3).** LEC. 3. Pr., MECH 3130. Basic concepts, fabrication and operation of micromachined semiconductor, piezo-electric, piezoresistive, capacitive and fiber-optic sensors.
- MECH 5450 NON-DESTRUCTIVE EVALUATION OF MATERIALS AND STRUCTURES (3).** LEC. 3. Pr., MECH 3130. Non-destructive testing fundamentals. Ultrasonic, acoustic, vibration and eddy current techniques. Case studies.
- MECH 5510 ENGINEERING ACOUSTICS (3).** LEC. 3. Pr., MATH 2650. The fundamentals of acoustics. Vibration of strings, bars, plates. Acoustic plane waves, architectural acoustics and noise control will be emphasized.
- MECH 5610 MECHANICAL VIBRATION (3).** LEC. 3. Pr., MECH 2120 and MATH 2650 and MATH 2660. Modeling of lumped dynamic systems, free and forced vibration of single degree freedom systems, response to arbitrary excitation, analysis of two and multiple degrees of freedom systems.
- MECH 5620 STABILITY AND VIBRATION OF DISCRETE SYSTEMS (3).** LEC. 3. Pr., MECH 5610. Principles of advanced dynamics, linear systems with multiple degrees of freedom, stability and boundedness, free and forced response of linear systems, parameter identification.
- MECH 5710 KINEMATICS AND DYNAMICS OF ROBOTS (3).** LEC. 3. Pr., MECH 3140. Basic concepts in robotics such as kinematic analysis, coordinate transformation, Lagrange and Newton Euler equations of motion.
- MECH 5720 CONTROL OF ROBOTIC MOTION (3).** LEC. 3. Pr., MECH 3140. Application of various algorithms for robot manipulators.
- MECH 5810 MECHATRONICS (3).** LEC. 3. Pr., MECH 2120 and ELEC 3810. Introduction to the integration of mechanisms, sensors, controllers and actuators for machines, and design of automatic machinery.
- MECH 5820 INTRODUCTION TO OPTIMAL SYSTEMS (3).** LEC. 3. Introduction to the mathematical fundamentals of optimization. Application to multiple solution engineering problems in thermo-fluid and mechanical systems.
- MECH 5970 INTERMEDIATE SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3).** LEC. Regular course addressing an advanced specialized area of Mechanical Engineering not covered by a regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 6 credit hours.
- MECH 6010/6016 COMPRESSIBLE FLUID FLOW (3).** LEC. 3. Properties of ideal gases; General one-dimensional wave motion; Isentropic flow with area change; Normal shock waves; Flow with friction (Fanno Flow) and heat transfer (Rayleigh Flow); Method of characteristics.
- MECH 6110/6116 INTERMEDIATE HEAT TRANSFER (3).** LEC. 3. Introduction to the analytical treatment of heat transfer by conduction, convection, and radiation. Suitable for those that require general coverage of advanced theory but whose primary research interest may lie elsewhere.
- MECH 6120/6126 COMBUSTION (3).** LEC. 3. Thermodynamics and chemical kinetics of combustion processes, premixed and diffusion flames, ignition, characterization and combustion of gaseous, liquid, and solid fuels, environmental aspects of combustion.
- MECH 6210/6216 ELECTRONICS THERMAL MANAGEMENT (3).** LEC. 3. Thermal issues in electronics, review of heat transfer thermal resistance networks, design of finned heat sinks, numerical analysis of electronics cooling, advanced thermal management strategies.
- MECH 6220 VIRTUAL PROTOTYPING (3).** LEC. 3. Departmental approval. Computer simulation of mechanical systems integrating computer-aided design, dynamic simulation and finite element software; application to two-dimensional and three dimensional simple and complex mechanical systems.
- MECH 6230/6236 FRICTION, WEAR AND LUBRICATION (3).** LEC. 3. Friction, wear, and lubrication in design of machine components and other surface interactions, with emphasis on optimizing tribological performance. May count MECH 5230 or MECH 6230/6236.
- MECH 6300/6306 ADVANCED MECHANICS OF MATERIALS (3).** LEC. 3. Stress and strain analysis, plane stress and plane strain concepts, generalized Hooke's law, stress function approach applications to 2-D problem, axisymmetric problems, bending of curved members, torsion of prismatic members, stress concentration problems.

## Mechanical Engineering (MECH)

- MECH 6310/6316 MECHANICS OF ELECTRONIC PACKAGING (3).** LEC. 3. Stress and strain analysis of Microelectronic packages and electronic assemblies using analytical, experimental and numerical methods.
- MECH 6390/6396 FUNDAMENTALS OF THE FINITE ELEMENT METHOD (3).** LEC. 2, LAB. 3. Introduction to the fundamentals of the finite element method.
- MECH 6410/6416 DYNAMICS OF ROTATING MACHINERY (3).** LEC. 3. Issues involved in the analysis and design of high-speed rotating machinery. Modeling, resonance, balancing, bearings, condition monitoring.
- MECH 6420/6426 DYNAMICS OF MULTIBODY SYSTEMS (3).** LEC. 3. Concepts in dynamics of multibody systems such as kinematics analysis, Newton Euler, Lagrange and Kane equations of motion, collisions, and vibrations of flexible links.
- MECH 6430/6436 BASICS OF SENSOR APPLICATIONS (3).** LEC. 3. Basic concepts, fabrication and operation of micro machined semiconductor, piezoelectric, piezoresistive, capacitive and fiber-optic sensors.
- MECH 6450 NON-DESTRUCTIVE EVALUATION OF MATERIALS AND STRUCTURES (3).** LEC. 3. Non-destructive testing fundamentals. Ultrasonic, acoustic, vibration, and eddy current techniques. Case studies.
- MECH 6510/6516 ENGINEERING ACOUSTICS (3).** LEC. 3. The fundamentals of acoustics. Vibration of strings, bars, plates. Acoustic plane waves, architectural acoustics, and noise control will be emphasized.
- MECH 6610/6616 MECHANICAL VIBRATION (3).** LEC. 3. Modeling of lumped dynamic systems, free and forced vibration of single degree of freedom systems, response to arbitrary excitation, analysis of two and multiple degrees of freedom systems.
- MECH 6620/6626 STABILITY AND VIBRATION OF DISCRETE SYSTEMS (3).** LEC. 3. Pr., MECH 6610 Principles of advanced dynamics, linear systems with multiple degrees of freedom, stability and boundedness, free and forced response of linear systems, parameter identification.
- MECH 6710/6716 KINEMATICS AND DYNAMICS OF ROBOTS (3).** LEC. 3. Basic concepts in robotics such as kinematics analysis, coordinate, Lagrange and Newton Euler equations of motion.
- MECH 6720/6726 CONTROL OF ROBOTIC MOTION (3).** LEC. 3. Application of various algorithms for robot manipulators.
- MECH 6810/6816 MECHATRONICS (3).** LEC. 3. Introduction to the integration of mechanisms, sensors, controllers and actuators for machines and design of automatic machinery.
- MECH 6820/6826 INTRODUCTION TO OPTIMAL SYSTEMS (3).** LEC. 3. Introduction to the mathematical fundamentals of optimization. Application to multiple solution engineering problems in thermo-fluid and mechanical systems.
- MECH 6930/6936 INTERMEDIATE DIRECTED STUDIES IN MECHANICAL ENGINEERING (1-3).** LEC. Individual or small group study of an advanced, specialized area of Mechanical Engineering under faculty direction. Departmental approval. Course may be repeated for a maximum of 3 credit hours.
- MECH 6970/6976 INTERMEDIATE SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3).** LEC. Regular course addressing an advanced specialized area of Mechanical Engineering not covered by a regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 3 credit hours.
- MECH 7010/7016 ADVANCED THERMODYNAMICS (3).** LEC. 3. Classical and statistical treatment of the laws and properties of thermodynamic systems; applications.
- MECH 7110/7116 ADVANCED FLUID MECHANICS I (3).** LEC. 3. Mass Conservation, Linear and Angular Momentum Equations; Energy Equation for Fluid Systems; Foundations of Inviscid Flows.
- MECH 7120/7126 ADVANCED FLUID MECHANICS II (3).** LEC. 3. Pr., MECH 7110 or MECH 7116. Schwarz-Christoffel Transformation; Hodograph Method; Three-Dimensional Potential Flows; Interface Waves; Low Reynolds Number Solutions; Oseen Approximation; Stability of Laminar Flows.
- MECH 7130/7136 BOUNDARY LAYER THEORY (3).** LEC. 3. Pr., MECH 7110 or MECH 7116. Mass Conservation; Momentum Equation; Energy Equation; Dimensional Analysis; Fully-Developed Laminar Flows; Similarity Solutions; Boundary layer Approximation; Stability of Laminar Flows.
- MECH 7140/7146 TURBULENCE (3).** LEC. 3. Pr., MECH 7130 or MECH 7136. Properties of Turbulence; Governing Conservation, Momentum and Energy Equations; Time-averaging, Vorticity Equation; Turbulence Models; Shear Flows; Jets, Wakes and Boundary Layers; Experimental Techniques.
- MECH 7150/7156 FLUID MECHANICS OF PROCESSING (3).** LEC. 3. Pr., MECH 7130 or MECH 7136. Properties of Fluids; Governing Equations; Dimensional analysis; Particle-Laden Flows; Applications to specific processing problems such as liquid metal flows, polymers, surface deposition.
- MECH 7210/7216 DIFFUSIVE TRANSPORT (3).** LEC. 3. Formulations and analytical solutions of steady, periodic, and unsteady heat and mass diffusion problems in one, two, and three dimensions.
- MECH 7220/7226 CONVECTION HEAT TRANSFER (3).** LEC. 3. Advanced topics in free and forced convection transport within the laminar, transitional and turbulent regimes; confined and external flows.
- MECH 7230/7236 THERMAL RADIATION (3).** LEC. 3. Fundamentals of thermal radiation heat transfer including: absorption, emission, and reflection from solids; absorption, emission, and scattering by gases; combined mode and conjugate heat transfer; exact and approximate solution methodologies.
- MECH 7240/7246 NUMERICAL METHODS IN HEAT TRANSFER (3).** LEC. 3. Advanced topics in finite element and finite difference methods; solution techniques, stability and convergence.
- MECH 7250/7256 BOILING AND CONDENSATION (3).** LEC. 3. Hydrodynamics of vapor-liquid flow, pool boiling, forced convective boiling, condensation, instabilities in two-phase systems, augmentation of boiling and condensation.
- MECH 7300/7306 FRACTURE MECHANICS (3).** LEC. 3. Stress and strain analysis of cracked bodies, energy release rate, Griffith problem, modes of fracture, crack tip fields, stress intensity factors, small scale crack tip yielding, the J-integral, HRR equations, experimental and numerical methods for fracture parameter estimation.
- MECH 7310/7316 SOLID MECHANICS (3).** LEC. 3. Stress and strain analysis in 3-D, constitutive behavior of elastic solids, orthotropy and isotropy, stress compatibility equations, Navier's equation, stress functions, applications.
- MECH 7320/7326 CONTINUUM MECHANICS AND TENSOR ANALYSIS (3).** LEC. 3. MECH 6300 or MECH 6306. Cartesian and curvilinear tensor analysis with applications to the mechanics of continuous media. Constitutive equations for solids and fluids.
- MECH 7330/7336 EXPERIMENTAL MECHANICS (3).** LEC. 3. Experimental methods for measurement of stress, strain and displacement. Strain gauges, transducers and brittle coatings. Transmission photoelasticity and photoelastic coatings. Introduction to moiré and coherent optical techniques.
- MECH 7340/7346 INELASTIC STRESS ANALYSIS (3).** LEC. 3. Pr., MECH 6300 or MECH 6306. Introduction to modeling material behavior of non-elastic materials. Theories of plasticity, linear and non-linear viscoelasticity, and viscoplasticity. Applications to modern engineering materials and simple structural members.
- MECH 7360/7366 MECHANICS OF COMPOSITE MATERIALS (3).** LEC. 3. Properties and mechanical behavior of fiber-reinforced composite materials. Anisotropic stress-strain relations, orthotropic elasticity and laminated plate theories, failure criteria, applications.
- MECH 7370/7376 ANALYSIS OF PLATES AND SHELLS (3).** LEC. 3. Theories for the bending and stretching of plate and shell structures. Transverse loading, buckling, vibration, and thermal stress problems. Introduction to energy methods, numerical techniques, and large deflection theories.
- MECH 7390/7396 VARIATIONAL MECHANICS (3).** LEC. 3. Energy methods in solid mechanics. Virtual work, stationary potential energy, and variational calculus. Elastic strain energy. Applications to bars, trusses, beams, frames, and plates. Castigliano's Theorem and the Ritz Method.
- MECH 7410/7416 OPTICAL METHODS IN MECHANICS (3).** LEC. 3. Measurement of stresses, strains, and deformations using optical methods; optical interference; Fourier optics; optical spatial filtering, white light methods; coherent optical methods.
- MECH 7430/7436 OPTICAL PROPERTIES OF ADVANCED MATERIALS (3).** LEC. 3. MECH 6430 or MECH 6436 or PHYS 7200. Linear and nonlinear optical properties, correlation with material-structure, electro-optic effects, lasers, frequency conversion, fiber-optics, technological applications.
- MECH 7510/7516 ADVANCED ENGINEERING ACOUSTICS (3).** LEC. 3. Pr., MECH 6510 or MECH 6516. The fundamentals of advanced acoustics theory. Wave equation derivation from Navier-Stokes equations, spherical waves, monopoles, dipoles, quadrupoles. Duct Acoustics, Statistical Energy Analysis.
- MECH 7610/7616 ADVANCED DYNAMICS (3).** LEC. 3. Dynamics of particles and systems of particles applied to engineering problems. Work-energy and impulse-momentum principles. Lagrange's equations and Hamilton's Principle.
- MECH 7620/7626 NONLINEAR SYSTEMS (3).** LEC. 3. Introduction, geometrical concepts, analytical methods, Poincaré maps, strange attractors, bifurcation, normal forms, center manifold theory, Liapunov stability, Liapunov exponents, linearization about periodic orbits, Floquet theory, bifurcation analysis.
- MECH 7630/7636 MECHANICAL IMPACT (3).** LEC. 3. Investigation of the fundamental concepts used to solve collision problems with friction. Departmental approval.
- MECH 7640/7646 STABILITY AND VIBRATION OF CONTINUOUS SYSTEMS (3).** LEC. 3. Pr., MECH 6610 or MECH 6616. Review of linear systems with multiple degrees of freedom, vibration of strings, beams, membranes and plates. Stability of columns, panels and plates. Galerkin and normal mode solutions, Liapunov methods for continuous systems.
- MECH 7650/7656 RANDOM VIBRATION (3).** LEC. 3. Pr., MECH 6610 or MECH 6616. Properties of random processes, review of linear systems with single and multiple degrees of freedom. Vibration of single and multiple degrees of freedom systems subjected to random excitations, design of structures subjected to random excitation. Parameter estimation.

**Marketing (MKTG)**

Dr. Rajan Natarajan – 844-2450

**MECH 7710/7716 CONTROL SYSTEMS ANALYSIS AND DESIGN (3).** LEC. 3. Topics from control theory are introduced in the context of control systems analysis and design, including state variable feedback, modal control, optimal control and adaptive control for both continuous and discrete systems.

**MECH 7930 ADVANCED DIRECTED STUDIES IN MECHANICAL ENGINEERING (1-3).** IND. Individual or small group study of an advanced, specialized area of Mechanical Engineering under faculty direction. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**MECH 7950 GRADUATE SEMINAR (1).** SEM. 1. SU. Topics may vary. Will not fulfill degree requirements. Course may be repeated with change in topic.

**MECH 7970/7976 ADVANCED SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3).** LEC. Regular course addressing an advanced specialized area of Mechanical Engineering not covered by regularly offered course. Topics may vary. Course may be repeated with change in topic. ADDITIONAL PREREQUISITES; Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**MECH 7990 RESEARCH AND THESIS (1-12).** MST. Individual Master's thesis research. May be repeated for credit. Course may be repeated with change in topics.

**MECH 8990 RESEARCH AND DISSERTATION (1-12).** DSR. Individual Doctoral dissertation research. May be repeated for credit. Course may be repeated with change in topics.

**Military Science (MILS)**

Lt. Col. Jon K. Segars - 844-5656

**MILS 1010 INTRODUCTION TO ARMY ROTC I (1).** LEC. 1. Introduction to the Reserve Officer Training Corps and the US Army.

**MILS 1011 INTRODUCTION TO ARMY ROTC I LABORATORY (1).** LAB. 3. Introduction to the Reserve Officer Training Corps and the US Army.

**MILS 1020 INTRODUCTION TO ARMY ROTC II (1).** LEC. 1. Introduction to the Reserve Officer Training Corps and the U.S. Army.

**MILS 1021 INTRODUCTION TO ARMY ROTC II LABORATORY (1).** LAB. 3. Coreq., MILS 1020. Introduction to the Reserve Officer Training Corps and the U.S. Army.

**MILS 2010 SELF TEAM DEVELOPMENT (1).** LEC. 1. Learn and apply ethics-based leadership skills that develop individual attributes and contribute to effective team building.

**MILS 2011 SELF/TEAM DEVELOPMENT LABORATORY (1).** LAB. 2. Coreq., MILS 2010. Learn and apply ethics-based leadership skills that develop individual attributes and contribute to effective team building.

**MILS 2020 INDIVIDUAL/TEAM MILITARY TACTICS (1).** LEC. 1. Introduction to individual and team aspects of military training in small unit operations.

**MILS 2021 INDIVIDUAL/TEAM MILITARY TACTICS LABORATORY (1).** LAB. 2. Introduction to individual and team aspects of military training in small unit operations.

**MILS 3010 LEADING SMALL ORGANIZATIONS I (2).** LEC. 2. Coreq., MILS 3011 Introduction to squad level planning and operations. Admittance into the Advanced Course of Army ROTC.

**MILS 3011 LEADING SMALL ORGANIZATIONS I LABORATORY (1).** LAB. 4. Practical application of the foundational skills of small unit leadership. Admittance into Advanced Course Army ROTC.

**MILS 3020 LEADING SMALL ORGANIZATIONS II (2).** LEC. 2. Pr., MILS 3010 and MILS 3011. Coreq., MILS 3021. Introduction to platoon-level planning and operations and the U.S. Army Training Management System.

**MILS 3021 LEADING SMALL ORGANIZATIONS II LABORATORY (1).** LAB. 4. Pr., MILS 3010 and MILS 3011. Series of practical opportunities to lead small groups, receive performance assessments and coaching, and lead again in situations of increasing complexity.

**MILS 4010 LEADERSHIP CHALLENGES AND GOAL-SETTING (2).** LEC. 2. Pr., MILS 3020 and MILS 3021. Plan, conduct and evaluate training and organizational cohesion.

**MILS 4011 LEADERSHIP CHALLENGES AND GOAL-SETTING LABORATORY (1).** LAB. 4. Pr., MILS 3020 and MILS 3021 Plan, conduct and evaluate training and activities of the ROTC cadet organization.

**MILS 4020 TRANSITION TO LIEUTENANT I (2).** LEC. 2. Pr., MILS 4010 and MILS 4011. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques.

**MILS 4021 TRANSITION TO LIEUTENANT I LABORATORY (1).** LAB. 4. Pr., MILS 4010 and MILS 4011. Coreq., MILS 4020. Practical application of the principles taught in MILS 4020.

**MILS 4040 THE ARMY PROFESSION (0).** LEC. 1. SU. U.S. Army current trends and affairs. Army policies and programs. Completion of Army ROTC Advanced Course or Early Commissioning Program.

**MKTG 3310 PRINCIPLES OF MARKETING (3).** LEC. 3. ECON 2020. Study of functions, institutions, and basic problems in marketing of goods and services in a global economy. Credit will not be given for both MKTG 3310 and MKTG 3810. Junior standing.

**MKTG 3317 HONORS PRINCIPLES OF MARKETING (3).** LEC. 3. Pr., Honors College. ECON 2027. Study of functions, institutions, and basic problems of marketing goods and services in a global economy.

**MKTG 3410 CONSUMER BEHAVIOR (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Analysis of the buying process as it is affected by environmental and institutional forces. Credit will not be given for both CAHS 3800 and MKTG 3410. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 3810 FOUNDATIONS OF BUSINESS MARKETING (3).** LEC. 3. Foundations of Business Marketing is a broad based introductory course that will focus on marketing functions and applications of marketing principles. This course is not open to undergraduates majoring in business.

**MKTG 4320 PROMOTION STRATEGY (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Examination of promotional objectives, strategy and tactics in marketing. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4330 RETAIL MANAGEMENT (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Principles of retail operation: facility location, layout, purchasing, pricing and merchandise control. Credit will not be given for more than one of the following: MKTG 4330, CAHS 5610, and CAHS 6610. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4350 SERVICES MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Examination of marketing in service industries and implementation of service marketing strategies. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4360 MARKETING RESEARCH (3).** LEC. 3. Pr., MKTG 3410 and STAT 2610. Research methods in marketing and their application to marketing problems. (MKTG 3410 or STAT 2610 require a grade of C or better).

**MKTG 4370 SALES MANAGEMENT (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Principles and practices of organization and administration of sales organizations. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4380 MARKETING CHANNEL SYSTEMS (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Designing channels of distribution: Objectives, constraints, and alternatives: Motivating, evaluating and controlling channel members. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4390 PERSONAL SELLING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Selling strategy as an interdisciplinary business activity. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4400 INTERNATIONAL MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Strategy, policy and the variables affecting international marketing decisions. Credit will not be given for more than one of the following: MKTG 4400, CAHS 5610, and CAHS 6610. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4500 MARKETING ON THE INTERNET (3).** LEC. 3. Pr., MKTG 3310 and COMP 1000. Use of electronic media and the Internet for marketing strategy. Or passing the University IT exam. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4600 GREEN MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Marketing viewed from an environmental protection perspective and resulting green market strategies. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4700 REAL ESTATE MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Selling strategy for real property, brokerage, management and marketing of real estate. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4900 DIRECTED STUDIES (3).** IND. 3. SU. Pr., MKTG 3310 or MKTG 3317. Provides a relevant and meaningful learning experience offering advanced research, reading and study in marketing. Departmental approval. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4920 MARKETING STUDENT INTERNSHIP PROGRAM (3).** AAB/INT. 3. SU. Pr., MKTG 3310 or MKTG 3317. Provides a relevant and meaningful work experience in a marketing or marketing-related business, industry or organization. Departmental approval. (MKTG 3310 or MKTG 3317 require a grade of C or better).

**MKTG 4980 MARKETING STRATEGY (3).** LEC. 3. Pr., MKTG 4360. Strategic perspectives of market dynamics in different competitive environments across organizational levels. 6 hours of marketing electives. (MKTG 4360 requires a grade of C or better).

**MKTG 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. MKTG 3310 or MKTG 3317. Provides honor's students with the opportunity to conduct in-depth research. Thesis/research topics will be based on mutual agreement between committee and student. Departmental approval and Course may be repeated for a maximum of 3 credit hours. (MKTG 3310 or MKTG 3317 require a grade of C or better).

## Management (MNGT)

**MKTG 7050/7056 SOCIAL AND LEGAL ENVIRONMENT OF MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. The influence of the social, legal, political, and economic environments on marketing operations. Departmental approval.

**MKTG 7310/7316 MARKETING MANAGEMENT (3).** LEC. 3. Pr., (BUSI 7110 or BUSI 7716) and BUSI 7120. In-depth analysis of concepts and techniques pertinent to executive decision-making in marketing. Departmental approval.

**MKTG 7320/7326 ADVERTISING AND PROMOTION STRATEGY (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Managerial perspective of the marketing communication process. Departmental approval.

**MKTG 7350/7356 SERVICES MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Examination of marketing in service industries and implementation of service marketing strategies. Departmental approval.

**MKTG 7360/7366 MARKETING RESEARCH: METHODOLOGY AND APPLICATIONS (3).** LEC. 3. Pr., (MNGT 6040 or MNGT 6046) and (MKTG 3310 or MKTG 3317). Marketing research design, implementation and data analysis for marketing managers. Departmental approval.

**MKTG 7370/7376 SALES MANAGEMENT (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. In-depth study of sales management strategy and tactics. Departmental approval.

**MKTG 7390/7396 DATA BASE, DIRECT MARKETING AND SALES PROMOTION (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Fundamental concepts, tools and applications of data base, direct marketing and sales promotion to marketing problems. Departmental approval.

**MKTG 7400/7406 GLOBAL MARKETING AND DISTRIBUTION (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. A strategic managerial perspective of global marketing and distribution operations. Departmental approval.

**MKTG 7410/7416 ANALYSIS OF CONSUMER BEHAVIOR (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Psychological, sociological, and anthropological foundation of consumer and industrial purchase behavior and their application to marketing decisions. Departmental approval.

**MKTG 7500/7506 ELECTRONIC MARKETING (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Ethical and strategic use of electronic media and the Internet for marketing communications and strategy. Departmental approval.

**MKTG 7600/7606 ENVIRONMENTALLY CONSCIOUS MARKETING MANAGEMENT (3).** LEC. 3. Pr., STAT 2610 and (MKTG 3310 or MKTG 3317). Advanced marketing strategies with an environmental focus. Departmental approval.

**MKTG 7720/7726 NEW PRODUCTS DEVELOPMENT AND MANAGEMENT (3).** LEC. 3. Pr., MKTG 3310 or MKTG 3317. Marketing in the process of developing innovative products and services. Departmental approval.

**MKTG 7940 INTERNATIONAL MARKETING ABROAD PROGRAM (3-6).** FLD. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**MKTG 7970/7976 SPECIAL STUDIES IN MARKETING (3).** LEC. 3. Variable content in the marketing area. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**MKTG 7990 RESEARCH AND THESIS (1-10).** MST. Departmental approval. Course may be repeated with change in topics.

## Management (MNGT)

Dr. Sharon Oswald - 844-4071

**MNGT 2010 INTRODUCTION TO DC ELECTRICITY AND CIRCUITS FOR MANAGERS (3).** LEC. 1, LAB. 2. Foundational knowledge of basic DC electronics and circuit theory from a managerial perspective.

**MNGT 2020 INTRODUCTION TO AC POWER AND CIRCUITS FOR MANAGERS (3).** LEC. 1, LAB. 2. Coreq., MNGT 2010.

**MNGT 2600 BUSINESS ANALYTICS I (3).** LEC. 3. Pr., MATH 1680 and P/C, COMP 1000. Introduction to analytics in business including use of data to make business decisions, basic predictive business modeling, and communication of analytical results.

**MNGT 3010 SOLID STATE ELECTRONICS AND DIGITAL LOGIC FOR MANAGERS (3).** LEC. 1, LAB. 2. Pr., MNGT 2010 and MNGT 2020. Students will learn the industrial applications of solid state and digit logic from a managerial perspective.

**MNGT 3100 PRINCIPLES OF MANAGEMENT (3).** LEC. 3. Management functions and the applications of management principles in organization.

**MNGT 3107 HONORS PRINCIPLES OF MANAGEMENT (3).** LEC. 3. Pr., Honors College. Management functions and the applications of management principles in organization. Fall, Spring.

**MNGT 3460 ORGANIZATIONAL BEHAVIOR (3).** LEC. 3. Pr., P/C, MNGT 3100. Study, analysis and application of theories and techniques for understanding, predicting and managing human behavior in the organizational context.

**MNGT 3600 BUSINESS ANALYTICS II (3).** LEC. 3. Pr., MNGT 2600 or STAT 2600. Further examination of analytics in business including business inference, business classification analysis, predictive business modeling, forecasting, introduction to data mining.

**MNGT 3810 MANAGEMENT FOUNDATIONS (3).** LEC. 3. Management Foundations is a broad based introductory course that will focus on management functions and applications of management principles. This course is not open to undergraduates majoring in business.

**MNGT 3970 GLOBAL PERSPECTIVES IN BUSINESS IN SPAIN (6).** LEC. 6. SU. The objective of the course is to learn about business in Spain by immersing the student totally into the Spain language and culture. Course may be repeated for a maximum of 12 credit hours.

**MNGT 4010 TECHNICAL SYSTEMS STUDIO FOR MANAGERS (6).** LEC. 2, LAB. 4. Pr., MNGT 2010 and MNGT 2020 and MNGT 3010. The studio is an experiential workshop designed to help students comprehend foundational knowledge needed to understand practical technical systems applications in a realistic industry context. 2.2 GPA.

**MNGT 4100 MANAGEMENT IN GLOBAL BUSINESS ENVIRONMENT (3).** LEC. 3. Pr., MNGT 3100 or MNGT 3107. Issues unique to managing operations in the global business environment.

**MNGT 4400 ORGANIZATIONAL CHANGE (3).** LEC. 3. Pr., MNGT 3100. The complexities involved in implementing change in organizations.

**MNGT 4600 COMMUNITY SERVICE PROJECT (1).** LEC. 1. Application of applying business principles to applications learned from working with actual businesses/ community issues.

**MNGT 4610 INTERNATIONAL FIELD ANALYSIS PROJECT COURSE (3).** LEC. 3. Field analysis team projects with local or multinational organizations in a foreign county. Course will be taught in conjunction with COB International Studies Programs.

**MNGT 4690 ETHICAL ISSUE IN MANAGEMENT (3).** LEC. 3. Pr., MNGT 3100 and FINC 3610. The course is designed to help students gain a better understanding of how ethical dilemmas can impact managerial decisions.

**MNGT 4800 STRATEGIC MANAGEMENT (3).** LEC. 3. Pr., MKTG 3310, MNGT 3100, FINC 3610. Objectives, strategy, and policies pertaining to a total organization. Problem-solving and the relationship between the functional areas of an organization. College of Business Information Technology requirement.

**MNGT 4807 HONORS STRATEGIC MANAGEMENT (3).** LEC. 3. Pr., Honors College. FINC 3617 and MKTG 3317 and MNGT 3107. Objectives, strategy, and policies pertaining to a total organization. Problem-solving and the relationship between the functional areas of an organization.

**MNGT 4890 STRATEGIC ENVIRONMENTAL MANAGEMENT (3).** LEC. 3. Pr., MNGT 3100 or MNGT 3107. Course will examine the continuous relationship between the natural environment, strategy, and competitive advantage from both a domestic and international perspective. 2.

**MNGT 4920 INTERNSHIP (1-6).** AAB/INT. SU. Pr., MNGT 3100. GPA 2.5. Approval by departmental intern program committee. Course may be repeated for a maximum of 6 credit hours.

**MNGT 4950 SEMINAR IN MANAGEMENT (1-10).** AAB/SEM. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**MNGT 4967 HONORS READING (1-3).** LEC. Pr., Honors College. Directed readings on a topic of special interest. Course may be repeated for a maximum of 3 credit hours.

**MNGT 4997 HONORS THESIS (1-3).** LEC. Pr., Honors College. Directed honors thesis research. Course may be repeated for a maximum of 3 credit hours.

**MNGT 5560 LEADERSHIP (3).** LEC. 3. Facilitates the understanding of leadership and allows student to examine their own leadership behaviors. 2.2 GPA.

**MNGT 5900 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

**MNGT 5960 READINGS IN MANAGEMENT (1-3).** AAB/IND. Independent study investigating current literature in management. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**MNGT 6300/6306 THE BUSINESS OF SPORTS (3).** LEC. 3. STAT 2610 and (MNGT 3100 or MNGT 3910) and ECON 2020. Business aspects of sports teams including sources of revenue, labor market, revenue sharing, salary cap and free agency.

**MNGT 6350/6356 COMPETITIVE SERVICE ENTERPRISES (3).** LEC. 3. Pr., BUSI 7220. Provides MBA students with a working model of service operations and lets them explore how information technology can be used to re-engineer the service process.

**MNGT 6560 LEADERSHIP (3).** LEC. 3. Facilitates the understanding of leadership and allows student to examine their own leadership behaviors.

**MNGT 6900/6906 SPECIAL PROBLEMS (1-3).** IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**MNGT 6960/6966 SPECIAL PROBLEMS (1-3).** AAB/IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

## Management (MNGT)

**MNGT 7150/7156 MANAGING ORGANIZATIONAL CHANGE (3).** LEC. 3. Advanced study of organizational behavior in individual and group interactions within the environment of business organizations. Departmental approval.

**MNGT 7160/7166 STRATEGIC MANAGEMENT OF INNOVATION AND TECHNOLOGY (3).** LEC. 3. Development of competitive advantages in high-technology businesses. Examines product/service innovation and technology development and commercialization strategies, and related issues and processes.

**MNGT 7420/7426 SEMINAR IN ORGANIZATION CHANGE (3).** SEM. 3. Pr., MNGT 7150. The diagnostic and evaluation issues in organizational change.

**MNGT 7720/7726 OPERATIONS AND TECHNOLOGY STRATEGY (3).** LEC. 3. Pr., P/C, BUSI 7220. Development of upper management decision skills for developing and implementing manufacturing and technology strategies through case analyses and a field project.

**MNGT 7810/7816 STRUCTURED DECISION MAKING (3).** LEC. 3. Pr., BUSI 7120. Introduction to business-decision structuring and aiding, including multiple criteria and group-decision making methodology. BUSI 7120 or equivalent.

**MNGT 7970 SEMINAR IN MANAGEMENT (3).** LEC. 3. Current topics in management. Departmental approval.

**MNGT 8010 MIS RESEARCH SEMINAR I (3).** SEM. 3. Preparation in conceptualization, conduct, and presentation of MIS research. Departmental approval.

**MNGT 8020 MIS RESEARCH SEMINAR II (3).** SEM. 3. Preparation in conceptualization, conduct, and presentation of applied and case studies research in MIS. Departmental approval.

**MNGT 8030 RESEARCH METHODS IN MANAGEMENT I (3).** LEC. 3. Pr., MNGT 8400. Research methodologies used in conducting research with emphasis on empirical organizational behavior research methods. A graduate-level course taken in major field, and working knowledge of SPSS or SAS.

**MNGT 8040 RESEARCH METHODS IN MANAGEMENT III (3).** LEC. 3. Pr., MNGT 8030. Development of research skills and experience in writing an empirical research article based on research proposal developed in MNGT 8030.

**MNGT 8300 SEMINAR IN ADVANCED ORGANIZATION THEORY (3).** LEC. 3. Advanced study of theories and research in organization theory. Departmental approval.

**MNGT 8310 SEMINAR IN ADVANCED ORGANIZATIONAL BEHAVIOR (3).** LEC. 3. Advanced study of theories and research in organizational behavior. Overarching organizational behavior paradigms and theoretical perspectives and research findings at the individual and group levels of analysis. Departmental approval.

**MNGT 8320 SEMINAR IN STRATEGY IMPLEMENTATION (3).** LEC. 3. Review of the major theoretical perspectives and the empirical literature supporting the research field of strategic management with an emphasis on strategy implementation. Departmental approval.

**MNGT 8330 SEMINAR IN STRATEGY FORMULATION (3).** LEC. 3. Review of the major theoretical perspectives and the empirical literature supporting the research field of strategic management with an emphasis on strategy formulation. Departmental approval.

**MNGT 8400 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT I (4).** LEC. 3, LAB. 1. Pr., STAT 7000. Study of the application of linear regression analysis to business research. First advanced course in applied linear statistics models. STAT 7000 or approved equivalent.

**MNGT 8410 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT II (3).** LEC. 3. Pr., MNGT 8400. Introduction to multivariate techniques in business research. Study of the theory and applications of ANOVA, ANCOVA, MANOVA, MANCOVE, Discriminate Analysis & Polytomous Logistic Regression. Departmental approval.

**MNGT 8420 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT III (3).** LEC. 3. Pr., STAT 7000 and MNGT 8400 and MNGT 8410. Third course in statistical modeling. Emphasis on applications of Principal Components Analysis, and Structural Equation Modeling to management research. STAT 7100, MNGT 8400, MNGT 8410 or approved equivalents.

**MNGT 8500 ADVANCED MITI RESEARCH SEMINAR I (3).** SEM. 3. Theoretical foundations and research directions in the management of technology and technological innovation, with the primary focus on information technology and research. Departmental approval.

**MNGT 8660 ADVANCED MITI RESEARCH SEMINAR II (3).** LEC. 3. Theoretical foundations and research directions in the alignment of information technology strategy to business objectives and goals. Departmental approval.

**MNGT 8700 SEMINAR IN ADVANCED HUMAN RESOURCE MANAGEMENT (3).** LEC. 3. Examination of empirical issues and technical considerations pertaining to the human resource management function in organizations. Departmental approval.

**MNGT 8740 COMPENSATION THEORY (3).** LEC. 3. An examination of compensation theory, design technology, and research methodologies used in developing and analyzing compensation systems.

**MNGT 8800 APPRAISAL AND DEVELOPMENT OF HUMAN RESOURCES (3).** LEC. 3. Examination of empirical issues pertaining to the performance appraisal and human resource development functions of organizations. Departmental approval.

**MNGT 8820 ORGANIZATIONAL CHANGE RESEARCH METHODS (3).** LEC. 3. Pr., MNGT 7150. The study and application of research methods to conduct organizational diagnoses and to assess organizational effectiveness. Special emphasis is placed on qualitative methods.

**MNGT 8850 ADVANCED HUMAN RESOURCE SELECTION (3).** LEC. 3. Pr., MNGT 7080. Study of the technical considerations involved in the implementation of employee selection programs. Departmental approval; graduate statistics course.

**MNGT 8960 DOCTORAL SEMINAR IN MANAGEMENT I (3).** LEC. 3. Foundation course for PhDs in Management. Examination of books and writings that introduced today's management language and theory. Departmental approval.

**MNGT 8970 DOCTORAL SEMINAR IN MANAGEMENT II (3).** SEM. 3. Seminar on current literature relating to research methodology, and current perspectives of strategy, organization, change, leadership, knowledge management, and future direction for research. Departmental approval.

**MNGT 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Departmental approval. Course may be repeated with change in topics.

### ENTREPRENEURSHIP AND FAMILY BUSINESS (ENFB)

Dr. David Ketchen - 844-4071

**ENFB 4140 ESSENTIALS OF ENTREPRENEURSHIP (3).** LEC. 3. Pr., MNGT 3100 and MKTG 3310 and FINC 3610 and ECON 2030. The application of basic business principles to the entrepreneurial environment.

**ENFB 4160 FAMILY BUSINESS MANAGEMENT (3).** LEC. 3. Pr., MNGT 3100 or MNGT 3107. Coreq., ENFB 4140 and MNGT 4140. Study of aspects of managing an established family business, on a day-to-day basis, and of planning for succession to the next generation.

**ENFB 4170 MANAGING ENTREPRENEURIAL START-UPS (3).** LEC. 3. Pr., MNGT 3100 and (P/C, ENFB 4140 or P/C, MNGT 4140). Study of aspects of managing and marketing concepts and processes that can be utilized to launch new ventures or anew division within an existing business.

**ENFB 4180 GROWTH STRATEGIES FOR EMERGING COMPANIES (3).** LEC. 3. Pr., MNGT 4140 or ENFB 4140. Study of the important aspects of starting and managing a franchise business.

**ENFB 4190 NEW VENTURE CREATION (3).** LEC. 3. Pr., (MNGT 4140 or ENFB 4140). Analysis of industrial, competitive, market and financial aspects of starting a business. 2.2 GPA,

**ENFB 4200 BUSINESS PLAN FOR THE NEW VENTURE (3).** LEC. 3. Pr., MNGT 4140 or ENFB 4140. Application of entire business education and experience to a practical, hands-on project.

**ENFB 4210 CORPORATE VENTURING-ENTREPRENEURS IN ORGANIZATIONS (3).** LEC. 3. Pr., (MNGT 4140 or ENFB 4140) and (MNGT 4190 or ENFB 4190). Study of the entrepreneurial process as it applies to the operations of a department or functional area within an established organization.

**ENFB 4920 INTERNSHIP (1-6).** INT. SU. Approval by departmental intern program committee; 2.5 GPA required. Course may be repeated for a maximum of 6 credit hours.

**ENFB 4950 SEMINAR IN ENTREPRENEURSHIP AND FAMILY BUSINESS (1-10).** SEM. Course may be repeated for a maximum of 10 credit hours.

**ENFB 5900 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

**ENFB 5960 SPECIAL PROBLEMS (1-3).** IND. Independent study investigating current literature in management. Course may be repeated for a maximum of 6 credit hours.

**ENFB 6900/6906 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ENFB 6960/6966 SPECIAL TOPICS (3).** IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

### HUMAN RESOURCE MANAGEMENT (HRMN)

Dr. William Giles - 844-6528

**HRMN 3420 HUMAN RESOURCE MANAGEMENT (3).** LEC. 3. Pr., P/C, MNGT 3100. Management of human resources dealing with selection, training, placement, appraisal, compensation, and employee representation.

**HRMN 4430 LABOR RELATIONS (3).** LEC. 3. General survey of the development of collective bargaining, major provisions of labor law, and bargaining issues of craft and industrial unions.

Information Systems Management (ISMN)

Dr. Nelson Ford - 844-6503

**HRMN 4920 INTERNSHIP (1-6).** INT. SU. Approval by departmental intern program committee; 2.5 GPA. Course may be repeated for a maximum of 6 credit hours.

**HRMN 4950 SEMINAR IN HUMAN RESOURCE MANAGEMENT (1-10).** SEM. Course may be repeated for a maximum of 10 credit hours.

**HRMN 5460 HUMAN RESOURCE LEGISLATION (3).** LEC. 3. Pr., MNGT 3420 or HRMN 3420. Legislation that impacts the management of human resources within the organization.

**HRMN 5470 EMPLOYEE COMPENSATION (3).** LEC. 3. Pr., MNGT 3420 or HRMN 3420. Modern compensation systems, strategic planning, wage and salary management, benefits administration and pay incentive development

**HRMN 5480 LABOR RELATIONS LAW (3).** LEC. 3. Legal principles and issues under the Labor Management Relations Act and related laws. Case problem analysis.

**HRMN 5510 HUMAN RESOURCE PLANNING, DEVELOPMENT, AND APPRAISAL (3).** LEC. 3. Pr., MNGT 3420 or HRMN 3420. Theory, practice and design of managerial systems in these functions.

**HRMN 5520 HUMAN RESOURCES AND ORGANIZATIONAL RESEARCH (3).** LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420). Human resource problems studied through a project involving data collection, analysis and a research report.

**HRMN 5540 HUMAN RESOURCES SELECTION AND PLACEMENT (3).** LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420). A review of contemporary issues involved in administering a program for selecting employees.

**HRMN 5550 HUMAN RESOURCE INFORMATION SYSTEMS (3).** LEC. 3. Importance, nature, and application of a modern human resource information system such as SAP Human Resource Module

**HRMN 5900 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

**HRMN 5960 SPECIAL PROBLEMS (1-3).** IND. Independent study investigating current literature in management. Course may be repeated for a maximum of 6 credit hours.

**HRMN 6460/6466 HUMAN RESOURCE LEGISLATION (3).** LEC. 3. Pr., MNGT 3420 or HRMN 3420. Legislation that impacts the management of human resources within the organization.

**HRMN 6470/6476 EMPLOYEE COMPENSATION (3).** LEC. 3. Pr., MNGT 3420 or HRMN 3420. Study of the theory, procedures, techniques, and practices used to administer modern organization compensation systems.

**HRMN 6480/6486 LABOR RELATIONS LAW (3).** LEC. 3. Study of legal principles under the Labor Management Relations Act and related labor laws. Case problems and current legal issues are analyzed.

**HRMN 6510/6516 HR PLANNING DEV AND APPRAISAL (3).** LEC. 3. Pr., MNGT 3420 or HRMN 3420. Theory, practice, and design of managerial systems and these functions.

**HRMN 6520/6526 HUMAN RESOURCE AND ORGANIZATIONAL RESEARCH (3).** LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420). Study of human resource problems through a primary research project involving data collection, analysis, and written research report.

**HRMN 6540/6546 HUMAN RESOURCES SELECTION AND PLACEMENT (3).** LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420). A review of contemporary issues involved in administering a program for selecting employees.

**HRMN 6550 HUMAN RESOURCE INFORMATION SYSTEMS (3).** LEC. 3. Importance, nature, and application of a modern human resource information system such as SAP Human Resource Module.

**HRMN 6900/6906 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**HRMN 6960/6966 SPECIAL PROBLEMS (3).** IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**HRMN 7080/7086 ADVANCED HUMAN RESOURCE MANAGEMENT (3).** LEC. 3. Advanced study of the role of personnel and human resource management. Topics include employee selection, performance appraisal, compensation, training, and development.

**HRMN 7440/7446 COLLECTIVE BARGAINING & ARBITRATION (3).** LEC. 3. Evolution and development of union-management relationships and the process of collective bargaining and arbitration. Case problem analysis and current labor relations issues.

**HRMN 7990 RESEARCH AND THESIS (1-10).** MST. Research on thesis or research project. Departmental approval. Course may be repeated with change in topics.

**ISMN 3040 BUSINESS TELECOM MANAGEMENT (3).** LEC. 3. Pr., ISMN 3140 or MNGT 3140. Voice communications and technology and data communications (LAN, WAN, internet broadband), networks, protocols, standards, legislation and project development and management.

**ISMN 3070 BUSINESS COMPUTER APPLICATIONS (3).** LEC. 3. Advanced applications using object oriented, visual languages for faster development. Explores microcomputer-based languages. College of Business Information Technology requirement.

**ISMN 3080 ADVANCED PROGRAMMING AND COMPUTER APPLICATIONS (3).** LEC. 3. Pr., MNGT 3070 or ISMN 3070. Visual and object-oriented business programming languages are introduced and explored. 2.2 GPA required.

**ISMN 3140 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (2).** LEC. 2. The fundamental principles of the structure and management of information systems.

**ISMN 3830 DATABASE MANAGEMENT SYSTEMS (3).** LEC. 3. Pr., (MNGT 3070 or ISMN 3070). Business applications software in a database environment, complex data, and file structures, systems design consideration of global and distributed databases.

**ISMN 4090 ANALYSIS AND DESIGN OF BUSINESS INFORMATION SYSTEMS (3).** LEC. 3. Pr., (MNGT 3830 or ISMN 3830). General systems techniques, development methodologies, database considerations, project planning, and control, system integration.

**ISMN 4850 COMPETITIVE STRATEGIES THROUGH INFORMATION (3).** LEC. 3. Emphasizes how competitive strategies for companies are formulated and implemented using a combination of information technologies.

**ISMN 4870 DATABASE SERVER FUNDAMENTALS (3).** LEC. 3. Coreq., ISMN 3830 and MNGT 3830. Database servers as core components of developing n-Tier information technology are discussed. Practical exercise used to demonstrate the process of using SQL to manage database through data manipulation language and data definition language. Advanced database objects are introduced.

**ISMN 4880 MGT INFO SYSTEMS PROJECTS (3).** LEC. 3. Coreq., ISMN 3830 and MNGT 3830. Synthesizes theory and principles of management information systems (MIS) using real-life, hands-on-projects.

**ISMN 4920 INTERNSHIP (1-6).** AAB/INT. SU. Pr., 2.5 GPA. Approval by departmental intern program committee. Course may be repeated for a maximum of 6 credit hours.

**ISMN 4950 SEMINAR IN INFORMATION SYSTEMS MANAGEMENT (1-10).** SEM. Course may be repeated for a maximum of 10 credit hours.

**ISMN 5040 ADVANCED BUSINESS DATA COMMUNICATIONS (3).** LEC. 3. Pr., (MNGT 3140 or ISMN 3140). Experienced-based class building on domain knowledge of prerequisites; gives personal and team experience in data communications technology and networks.

**ISMN 5270 CURRENT ISSUES IN IS FOR ORGS (3).** LEC. 3. This course covers current issues in Information Systems Management and Technology. As such, topics may differ from semester to semester. The objective of the course is to allow students to become familiar with issues such as emerging technologies, information systems and their role in vertical portals, and the role of information systems in industry. Course is designed to enable students to take it twice with subject change. Course may be repeated for a maximum of 6 credit hours.

**ISMN 5280 INFORMATION SYSTEMS ARCHITECTURE IN THE SMALL-AND MEDIUM-SIZE ENTERPRISE (3).** LEC. 3. Pr., (MNGT 3040 or ISMN 3040) and (MNGT 3070 or ISMN 3070). This course is an expose' into the current business applications of open source software. The course consists of 1) A research component focusing on current trends and practices within the culture of Open Source Software as well as the current and potential impact on business and 2) a hands-on laboratory component in which students explore the application of Open Source Software as a business tool.

**ISMN 5290/5293 ADVANCED BUSINESS APPLICATION DEVELOPMENT (3).** LEC. 3. Pr., ISMN 3070

**ISMN 5370/5373 PROJECT MANAGEMENT (3).** LEC. 3. Tools and techniques of information technology project management including leading project management software.

**ISMN 5630 CLIENTSIDE INTERNET PGM (3).** LEC. 3. Fundamentals of client-side Internet programming using technologies such as HTML, JavaScript, Cascading Style Sheets, and XML.

**ISMN 5640 SERVERSIDE INTERNET PGM (3).** LEC. Fundamentals of server-side Internet programming using technologies such as PHP, MySQL, and XML.

**ISMN 5650 ADVANCED OBJECT-ORIENTED AND INTERNET PROGRAMMING (3).** LEC. 3. Pr., MNGT 3070 Fundamentals of developing object-oriented, component-based and Internet business applications.

**ISMN 5670 SECURITY AND INFORMATION ASSURANCE (3).** LEC. 3. This course covers the fundamentals of computer security and information assurance from a management perspective. The student will be exposed to security and



information assurance topics such as security policies, confidentiality, and ethics. Organizational issues of security and methodologies for information assurance will be discussed from a managerial perspective.

**ISMN 5680 ADVANCED DATA BASE ADMINISTRATION AND DEVELOPMENT (3).** LEC. 3. Pr., MNGT 3830 or ISMN 3830 Key tasks and functions required of a database administrator in a business environment.

**ISMN 5690 KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL LEARNING (3).** LEC. 3. Introduction to knowledge management and its role in organizational decision-making and learning. Studies of issues related to management, creation, and use of knowledge as well as issues related to system design and implementation.

**ISMN 5710/5713 INFORMATION RISK ANALYSIS (3).** LEC. 3. In-depth instruction on the range of skills required of persons engaged in the performance of risk analysis functions.

**ISMN 5720/5723 ELECTRONIC COMMERCE (3).** LEC. 3. A managerial and interdisciplinary investigation into the many different business activities done on the Internet including buying and selling products and services, servicing customers, collaborating with stakeholders inside and outside the organization, social networking, and learning, among others. Students will come away with a broad knowledge of electronic commerce and its implications to modern business life and social life. Credit will not be given for both ISMN 5720/5723 and ISMN 6720/6726.

**ISMN 5770 INFORMATION SYSTEMS ETHICS (3).** LEC. 3. Pr., (PHIL 1020 or PHIL 1040) and ISMN 3140. Information systems ethics, including: fundamentals; professional and user standards; and issues related to privacy, freedom of expression, intellectual property, and software development.

**ISMN 5900 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

**ISMN 5960 SPECIAL PROBLEMS (3).** IND. 3. Independent study investigating current literature in management. Course may be repeated for a maximum of 6 credit hours.

**ISMN 6040/6046 ADVANCED BUSINESS DATA COMMUNICATIONS (3).** LEC. 3. Pr., (MNGT 7120 or ISMN 7120) or (MNGT 3140 or ISMN 3140). Experienced-based class building on domain knowledge of prerequisites; gives personal and team experience in data communications technology and networks.

**ISMN 6270/6276 CURRENT ISSUES IN INFORMATION SYSTEMS FOR ORGANIZATIONS (3).** LEC. 3. This course covers current issues in Information Systems Management and Technology. As such, topics may differ from semester to semester. The objective of the course is to allow students to become familiar with issues such as emerging technologies, information systems and their role in vertical portals, and the role of information systems in industry. Course is designed to enable students to take it twice with subject change. Course may be repeated for a maximum of 6 credit hours.

**ISMN 6280/6286 INFORMATION SYSTEMS ARCHITECTURE IN THE SMALL LAND MEDIUM-SIZE ENTERPRISE (3).** LEC. 3. Pr., (MNGT 3040 or ISMN 3040) and (MNGT 3070 or ISMN 3070). This course is an expose' into the current business applications of open source software. The course consists of 1) A research component focusing on current trends and practices within the culture of Open Source Software as well as the current and potential impact on business and 2) a hands-on laboratory component in which students explore the application of Open Source Software as a business tool. Or equivalent courses at the graduate level.

**ISMN 6290/6296 ADVANCED PROGRAMMING APPLICATION DEVELOPMENT (3).** LEC. 3. Department approval. Programming languages and skills, with emphasis on designing and implementing computer-based business solutions.

**ISMN 6370/6376 PROJECT MANAGEMENT (3).** LEC. 3. Tools and techniques of information technology project management including leading project management software.

**ISMN 6630/6636 CLIENTSIDE INTERNET PGM (3).** LEC. 3. Fundamentals of client-side Internet programming using technologies such as HTML, JavaScript, Cascading Style Sheets, and XML.

**ISMN 6640/6646 SERVERSIDE INTERNET PGM (3).** LEC. 3. Fundamentals of server-side Internet programming using technologies such as PHP, MySQL, and XML.

**ISMN 6650/6656 ADVANCED OBJECT-ORIENTED AND INTERNET PROGRAMMING (3).** LEC. 3. Pr., MNGT 3070. Fundamentals of developing object-oriented, component-based and Internet business applications.

**ISMN 6670/6676 SECURITY AND INFORMATION ASSURANCE (3).** LEC. 3. This course covers the fundamentals of computer security and information assurance from a management perspective. The student will be exposed to security and information assurance topics such as security policies, confidentiality and ethics. Organizational issues of security and methodologies for information assurance will be discussed from a managerial perspective.

**ISMN 6680/6686 ADVANCED DATA BASE ADMINISTRATION AND DEVELOPMENT (3).** LEC. 3. Pr., (MNGT 3830 or ISMN 3830) or (MNGT 7830 or ISMN 7830). Key tasks and functions required of a database administrator in a business environment.

**ISMN 6690/6696 KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL LEARNING (3).** LEC. 3. Introduction to knowledge management and its role in organizational decision-making and learning. Studies of issues related to management, creation, and use of knowledge as well as issues related to system design and implementation.

**ISMN 6710/6716 INFORMATION RISK ANALYSIS (3).** LEC. 3. In-depth instruction on the range of skills required of persons engaged in the performance of risk analysis functions. Major or minor College of Business Departmental approval.

**ISMN 6720/6726 ELECTRONIC COMMERCE (3).** LEC. 3. A managerial and interdisciplinary investigation into the many different business activities done on the Internet including buying and selling products and services, servicing customers, collaborating with stakeholders inside and outside the organization, social networking, and learning, among others. Students will come away with a broad knowledge of electronic commerce and its implications to modern business life and social life. Credit will not be given for both ISMN 5720/5723 and ISMN 6720/6726.

**ISMN 6770/6776 INFORMATION SYSTEMS ETHICS (3).** LEC. 3. Pr., (PHIL 1020 or PHIL 1040) and ISMN 3140. Information systems ethics, including: fundamentals; professional and user standards; and issues related to privacy, freedom of expression, intellectual property, and software development.

**ISMN 6900/6906 DIRECTED STUDIES (1-3).** IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ISMN 6960/6966 SPECIAL PROBLEMS (3).** IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**ISMN 7020/7026 BUSINESS TELECOMMUNICATIONS AND NETWORKS (3).** LEC. 3. Provides an understanding of voice and data communications, e.g., networks (LAN, internet), protocols standards, legislation and project development, so that managers, might utilize telecommunications effectively.

**ISMN 7140/7146 MANAGING END USER COMPUTING (3).** LEC. 3. Studies MIS from user's perspective, and compares it with the roles of the professional department. Course covers support of desktop applications, data usage, and communications.

**ISMN 7360/7366 INTEGRATING THEORY AND PRACTICE FOR TECHNOLOGY MANAGERS (3).** LEC. 3. A study of the technical and non-technical forces that influence the decision-making process in companies by the use of innovative instructional material.

**ISMN 7380/7386 INTEGRATING INFORMATION TECHNOLOGIES TO PROVIDE COMPETITIVE ADVANTAGE (3).** LEC. 3. How to integrate effectively information technologies in formulating and implementing competitive strategies for companies.

**ISMN 7660/7666 INFORMATION SYSTEMS ANALYSIS AND DESIGN (3).** LEC. 3. General systems theory, information systems logical and physical analysis, structured and object-oriented methodologies and prototyping, system documentation, general design and use of CASE tools.

**ISMN 7670/7676 ELECTRONIC COMMERCE (3).** LEC. 3. The tools, skills, technologies, and business and social implications of the emergence of electronic commerce in cyberspace.

**ISMN 7730/7736 MANAGEMENT OF INNOVATION (3).** LEC. 3. Pr., BUSI 7220. The process of product and service innovation on two levels: managing product design and general strategies for managing multiple innovation streams.

**ISMN 7760/7766 QUANT METHODS IN OPS MGT (3).** LEC. 3.

**ISMN 7830/7836 ADVANCED DATABASE MANAGEMENT SYSTEMS PROJECTS (3).** LEC. 3. Database management systems using database methodologies to support business applications, including requirements for distributed databases.

**ISMN 7870/7876 EXPERT SYSTEMS IN BUSINESS (3).** LEC. 3. Pr., BUSI 7220. Study of expert systems and other knowledge-based systems in the organization, including relevant concepts, methodologies, architectures, strategies, and issues.

**ISMN 7880/7886 ADVANCED MANAGEMENT INFORMATION SYSTEMS (3).** LEC. 3. In-depth inquiry and analysis of advanced information technologies in organizations.

**ISMN 7890/7896 INFORMATION RESOURCE MGT (3).** LEC. 3. Pr., BUSI 7220. Management of information systems resources, unique management problems in a computer information systems environment. Strategic and competitive analysis of information technology.

**ISMN 7980/7986 MMIS PROJECT (1-10).** IND. SU. Independent exploration of an approved topic/problem that allows the student to demonstrate the application of knowledge and capabilities gained during the program. Approval of the project and assessment of its deliverables by the student's advisory committee is required. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**ISMN 7990 RESEARCH AND THESIS (1-10).** MST. Research on thesis or research project. Departmental approval. Course may be repeated with change in topics.

## Music (MUSI)

### Music (MUSI)

Dr. Sara Lynn Baird - 844-4165

#### APPLIED MUSIC (MUAP)

**MUAP 1010 PERFORMANCE (0).** PRL. Pr., departmental approval. Remedial performance instruction to be taken on a limited basis by Music Education majors and Music minors. May be repeated only upon departmental approval and unusual circumstances. One half-hour private lesson per week.

**MUAP 1110 PERFORMANCE (1).** PRL. 1. Pr., departmental approval; successful audition. Instruction in major performance medium for the freshman Music Education major. One half-hour private lesson per week. Departmental approval; successful audition.

**MUAP 1210 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1110. Pr., departmental approval; successful audition. Instruction in major performance medium for the freshman Music Education major. One half-hour private lesson per week.

**MUAP 1310 PERFORMANCE (1).** PRL. 1. Pr., departmental approval and successful audition. Instruction in major performance medium for the Music minor or secondary performance medium for the Music Education major. One half-hour private lesson per week.

**MUAP 1410 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1310. Pr., departmental approval and successful audition. Instruction in major performance medium for the Music minor or secondary performance medium for the Music Education major or Bachelor of Arts in Music Performance major. One half-hour private lesson per week. Departmental approval; successful audition.

**MUAP 1520 PERFORMANCE (1).** PRL. 1. Instruction in major performance medium for the freshman BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 1530 PERFORMANCE (1).** PRL. 1. Instruction in major performance medium for the first-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

**MUAP 1620 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1520. Instruction in major performance medium for the freshman BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 1630 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1530. Instruction in major performance medium for the first-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

**MUAP 2110 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1210. Instruction on major performance medium for the sophomore Music Education major. One half-hour private lesson per week. Departmental approval; successful audition.

**MUAP 2210 PERFORMANCE (1).** PRL. 1. Pr., MUAP 2110. Instruction on major performance medium for the sophomore Music Education major or Bachelor of Arts in Music Performance major. One half-hour private lesson per week for Mus. Ed; one hour private lesson per week for BA in Music Performance. Departmental approval; successful audition.

**MUAP 2310 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1410. Instruction in major performance medium for the Music minor or secondary performance medium for the Music Education major. One half-hour private lesson per week. Departmental approval.

**MUAP 2410 PERFORMANCE (1).** PRL. 1. Pr., MUAP 2310. Instruction in major performance medium for the Music minor or secondary performance medium for the Music Education major or Bachelor of Arts in Music Performance major. One half-hour private lesson per week. Departmental approval; successful audition.

**MUAP 2520 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1620. Instruction in major performance medium for the sophomore BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 2530 PERFORMANCE (1).** PRL. 1. Pr., MUAP 1630. Instruction in major performance medium for the second-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

**MUAP 2620 PERFORMANCE (1).** PRL. 1. Pr., MUAP 2520. Instruction in major performance medium for the sophomore BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 2630 PERFORMANCE (1).** PRL. 1. Pr., MUAP 2530. Instruction in major performance medium for the second-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

**MUAP 3120 PERFORMANCE (1).** PRL. 1. Pr., MUAP 2210. Instruction in major performance medium for the junior Music Education major or junior Bachelor of Arts in Music Performance major. One hour private lesson per week. Departmental approval; successful audition.

**MUAP 3220 PERFORMANCE (1).** PRL. 1. Pr., MUAP 3120. Instruction in major performance medium for the junior Music Education major or junior Bachelor of Arts in Music Performance major. One hour private lesson per week. Departmental approval; successful audition.

**MUAP 3520 PERFORMANCE (2).** PRL. 2. Pr., MUAP 2620. Instruction in major performance medium for the junior BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 3530 PERFORMANCE (1).** PRL. 1. Pr., MUAP 2630. Instruction in major performance medium for the third-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

**MUAP 3620 PERFORMANCE (2).** PRL. 2. Pr., MUAP 3520. Instruction in major performance medium for the junior BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 3630 PERFORMANCE (1).** PRL. 1. Pr., MUAP 3530. Instruction in major performance medium for the third-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

**MUAP 4120 PERFORMANCE (1).** PRL. 1. Pr., MUAP 3220. Instruction in major performance medium for the senior Music Education major or senior Bachelor of Arts in Music Performance major. One hour private lesson per week. Departmental approval; successful audition.

**MUAP 4220 PERFORMANCE (1).** PRL. 1. Pr., MUAP 4120. Instruction in major performance medium for the senior Music Education major or senior Bachelor of Arts in Music Performance major. One hour private lesson per week. Departmental approval; successful audition.

**MUAP 4520 PERFORMANCE (2).** PRL. 2. Pr., MUAP 3620. Departmental approval and successful audition. Instruction in major performance medium for the senior BA(MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 4530 PERFORMANCE (1).** PRL. 1. Pr., MUAP 3630. Departmental approval and successful audition. Instruction in major performance medium for the fourth-year music theatre major. Two half-hour private lessons per week.

**MUAP 4620 PERFORMANCE (2).** PRL. 2. Pr., MUAP 4520. Departmental approval and successful audition. Instruction in major performance medium for the senior BA (MULA) major (Performance option). One hour private lesson per week. Successful audition and departmental approval.

**MUAP 4630 PERFORMANCE (1).** PRL. 1. Pr., MUAP 4530. Departmental approval and successful audition. Instruction in major performance medium for the fourth-year music theatre major. Two half-hour private lessons per week.

**MUAP 7120 PERFORMANCE (2).** PRL. Departmental approval. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week.

**MUAP 7220 PERFORMANCE (2).** PRL. Pr., MUAP 7120. Departmental approval. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week. Departmental approval.

**MUAP 7320 PERFORMANCE (2).** PRL. Pr., MUAP 7220. Departmental approval. Private instruction in selected performance medium for the graduate. One hour private lesson per week.

**MUAP 7420 PERFORMANCE (2).** PRL. Pr., MUAP 7320. Departmental approval. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week. Departmental approval.

#### MUSIC (MUSI)

**MUSI 1000 PERFORMANCE ATTENDANCE (0).** LEC. SU. Enrollment in MUAP. Required during each Semester of MUAP (Performance) enrollment. Monitored attendance at studio and departmental convocations, as well as approved concerts, lectures, and special presentations within the Music Department and community.

**MUSI 1020 PIANO SKILLS I - RUDIMENTS (1).** LEC. 2. Class instruction and practice in the rudiments of music performance as applied to the piano. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 1030 Piano Skills II, 2040 Functional Piano I, or 2050 Functional Piano II.

**MUSI 1030 PIANO SKILLS II (1).** LEC. 2. Pr., MUSI 1020. Departmental approval. Class instruction and practice in the rudiments of music as performance as applied to the piano. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2040 Functional Piano I or 2050 Functional Piano II.

**MUSI 1040 BRASS INSTRUMENTS SKILLS (1).** LEC. 1. MUSI 1040 is not a prerequisite for MUSI 1050. Class instruction and practice in the rudiments of music as applied to trumpet, trombone, horn and other standard brass instruments.

**MUSI 1050 SINGER'S DICTION (1).** LEC. 1. Coreq., Registered for MUAP. (Applied Voice) class. Introduction to the rules of singing English, Italian, German and French as applied to art songs and arias through use of the IPA.

**MUSI 1060 WOODWIND INSTRUMENTS SKILLS (1).** LEC. 1. MUSI 1060 is not a prerequisite for MUSI 1070. Class instruction and practice in the rudiments of music as applied to double-reed instruments and saxophone.

**MUSI 1070 WOODWIND INSTRUMENTS SKILLS (1).** LEC. 1. MUSI 1060 is not a prerequisite for MUSI 1070. Class instruction and practice in the rudiments of music as applied to flute and clarinet.

**MUSI 1080 PERCUSSION SKILLS (1).** LEC. 1. Class instruction and practice in the rudiments of music as applied to various percussion instruments.

## Music (MUSI)

**MUSI 1090 THEATRE VOCAL SKILLS (1).** LEC. 1. Successful audition. Class instruction and practice in the rudiments of music and vocal production for the Theatre Major.

**MUSI 1100 MARCHING BAND (1).** LEC. 1. Successful audition. Provides music for athletic contests and halftime shows at football games, various parades, pep rallies and other campus and off-campus events.

**MUSI 1110 CONCERT BAND (1).** LEC. 2. Successful audition. A large performance group which rehearses and performs the literature of the concert band. Open to all Auburn University students by audition only. Course may be repeated with change in topic.

**MUSI 1120 SYMPHONIC BAND (1).** LEC. 1. Pr., Successful audition. A large performance group which rehearses and performs the literature of the concert band. Open to any Auburn University student by audition only. Course may be repeated with change in topics.

**MUSI 1130 JAZZ BAND (1).** LEC. 1. Pr., Successful audition. A performance group which rehearses and performs the jazz band literature. Open to any Auburn University student by audition only.

**MUSI 1140 CAMPUS BAND (1).** LEC. 2. A large concert band which gives performing experience to all university students with prior band experience. No audition is required. Course may be repeated with change in topics.

**MUSI 1150 ORCHESTRA (1).** LEC. 1. Pr., Successful audition. The Auburn Orchestra performs several times each semester and is open to all university students based on the instrumental needs of the group and successful audition.

**MUSI 1160 UNIVERSITY SINGERS (1).** LEC. 1. Pr., Successful audition. A select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Course may be repeated with change in topics.

**MUSI 1170 GOSPEL CHOIR (1).** LEC. 1. Pr., Successful audition. Performance of choral works in the African-American gospel tradition. Open to all university students based on successful audition. Course may be repeated with change in topics.

**MUSI 1180 WOMEN'S CHORUS (1).** LEC. 1. Pr., Departmental approval. Performance of choral works for women. Open to all university students based on departmental approval. Course may be repeated with change in topics.

**MUSI 1190 MEN'S CHORUS (1).** LEC. 1. Pr., Departmental approval. Performance of choral works for men. Open to all university students based on departmental approval. Course may be repeated with change in topics.

**MUSI 1200 OPERA WORKSHOP (1).** LEC. 1. Open to all Auburn University students interested in opera including performance, stage craft, make-up, conducting and coaching. The group prepares for a public performance. Course may be repeated with change in topic.

**MUSI 1210 CONCERT CHOIR (1).** LEC. 1. Pr., Successful audition. Concert choir is a mixed chorus for study and performance of serious choral literature. Course may be repeated with change in topics.

**MUSI 1220 MUSIC ENSEMBLE (1).** LEC. 1. Pr., Departmental approval. Study and performance of musical compositions for small instrumental groups. Course may be repeated with change in topics.

**MUSI 1230 VOCAL CHAMBER ENSEMBLE (1).** LEC. 1. Study and performance of musical compositions of small vocal groups. Departmental approval. Course may be repeated with change in topics.

**MUSI 1310 MUSIC THEORY I (2).** LEC. 2. Coreq., MUSI 1320. A systematic study of music composition procedures, form, and style during the Period of Common Practice. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 1410 Music Theory II or MUSI 2310 Music Theory III.

**MUSI 1320 MUSIC SKILLS I (1).** LEC. 1. Coreq., MUSI 1310. Development of aural, keyboard and sight singing skills with an understanding of basic harmonic practices. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 1420 Music Skills II or MUSI 2320 Music Skills III.

**MUSI 1410 MUSIC THEORY II (2).** LEC. 2. Pr., MUSI 1310. A systematic study of music composition procedures, form, and style during the Period of Common Practice. For music majors and minors. Normally taken with Music Skills II. Departmental approval. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2310 Music Theory III.

**MUSI 1420 MUSIC SKILLS II (1).** LEC. 1. Pr., MUSI 1320. Development of aural, keyboard, and sight-singing skills with an understanding of basic harmonic practices. For music majors and minors. Normally taken concurrently with Music Theory II. Departmental approval. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2320 Music Skills III.

**MUSI 2010 GUITAR AND STRINGS SKILLS (1).** LEC. 2. Pr., MUSI 1310. Class instruction and practice in the rudiments of music performance of fretted and unfretted string instruments such as guitar, violin, viola, cello and string bass.

**MUSI 2040 FUNCTIONAL PIANO I (1).** LEC. 2. Pr., MUSI 1030. Departmental approval. MUSI 2040 is not a prerequisite for 2050. Development of functional piano

skills for use in classroom, rehearsal or studio. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2050 Functional Piano II.

**MUSI 2050 FUNCTIONAL PIANO II (1).** LEC. 2. Pr., MUSI 1030. Departmental approval. MUSI 2040 is not a prerequisite for 2050. Development of functional piano skills for use in classroom, rehearsal or studio.

**MUSI 2310 MUSIC THEORY III (2).** LEC. 2. Pr., MUSI 1410 and MUSI 1320. Departmental approval. A systematic study of music composition procedures, form and style from the advent of chromaticism through the music of late 19th century.

**MUSI 2320 MUSIC SKILLS III (1).** LEC. 3. Pr., MUSI 1410 and MUSI 1420. Departmental approval. Development of advanced aural, keyboard and sight-singing skills with understanding of advanced harmonic practices.

**MUSI 2410 MUSIC THEORY IV (2).** LEC. 2. Pr., MUSI 1420 and MUSI 2310. Departmental approval. A systematic study of music composition procedures, form, and style from the late 19th century through the music of the 20th century.

**MUSI 2420 MUSIC SKILLS IV (1).** LEC. 1. Pr., MUSI 1410 and MUSI 2320. Departmental approval. Development of advanced aural, keyboard, and sight-singing skills with the understanding of advanced harmonic practices.

**MUSI 2730 APPRECIATION OF MUSIC (3).** LEC. 3. Fine Arts Core. An orientation in the art of listening. Outstanding composers and musical composition. No previous music training required.

**MUSI 2737 HONORS APPRECIATION OF MUSIC (3).** LEC. 3. Pr., Honors College. Fine Arts Core. The art and folk music of western and non-western cultures. No previous music training required.

**MUSI 3000 JUNIOR RECITAL (0).** PRL. 0. SU. Pr., MUAP 2620 or MUAP 2630. Coreq., Registered in MUAP (Applied Lessons) class. Demonstration of a professional level of achievement in the student's major performance medium by the successful presentation of a junior recital.

**MUSI 3020 PIANO LITERATURE (2).** LEC. 2. Piano students registered in MUAP (Applied Lessons) classes Departmental approval. A study of the literature for solo piano from the Baroque to the present, with emphasis on musical styles.

**MUSI 3030 VOCAL SKILLS (1).** LEC. 1. Class instruction and practice in the rudiments of music as applied to vocal performance. Pr., Music Education major.

**MUSI 3040 BRASS INSTRUMENT SKILLS - HIGH BRASS (1).** LEC. 2. Admission to Teacher Education Departmental approval. Class instruction and practice in rudiments of music and pedagogy of trumpet and horn.

**MUSI 3050 BRASS INSTRUMENT SKILLS - LOW BRASS (1).** LEC. 2. Admission to Teacher Education Departmental approval. Class instruction and practice in rudiments of music as applied to trombone, tuba and other low-brass instruments.

**MUSI 3060 WOODWIND INSTRUMENT SKILLS - DOUBLE REEDS/ SAXOPHONE (1).** LEC. 2. Admission to Teacher Education Departmental approval. Class instruction and practice in the rudiments of music as applied to double-reed instruments and saxophone.

**MUSI 3070 WOODWIND INSTRUMENT SKILLS - FLUTE/CLARINET (1).** LEC. 2. Admission to Teacher Education. Departmental approval. Class instruction and practice in the rudiments of music applied to flute and clarinet.

**MUSI 3080 PERCUSSION SKILLS (1).** LEC. 2. Pr., MUAP 1210. Class instruction and practice in the rudiments of music as applied to various percussion instruments.

**MUSI 3510 MUSIC HISTORY I (3).** LEC. 3. Pr., MUSI 1410. A study of the development of music from the earliest times through early 18th Century styles through recorded examples and readings.

**MUSI 3520 MUSIC HISTORY II (3).** LEC. 3. Pr., MUSI 1410. A study of the development of music from the early 18th Century to the present day through lectures, recorded examples, and readings.

**MUSI 3610 CHORAL CONDUCTING I (2).** LEC. 2. Pr., MUSI 1410. Basic conducting technique and introduction to score reading and interpretation.

**MUSI 3620 CHORAL CONDUCTING II (2).** LEC. 2. Pr., MUSI 3610. Advanced conducting technique with practical experience in preparing choral groups for performance.

**MUSI 3630 INSTRUMENTAL CONDUCTING I (2).** LEC. 2. Pr., MUSI 1410. Basic conducting technique and introduction to score reading and interpretation.

**MUSI 3640 INSTRUMENTAL CONDUCTING II (2).** LEC. 2. Pr., MUSI 3630. Advanced conducting technique with practical experience in preparing instrumental groups for performance.

**MUSI 3970 SPECIAL TOPICS IN MUSIC (3).** LEC. 3. Study of substantive topics and issues in the discipline of music. Course may be repeated for a maximum of 6 credit hours.

**MUSI 4000 SENIOR RECITAL (0).** PRL. SU. Pr., MUAP 3220 or MUAP 3620 or MUAP 3630. Coreq., Registered in MUAP (Applied Lessons) class. Demonstration of a professional level of achievement in the student's major performance medium by the successful presentation of a senior recital.

## Music (MUSI)

**MUSI 4010 VOCAL PEDAGOGY (2).** LEC. 2. Pr., MUAP 2210 or MUAP 2620 or MUAP 2630. For prospective voice teachers. An intensive study of the materials and methods of voice training.

**MUSI 4020 INSTRUMENTAL PEDAGOGY (2).** LEC. 2. Pr., MUAP 2210 or MUAP 2620 or MUAP 2630. Admission to Teacher Education or BA major. For prospective instrumental teachers. An intensive study of the material and methods of teaching various brass, woodwind and percussion instruments.

**MUSI 4030 PIANO PEDAGOGY (2).** LEC. 2. Piano majors and minors Departmental approval. A study of techniques, methods and experiences of former and current teachers to equip the student for future piano teaching.

**MUSI 4040 MUSIC INSTRUMENTS REPAIR (1).** LEC. 1. Selection, care and repair of woodwind, brass, and percussion instruments with emphasis on adjustments which should be made by the instrumental director.

**MUSI 4090 MARCHING BAND TECHNIQUES (2).** LEC. 2. Admission to Teacher Education Departmental approval. Fundamental methods and procedures of the marching band including study of computer-aided band charting.

**MUSI 4100 ORCHESTRAL TECHNIQUES (2).** LEC. 2. Fundamental methods and procedures of rehearsing the orchestra in areas of articulation, tone production, blend, balance, intonation, and musical expression.

**MUSI 4110 CHORAL TECHNIQUES (2).** LEC. 2. Methods and procedures of rehearsing choral groups in areas of diction, tone production, balance, blend, intonation, and musical expression.

**MUSI 4400 INSTRUMENTAL ARRANGING (2).** LEC. 2. Pr., MUSI 2410. Project course in arranging various instrumental combinations from quartet to symphonic band.

**MUSI 4500 CHORAL ARRANGING (2).** LEC. 2. Pr., MUSI 2410. Project course in arranging for various vocal combinations.

**MUSI 4600 ORCHESTRATION (2).** LEC. 2. Pr., MUSI 2410. Project course in arranging for various orchestral combinations.

**MUSI 5520 CHORAL LITERATURE (2).** LEC. 2. Pr., Departmental approval. A chronological study of choral music from the Middle Ages to the present.

**MUSI 5530 WIND BAND LITERATURE (2).** LEC. 2. Pr., Departmental approval. History of the development of the wind band and its literature from ca. 1500 to the present.

**MUSI 6520/6526 CHORAL LITERATURE (2).** LEC. 2. Pr., Departmental approval. A chronological study of choral music from the Middle Ages to the present.

**MUSI 7000/7006 GRADUATE CHORAL CONDUCTING I (3).** LEC. 3. Registration in approved choral ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern choral works. Participation in an approved choral ensemble is required.

**MUSI 7010/7016 GRADUATE CHORAL CONDUCTING II (3).** LEC. 3. Registration in approved choral ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern choral works.

**MUSI 7040/7046 GRADUATE INSTRUMENTAL CONDUCTING I (3).** LEC. 3. Registration in approved instrumental ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern instrumental works for large ensembles.

**MUSI 7050/7056 GRADUATE INSTRUMENTAL CONDUCTING II (3).** LEC. 3. Registration in approved instrumental ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern instrumental works for large ensembles.

**MUSI 7060/7066 BRASS INSTRUMENTS TECHNIQUES (1).** LEC. 1. Registration in approved instrumental ensemble. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on brass instruments.

**MUSI 7070/7076 WOODWIND INSTRUMENTS TECHNIQUES (1).** LEC. 1. Registration in approved instrumental ensemble. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on woodwind instruments.

**MUSI 7080/7086 PERCUSSION INSTRUMENTS TECHNIQUES (1).** LEC. 1. Registration in approved instrumental ensemble. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on various percussion instruments.

**MUSI 7090/7096 SURVEY OF CHORAL LITERATURE (3).** LEC. 3. Registration in approved choral ensemble. Detailed analysis of the styles, forms and performance practices of choral music of the Classic, Romantic, and Modern periods, working primarily with scores of representative works.

**MUSI 7100/7106 CHORAL ARRANGING I (3).** LEC. 3. Participation in an approved choral ensemble. Advanced arranging for various choral combinations.

**MUSI 7110/7116 CHORAL ARRANGING II (3).** LEC. 3. Pr., MUSI 7100 or MUSI 7106. Participation in an approved choral ensemble. Advanced arranging for various choral combinations.

**MUSI 7120/7126 BAND ARRANGING I (3).** LEC. 3. Participation in an approved band. Advanced arranging for various band organizations.

**MUSI 7130/7136 BAND ARRANGING II (3).** LEC. 3. Pr., MUSI 7120 or MUSI 7126. Participation in an approved band. Advanced arranging for various band organizations.

**MUSI 7140 ORCHESTRAL ARRANGING I (3).** LEC. 3. Participation in orchestra. Advanced arranging for the orchestra.

**MUSI 7150 ORCHESTRAL ARRANGING II (3).** LEC. 3. Pr., MUSI 7140. Participation in orchestra. Advanced arranging for the orchestra.

**MUSI 7160 SEMINAR IN MUSIC HISTORY (2).** SEM. 2. An in-depth study of different aspects of the history of music through historic research, analysis of music, and performance practice.

**MUSI 7170 SEMINAR IN RENAISSANCE MUSIC (2).** SEM. 2. Study of selected music of the Renaissance through history, analysis and performance practice.

**MUSI 7180 SEMINAR IN BAROQUE MUSIC (2).** SEM. 2. Study of selected Baroque music through history, analysis, and performance practice.

**MUSI 7190 SEMINAR IN CLASSICAL MUSIC (2).** SEM. 2. Study of selected Classical music through history, analysis, and performance practice.

**MUSI 7200 SEMINAR IN ROMANTIC MUSIC (2).** SEM. 2. Study of selected Romantic music through history, analysis, and performance practice.

**MUSI 7210 SEMINAR 20TH-CENTURY MUSIC (2).** LEC. 2. Study of selected 20th-Century music through history, analysis, and performance practice.

**MUSI 7220 SEMINAR IN AMERICAN MUSIC (2).** SEM. 2. Study of selected American music through history, analysis, and performance practice.

**MUSI 7230/7236 ADVANCED FORMAL ANALYSIS (3).** LEC. 3. Advanced formal analysis of standard music literature.

**MUSI 7240/7246 WIND BAND LITERATURE I (3).** LEC. 3. Enrollment in Graduate Instrumental Ensemble. History of the development of the wind band to 1950. Advanced analysis of Grade 1-3 wind band literature.

**MUSI 7250/7256 WIND BAND LITERATURE II (3).** LEC. 3. Coreq., Enrollment in Graduate Instrumental Ensemble. History of the development of the wind from 1950 to present. Advanced analysis of Grade 4-6 wind band literature.

**MUSI 7260 TECHNIQUES OF PRIVATE INSTRUMENTAL INSTRUCTION I (2).** LEC. 2. Analysis of various instrumental teaching methods and a supervised private teaching experience.

**MUSI 7270 TECHNIQUES OF PRIVATE INSTRUMENTAL INSTRUCTION II (2).** LEC. 2. Pr., MUSI 7260. Analysis of various instrumental teaching methods and a supervised private teaching experience.

**MUSI 7280 TECHNIQUES OF PRIVATE VOCAL INSTRUCTION I (2).** LEC. 2. Analysis of various vocal teaching methods and a supervised private teaching experience.

**MUSI 7290 TECHNIQUES OF PRIVATE VOCAL INSTRUCTION II (2).** LEC. 2. Pr., MUSI 7280. Analysis of various vocal teaching methods and a supervised private teaching experience.

**MUSI 7300 INTRODUCTION TO GRADUATE RESEARCH IN MUSIC (2).** RES. 2. Extensive examination of research materials (books, music, and recordings). Includes the preparation of an outline for a research paper.

**MUSI 7400/7406 GRADUATE CHORAL ENSEMBLE (1).** LEC. 1. Graduate-level choral ensemble for the study and performance of standard literature.

**MUSI 7410/7416 GRADUATE INSTRUMENTAL ENSEMBLE (1).** LEC. 1. Graduate-level instrumental ensemble for the study and performance of standard literature.

**MUSI 7500 THEORY REVIEW I (1).** LEC. 1. Pr., departmental approval. A study of and practical application of harmonic practices from before the Period of Common Practice to the present day with emphasis on various theoretical approaches and analytical techniques. Credit will not be given to graduate students.

**MUSI 7510 THEORY REVIEW II (1).** LEC. 1. Continuation of MUSI 7500. Credit will not be given to graduate students. Departmental approval.

**MUSI 7540 VOCAL LITERATURE (2).** LEC. 2. Pr., departmental approval. A study of the vocal literature from the Baroque to the present day.

**MUSI 7550 KEYBOARD LITERATURE (2).** LEC. 2. Pr., departmental approval. A study of keyboard repertoire from the Baroque to the present.

**MUSI 7560 INSTRUMENTAL LITERATURE (2).** LEC. 2. Pr., departmental approval. A study of the literature of the major performance instrument from its beginning to the present.

**MUSI 7930/7936 DIRECTED STUDIES (1-6).** IND. Pr., departmental approval. Independent study directed toward desired objectives related to student's specific areas of interest and specialization. Includes evaluation at regular interval. Course may be repeated with change in topic. Course may be repeated for a maximum of 12 credit hours.

**MUSI 7970/7976 SPECIAL TOPICS IN MUSIC (1-6).** LEC. Provides an opportunity for graduate students and pursue cooperatively selected topics. Course may be repeated for a maximum of 12 credit hours.

## Nutrition (NURI)

**MUSI 7980 QUALIFYING RECITAL (3).** LEC. 3. Pr., MUAP 7810. Public recital of graduate level repertoire. Recital may include a lecture component.

### Naval Science (NAVS)

Capt. T. R. Williams - 844-4364

**NAVS 1010 INTRODUCTION TO NAVAL SCIENCE (3).** LEC. 3. Basic areas of Naval Science including uniforms and insignia, military courtesy, discipline, warfare components, organizational structure, and supporting elements of the U.S. Navy and U.S. Marine Corps.

**NAVS 1011 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military instruction.

**NAVS 1020 SEAPOWERS AND MARITIME AFFAIRS (3).** LEC. 3. Coreq., NAVS 1021. Introduction to broad principles, concepts and elements of naval history, sea power, and maritime affairs from past to present.

**NAVS 1021 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 1020. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 2010 LEADERSHIP AND MANAGEMENT (3).** LEC. 3. Fundamentals of leadership and management theory vital to the effectiveness of Navy/Marine Corps officers.

**NAVS 2011 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 2010. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 2021 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 2060. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 2060 NAVIGATION (3).** LEC. 3. Coreq., NAVS 2021. Theory and principles of piloting involving the use of visual and electronic aids.

**NAVS 3011 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 3050. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 3021 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 3060. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 3030 EVOLUTION OF WARFARE (3).** LEC. 3. Pr., P/C, NAVS 3011 or P/C, NAVS 3021. Forms of warfare practices to identify historical continuity and change in the evolution of warfare. Explores the impact of historical precedent, economic factors and technological change on politico-military thought and action.

**NAVS 3050 NAVAL SHIP SYSTEMS I (ENGINEERING) (3).** LEC. 3. Coreq., NAVS 3011. Principles of ship design, construction, and stability. Introduction to thermodynamics and the steam cycle as applied to naval propulsion systems.

**NAVS 3060 NAVAL SHIP SYSTEMS II WEAPONS (3).** LEC. 3. Coreq., NAVS 3021. Theory and employment of systems through a study of fundamental principles of sensor, tracking, computational, and weapons delivery subsystems.

**NAVS 4011 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 4050. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 4020 LEADERSHIP AND ETHICS (3).** LEC. 3. Pr., NAVS 2010. Integrates an intellectual exploration of Western moral traditions and ethical philosophy with a variety of topics, such as military leadership, core values, and professional ethics. Departmental approval.

**NAVS 4021 NAVAL SCIENCE LABORATORY (0).** LAB. 3. SU. Coreq., NAVS 4020. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

**NAVS 4030 AMPHIBIOUS WARFARE (3).** LEC. 3. Pr., P/C, NAVS 4011 or P/C, NAVS 4021. Historical survey of the development of amphibious doctrine and the conduct of amphibious operations. Emphasis on the evolution of amphibious warfare in the 20th century.

**NAVS 4050 NAVAL OPERATION AND SEAMANSHIP (3).** LEC. 3. Coreq., NAVS 4011. Inland and International law governing maritime operations, communication procedures, and other naval/maritime operational procedures.

### Nutrition (NTRI)

Dr. Martin O'Neill - 844-4261

**NTRI 2000 NUTRITION AND HEALTH (3).** LEC. 3. Principles of human nutrition and food choices related to the health of individuals. Credit will not be given for both NTRI 2000 and NTRI 2007.

**NTRI 2007 HONORS NUTRITION AND HEALTH (3).** LEC. 3. Principles of human nutrition and food choices related to the health of individuals. Topics similar to NTRI 2000 but covered in greater depth with classroom discussion of controversial topics. Credit will not be given for both NTRI 2000 and NTRI 2007.

**NTRI 2010 BASIC SPORTS NUTRITION (3).** LEC. 3. Pr., (BIOL 1020 or BIOL 1027) or (NTRI 2000 or NTRI 2007). An introductory course on the relationship

between nutrition and sports performance. Topic areas to be covered include energy, carbohydrates, protein/amino acids, fluids, vitamins, minerals, body weight and supplement use as they directly relate to sports performance.

**NTRI 2050 SCIENCE OF FOOD (4).** LEC. 3, LAB. 3. Pr., (NTRI 2000 or NTRI 2007) and CHEM 1030 and (BIOL 1020 or BIOL 1027). Basic chemical and biological principles of food and food preparation methods, concepts of food quality, nutrition, sanitation, processing and food laws. Departmental approval.

**NTRI 2070 INTRO TO DIETETICS AND NUTR (1).** LEC. 1. Pr., NTRI 2000 or NTRI 2007. Overview of professional roles and responsibilities in dietetics and nutrition with emphasis on professional development and conduct. Spring. Departmental approval.

**NTRI 3040 FOOD SYSTEMS OPERATIONS (2).** LEC. 2. Pr., NTRI 2050. Principles for managing resources required in planning, purchasing, preparing and serving high quality food in food service operations. Fall.

**NTRI 3041 FOOD SYSTEMS OPERATIONS LABORATORY (2).** LAB. 4. Laboratory experience in food service operations. Food safety certification is included. TB test.

**NTRI 3380 STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1).** LEC. 1. Exploration of study abroad opportunities for students interested in the International Minor in Human Sciences.

**NTRI 3620 COMMUNITY NUTRITION (2).** LEC. 2. Pr., NTRI 2000 or NTRI 2007. Study of populations at nutrition risk, population-specific public health nutrition problems, and health care system programs. Fall.

**NTRI 3720 NUTRITIONAL ASSESSMENT (2).** LEC. 1, LAB. 2. Pr., BCHE 3180 and NUFS 2000. Identification and comparison of techniques for evaluating nutritional status including dietary intake, anthropometry and biochemical indices. Spring.

**NTRI 3940 COMMUNITY SERVICE (3-9).** LEC. 1, LAB. 6. Application of NUFS-related knowledge to real-life situations through participation in directed community service experiences. A) nutrition; B) hospitality; C) general NUFS. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**NTRI 4090 PROF ISSUES IN DIET NUTRITION (1).** LEC. 1. Pr., NTRI 2070. Professional issues and trends affecting dietetics and nutrition practice; planning for professional advancement; includes externship. Fall.

**NTRI 4410 EXPERIMENTAL FOOD SCIENCE (3).** LEC. 2, LAB. 3. Pr., NTRI 2050. Functions and interactions of ingredients and food constituents, factors affecting food quality. Spring.

**NTRI 4580 FOOD AND CULTURE (2).** LEC. 2. Cultural and social factors affecting food habits and nutritional status of populations throughout the world. Departmental approval.

**NTRI 4820 MACRONUTRIENTS (2).** LEC. 2. Pr., (NTRI 2000 or NTRI 2007) and BCHE 3180 and BIOL 2150. Physiological and biochemical basis for energy-yielding nutrients; structure, function, dietary requirements, digestion, absorption, transport and metabolism of macronutrients. Spring.

**NTRI 4830 VITAMINS AND MINERALS (3).** LEC. 3. Pr., (NTRI 2000 or NTRI 2007) and BCHE 3180. Metabolism, dietary needs, deficiency symptoms and food sources of vitamins and minerals in humans. Spring.

**NTRI 4930 DIRECTED STUDIES (1-8).** AAB/IND. Independent reading or research in a content area of special interest; supervised by a faculty member. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**NTRI 4970 SPECIAL TOPICS (1-3).** LEC. A) Nutrition, B) Hotel and Restaurant Management. A course offering unique or current issues not covered in a regularly scheduled course. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**NTRI 4980 UNDERGRADUATE RESCH AND STUDY (1-9).** AAB/IND. Directed research under faculty supervision. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**NTRI 4997 HONORS THESIS (1-3).** IND. SU. Research in specialized topics. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**NTRI 5020 MEDICAL NUTRITION I (3).** LEC. 3. Pr., NTRI 3720 and NTRI 4820 and NTRI 4830. Application of nutrition principles to the pathophysiological and biochemical changes associated with endocrine, cardiovascular and gastrointestinal tract diseases. Credit will not be given for both NTRI 5020 and NTRI 6020. Fall. Departmental approval.

**NTRI 5030 MEDICAL NUTRITION II (3).** LEC. 3. Pr., NTRI 5020. Application of nutrition principles to the pathophysiological and biochemical changes associated with sepsis, burns, and trauma as well as renal, respiratory and immune system diseases. Credit will not be given for both NTRI 5030 and NTRI 6030. Spring. Departmental approval.

**NTRI 5380 STUDY/TRAVEL IN NUTRITION, DIETETICS AND HOSPITALITY MANAGEMENT (1-6).** AAB/FLD. Concentrated study in nutrition, food science, or hotel and restaurant management in the US or international locations. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**NTRI 5560 NUTRITION AND FOOD SERVICE MANAGEMENT (4).** LEC. 4. Pr., NTRI 3041 and ACCT 2910. Organization, management and marketing of food and

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nutrition service systems in health care facilities. Credit will not be given for both NTRI 5560 and NTRI 6560. Spring. Departmental approval.

**NTRI 5620 SPORTS NUTRITION (3).** LEC. 3. Pr., BIOL 2510 and BCHE 3180. Relationships between energy, carbohydrates, proteins, fluids, vitamins, minerals, body weight, ergogenic aids and physical performance. Credit will not be given for both NTRI 5620 and NTRI 6620. Spring. Departmental approval.

**NTRI 5820 NUTRITION IN THE LIFE CYCLE (3).** LEC. 3. Pr., NTRI 4830. Metabolic and clinical aspects of nutrition during key periods of the life cycle emphasizing pregnancy, infancy, adolescence and late adulthood. Credit will not be given for both NTRI 5820 and NTRI 6820. Fall. Departmental approval.

**NTRI 6020 MEDICAL NUTRITION I (3).** LEC. 3. Pr., NTRI 3720 and NTRI 4820 and NTRI 4830. Application of nutrition principles to the pathophysiological and biochemical changes associated with endocrine, cardiovascular, and gastrointestinal diseases. Credit will not be given for both NTRI 6020 and NTRI 5020. Fall. Departmental approval.

**NTRI 6380 STUDY/TRAVEL IN NUTRITION, DIETETICS AND HOSPITALITY MANAGEMENT (1-6).** AAB/FLD. Concentrated study in nutrition, food science, or hotel and restaurant management in the US or international locations. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**NTRI 6560/6566 NUTRITION AND FOOD SERVICE MANAGEMENT (4).** LEC. 4. Pr., NUFS 3041 and ACCT 2910. Organization, management and marketing of food and nutrition service systems in health care facilities. Credit will not be given for both NTRI 6560 and NTRI 5560. Spring. Departmental approval.

**NTRI 6620 SPORTS NUTRITION (3).** LEC. 3. Pr., BIOL 2510 and BCHE 3180. Relationships between energy, carbohydrates, proteins, fluids, vitamins, minerals, body weight, ergogenic aids and physical performance. Credit will not be given for both NTRI 6620 and NTRI 5620. Spring. Departmental approval.

**NTRI 6820 NUTRITION IN THE LIFE CYCLE (3).** LEC. 3. Pr., NTRI 4830. Metabolic and clinical aspects of nutrition during key periods of the life cycle emphasizing pregnancy, infancy, adolescence and late adulthood. Credit will not be given for both NTRI 6820 and NTRI 5820. Fall. Departmental approval.

**NTRI 7050/7056 METHODS OF RESEARCH (2).** LEC. 2. Research methods and designs applicable to disciplines represented in nutrition and food science. Credit is not allowed for both NTRI 7050 and NTRI 7056. Spring. Departmental approval.

**NTRI 7280 LABORATORY METHODS IN FOOD SCIENCE AND NUTRITION (3).** LEC. 2, LAB. 3. Modern laboratory techniques and instruments used in human nutrition and food science research. Departmental approval.

**NTRI 7500 MINERALS (2).** LEC. 2. Sources, digestion, absorption, transport, function and metabolism of major and trace minerals in the human body. Fall. Departmental approval.

**NTRI 7510 VITAMINS (2).** LEC. 2. Advanced study of metabolism, requirements, interactions and deficiencies of the fat and water soluble vitamins as related to humans. Fall. Departmental approval.

**NTRI 7520 MACRONUTRIENTS INTEGR METABO (4).** LEC. 4. Advanced study of energy metabolism, digestion, absorption, transport and integrative metabolism of macronutrients. Summer.

**NTRI 7850 RESEARCH SEMINAR FOR MASTER'S PROGRAM (1).** SEM. 1. Current topics in nutrition and food science presented by MS graduate students. Departmental approval.

**NTRI 7910 PRACTICUM IN NUTRITION AND DIETETICS (1-12).** PRA. SU. Application of principles and theories of nutrition or food science in a professional setting. No more than three hours may count toward a graduate degree. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**NTRI 7930/7936 ADVANCED INDEPENDENT STUDY (1-6).** IND. Advanced reading or research approved and supervised by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**NTRI 7960/7966 SPECIAL PROBLEMS (1-5).** IND. Critical analysis of classic and current research. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**NTRI 7980/7986 NONTHESIS RESEARCH (1-6).** RES. SU. In-depth work in a particular project related to hotel and restaurant management. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**NTRI 7990 RESEARCH AND THESIS (1-10).** MST. Research in an area of specialization. Departmental approval. Course may be repeated with change in topics.

**NTRI 8850 RESEARCH SEMINAR FOR DOCTORAL PROGRAM (1-2).** SEM. Required for doctoral students in nutrition and food science. Advanced topics in nutrition and food science presented by doctoral students. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

**NTRI 8910 SUPERVISED TEACHING (1).** AAB/IND. 1. Practical experience teaching in the classroom. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**NTRI 8970/8976 ADVANCED TOPICS IN NUTRITION, DIETETICS AND HOSPITALITY MANAGEMENT (1-6).** LEC. A) Nutrition, B) Hotel and Restaurant Management. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**NTRI 8990 RESEARCH AND DISSERTATION (1-10).** AAB/DSR. Research in an area of specialization. Departmental approval. Course may be repeated with change in topics.

## Nursing (NURS)

Dr. Gregg E. Newschwander - 844-5665

**NURS 2017 HONORS INTRO TO NURSING (2).** LEC. 2. Pr., Honors College. Study of professional nursing's role as the foundation of the health care system.

**NURS 2020 PROFESSIONAL NURSING: THE FOUNDATION OF HEALTH CARE (2).** LEC. 2. Admission to the School of Nursing. Fundamental concepts essential for professional nursing practice.

**NURS 3110 THEORETICAL CONCEPTS OF PROFESSIONAL NURSING PRACTICE (3).** LEC. 3. Pr., NURS 2020. Coreq., NURS 3130 and NURS 3141. Exploration of essential professional nursing concepts.

**NURS 3130 EVIDENCE BASED SKILLS, ASSESSMENT, AND HEALTH PROMOTION (4).** LEC. 4. Pr., NURS 2020. Coreq., NURS 3110 and NURS 3141. Integration of current evidence to guide nursing skills, assessment, and health promotion.

**NURS 3141 CONCEPTS AND EVIDENCE BASED SKILLS FOR PROFESSIONAL CLINICAL PRACTICE (3).** LAB. 9. SU. Pr., NURS 2020. Coreq., NURS 3110 and NURS 3130. Application of foundational nursing concepts, skills, and assessment across the lifespan in diverse settings with emphasis on health promotion.

**NURS 3210 CLINICAL PHARMACOLOGY (2).** LEC. 2. Pr., BIOL 3120. Nurse's role in therapeutic pharmacology.

**NURS 3220 EVIDENCE BASED PRACTICE (2).** LEC. 2. Pr., NURS 3110. Application of appropriate research findings and other evidence to influence nursing practice.

**NURS 3230 PROFESSIONAL NURSING CONCEPTS: ACUTE CARE ACROSS THE LIFESPAN (6).** LEC. 6. Pr., NURS 3110 and BIOL 3120 and NURS 3130 and NURS 3141. Coreq., NURS 3210 and NURS 3231. Concepts inherent in the delivery of nursing care for acutely ill individuals and their families.

**NURS 3231 PROFESSIONAL NURSING CONCEPTS: ACUTE CARE ACROSS THE LIFESPAN - CLINICAL (4).** LAB. 12. SU. Pr., NURS 3110 and BIOL 3120 and NURS 3130 and NURS 3141. Coreq., NURS 3210 and NURS 3230. Application of concepts inherent in the delivery of nursing care for acutely ill individuals and their families.

**NURS 3330 PROFESSIONAL NURSING CONCEPTS IN THE CHILDBEARING FAMILY AND REPRODUCTIVE HEALTH (4).** LEC. 4. Pr., BIOL 3120 and NURS 3210. Coreq., NURS 3331. Concepts inherent in reproductive health and nursing care for childbearing families.

**NURS 3331 PROFESSIONAL NURSING CONCEPTS IN THE CHILDBEARING FAMILY AND REPRODUCTIVE HEALTH - CLINICAL (2).** LAB. 6. SU. Pr., BIOL 3120 and NURS 3210. Coreq., NURS 3330. Concepts inherent in reproductive health and nursing care for childbearing families applied in clinical settings.

**NURS 3340 PROFESSIONAL NURSING CONCEPTS ACROSS POPULATIONS (3).** LEC. 3. Pr., BIOL 3120 and NURS 3210. Coreq., NURS 3341. Concepts inherent in the delivery of nursing care for individuals, families and populations in the global community.

**NURS 3341 PROFESSIONAL NURSING CONCEPTS ACROSS POPULATIONS CLINICAL (3).** LAB. 9. SU. Pr., BIOL 3120 and NURS 3210. Coreq., NURS 3340. Application of concepts inherent in the delivery of nursing care for individuals, families, and populations in the global community.

**NURS 3940 SPECIAL TOPICS IN NURSING (3).** LEC. 3. Focused study plan designed for students who are out of sequence in the professional nursing curriculum. Course may be repeated for a maximum of 6 credit hours.

**NURS 3970 GLOBAL PERSP IN HEALTH & SOC (6).** LEC. 3, LAB. 3. The objective of the course is to learn about health care in Spain by immersing the student totally into the Spanish language and culture. Course may be repeated for a maximum of 12 credit hours.

**NURS 4110 CHILDREN WITH CHRONIC ILLNESS (3).** LEC. 3. Pr., Senior-level student in Nursing. Theories and concepts of care of children with special needs and/or chronic health problems. Departmental approval.

**NURS 4120 CAMP NURSING (2).** LAB. 6. SU. Pr., Senior-level student in Nursing. Clinical experience in the care of children with chronic conditions in a camp setting.

**NURS 4130 NURSING THE ART OF CARING (2).** LEC. 2. Pr., Senior-level student in Nursing. Philosophical, social, and ethical principles inherent in the practice of professional nursing. Emphasis is on caring as a philosophy to guide clinical practice.

**NURS 4140 CONTEMPORARY HEALTH ISSUES OF WOMEN (2).** LEC. 2. Pr., Senior-level student in Nursing. Exploration of the health care delivery system as it pertains to women.

**NURS 4150 HUMAN SEXUALITY IN HEALTH AND ILLNESS (2).** LEC. 2. Pr., Senior-level student in Nursing. Human sexuality in relation to the health-illness continuum. Sexuality across the lifespan.

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**NURS 4160 SPIRITUAL PERSPECTIVES IN NURSING (2).** LEC. 2. Pr., Senior-level student in Nursing. Use of the nursing process to help clients with various spiritual orientations meet spiritual needs.

**NURS 4170 CARDIOLOGY FOR NURSES (2).** LEC. 2. Pr., Senior-level student in Nursing. Emphasis on the nurse's role in the management of clients with cardiovascular disorders.

**NURS 4180 TRAUMA NURSING (2).** LEC. 2. Pr., Senior-level student in Nursing. A broad overview of the specialty of trauma nursing and the multiple factors that affect patient care in an emergency or trauma situation.

**NURS 4190 AIDS A SOCIAL EPIDEMIC (2).** LEC. 2. Pr., Senior-level student in Nursing. The psychosocial, physical, emotional, ethical, legal, behavioral, and changing health care needs of clients, families, aggregates and populations as a result of AIDS.

**NURS 4210 APPLIED CLINICAL NUTRITION FOR NURSES (2).** LEC. 2. Pr., NURS 2000. Pr., Senior-level student in Nursing. Interdependent function of the nurse as a provider of nutritional care for the individual.

**NURS 4220 INTEGRATIVE HEALING THERAPIES (2).** LEC. 2. Pr., Senior-level student in Nursing. Theoretical and empirical bases for the use of selected interventions in clinical nursing practice.

**NURS 4230 PROFESSIONAL NURSING CONCEPTS: CHRONIC AND COMPLEX CONDITIONS (5).** LEC. 5. Pr., (BIOL 3210 or BIOL 4400) and NURS 3220 and NURS 3230 and NURS 3231 and NURS 3330 and NURS 3331 and NURS 3340 and NURS 3341. Coreq., NURS 4231. Concepts inherent in the delivery of nursing care for individuals, families, and populations with chronic and/or complex conditions.

**NURS 4231 PROFESSIONAL NURSING CONCEPTS: CHRONIC AND COMPLEX CONDITIONS - CLINICAL (5).** LAB. 15. Pr., (BIOL 3210 or BIOL 4400) and NURS 3220 and NURS 3230 and NURS 3231 and NURS 3330 and NURS 3331 and NURS 3340 and NURS 3341. Coreq., NURS 4230. Applications of concepts inherent in the delivery of nursing care for individuals, families, and populations with chronic and/or complex conditions.

**NURS 4240 CULTURAL EXPEDITIONS IN HEALTH CARE (2).** LEC. 2. Pr., Senior-level student in Nursing. Hands-on experience with different aspects of culture including an overnight stay in a replica of a third world global village.

**NURS 4250 COMPLICATIONS OF OBSTET NURSING (2).** LEC. 2. Pr., Senior-level student in Nursing. Concepts and theories underlying nursing care of complications of the childbearing family.

**NURS 4260 MENTORING IN NURSING (2).** LEC. 1, LAB. 3. Pr., NURS 3720 and NURS 3721. Pr., Senior-level student in Nursing. Theoretical and practical aspects of peer mentoring.

**NURS 4270 PERIOPERATIVE NURSING (2).** LEC. 1, LAB. 6. Pr., Senior-level student in Nursing. A broad overview focusing on the specialty area of peri-operative nursing and the multiple factors that will impact patient care from the preoperative phase through the recovery phase. Fall.

**NURS 4810 PROFESSIONAL NURSING LEADERSHIP IN MICROSYSTEMS (2).** LEC. 2. Pr., (BIOL 3210 or BIOL 4400) and NURS 3220 and NURS 3230 and NURS 3231 and NURS 3340 and NURS 3331 and NURS 3330 and NURS 3341. Coreq., NURS 4230 and NURS 4231. The study of leadership and management concepts for direct patient care.

**NURS 4900 INDEPENDENT STUDY IN NURSING (1-6).** IND. Directed readings and/or clinical study in student-selected areas related to nursing.

**NURS 4910 PROFESSIONAL NURSING LEADERSHIP IN COMPLEX SYSTEMS (3).** LEC. Pr., NURS 4230, 4231, and 4810. Coreq., NURS 4911. Study of leadership concepts in complex systems influencing health care.

**NURS 4911 LEADERSHIP PRACTICUM (2).** LAB. 6. Pr., NURS 4230, 4231, and 4810. Coreq., NURS 4910. Application of leadership concepts in complex systems influencing health care.

**NURS 4920 TRANSITIONS TO PROFESSIONAL NURSING (2).** LEC. 2. Pr., NURS 4230 and NURS 4231 and NURS 4810. Coreq., NURS 4921. Synthesis of concepts essential for professional nursing.

**NURS 4921 NURSING PRACTICE PRECEPTORSHIP (5).** LAB. 15. Pr., NURS 4230 and NURS 4231 and NURS 4810. Coreq., NURS 4920. Application of concepts in the transition into professional nursing.

**NURS 4940 SPECIAL TOPICS IN NURSING (1-4).** LEC. SU. Focused study plan designed for students who have not met an identified curricular benchmark. Course may be repeated for a maximum of 4 credit hours.

**NURS 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

**NURS 7110 ADVANCED PHYSICAL ASSESSMENT/APPLIED CLINICAL CONCEPTS I (3).** LEC. 2, LEC. 4. Pr., NURS 7210 or (NURS 7220 or NURS 7230 or NURS 7240 or NURS 7310). Focus is on assessment, knowledge and techniques required for master's level prepared nurses in a clinical setting. Admission to the MSN Program Departmental approval.

**NURS 7120 APPLIED CLINICAL CONCEPTS II IN ADULT HEALTH NURSING (4).** LAB/SEM. 4. Pr., NURS 7110. Emphasis on the roles of the CNS in interventions

for diverse group experiencing alteration in health patterns. Departmental approval, see SON advisor.

**NURS 7210 THE ROLE OF THE CNS FOR ADVANCED PRACTICE (1).** LEC. 1. Preparation in implementation of the roles of the CNS for advanced practice. Departmental approval, see SON advisor.

**NURS 7220 ROLES AND ISSUES OF THE PRIMARY CARE PRACTITIONER (3).** LEC. 3. This course explores the complex process of role development for the advanced practice nurse within current health care systems. Competencies and role development issues of advanced nursing practice are included. Role transition and strategies for facilitating role acquisition and implementation including social, legal and ethical issues governing advanced practice in primary health care are addressed. Admission to the MSN Program Departmental approval.

**NURS 7230 HUMAN DIVERSITY (2).** LEC. 2. Exploration of multiple forms of human diversity, broadly conceptualized to include gender social class and ethnic/racial differences and similarities. Departmental approval, see SON advisor.

**NURS 7240 HEALTH PARITY IN DIVERSE POPULATIONS (2).** LEC. 2. Pr., NURS 7230. Exploration of health disparities related to healthcare system barriers for diverse groups. Departmental approval, see SON advisor.

**NURS 7250 HEALTHCARE POLICY AND ETHICS FOR THE NURSE LEADER (3).** LEC. 3. This course addresses the U.S. health care delivery system at micro and macro levels, problems, principles and the alternatives for managing problems in a systematic manner. Health policy, economic, and ethical principles and the relationship of these concepts to advocacy and leadership roles are explored. Admission to the MSN Program Departmental approval.

**NURS 7270 EVIDENCE-BASED PRACTICE (2).** LEC. 2. Pr., NURS 7260 Pr. NSG 6692. Basic research principles for evidence-based practice in diverse populations. Critical evaluation of nursing, education, and health-related research and how this evidence applies to the education of patients, student nurses, and health-care providers is included.

**NURS 7310 THEORETICAL FOUNDATIONS FOR TEACHING LEARNING IN NURSING (3).** LEC. 3. Application of a broad range of learning theorists to the education of nursing students, health providers, and patients. Departmental approval, see SON advisor.

**NURS 7320 DEVELOPMENT AND EVALUATION OF EDUCATIONAL PROGRAMS IN NURSING (3).** LEC. 3. Pr., NURS 7210 and NURS 7230 and NURS 7310. Analysis and evaluation of curriculum construction, selection of teaching strategies for diverse groups and individuals, and evaluation of learning outcomes in education of patients, health providers, and nursing students. Admission to the MSN Program Departmental approval.

**NURS 7330 DIAGNOSTIC REASONING AND CLINICAL MANAGEMENT (3).** LEC. 2, SEM. 1. Focus is on the process of collecting data and arriving at diagnostic and therapeutic conclusions to guide clinical management for patients across the lifespan. Preq: NSG 6671, NSG 6649, NURS 7110. Admission to the MSN Program, completion of pre-requisites, Departmental approval.

**NURS 7340 ADVANCED THEORETICAL FOUNDATIONS OF NURSING (3).** LEC. 3. Students explore the theoretical foundations of advanced nursing practice. The roles of the Master's prepared nurse are explored, along with central concepts inherent to nursing practice. Theories from nursing and related disciplines are examined with emphasis on application of theory to nursing practice. Admission to the MSN Program Departmental approval.

**NURS 7350 QUALITY, SAFETY, AND PREVENTION USING TECHNOLOGY (3).** LEC. 3. This course examines the concepts of clinical illness prevention, population health, quality and safety in health care, and the use of information technologies. Admission to the MSN Program Departmental approval.

**NURS 7360 EVIDENCE-BASED PRACTICE I (2).** LEC. 2. This course is designed to introduce the Master's student to evidence based practice. The foundations of EBP are explored including search strategies, research critique, and applications of EBP in advanced practice. Synthesis and evaluation of evidence using various models will be discussed. Admission to the MSN Program Departmental approval.

**NURS 7370 EVIDENCE-BASED PRACTICE II (2).** LEC. 2. Pr., NURS 7360. This course focuses on the concepts necessary for implementation and evaluation of an EBP project. Data collection tools, data analysis, and the presentation of data will be explored. Students will discuss change strategies, protection of human subjects, and the development of measurable outcomes. Admission to the MSN Program Departmental approval.

**NURS 7440 PRIMARY CARE I: WOMEN AND CHILDREN (3).** LEC. 1, SEM. 2. Pr., NURS 7330. Focus is on the primary care nurse practitioner's role in managing common acute and chronic health care problems in the adult and geriatric population in a variety of primary care settings. Admission to the MSN Program, completion of pre-requisites, Departmental approval.

**NURS 7550 PRIMARY CARE II: ADULTS AND ELDERLY (3).** LEC. 1, SEM. 2. Pr., NURS 7330. Focus is on the primary care nurse practitioner's role in managing common acute and chronic health care problems in the adult and problems in the adult and in a variety of primary care settings. Admission to the MSN Program, completion of pre-requisites, Departmental approval.

**NURS 7810 PRACTICUM IN TEACHING (3).** PRA. 3. Pr., NURS 7340 and NURS 7350 and NURS 7360 and NURS 7320 and NURS 7370 and NURS 7250 and EDLD

## Polymer and Fiber Engineering (PFEN)

8500. Synthesis of educational theories, research, and strategies in applying the roles of the educator in teaching clients, students, or care providers. Selected educational settings provide opportunities to practice the roles of the educator under guidance of qualified preceptor. This course will be a combination of professional seminars and teaching practice (180 hours). Admission to the MSN Program Departmental approval.

**NURS 7910 CNS PRACTICUM IN EDUCATION (7).** PRA/SEM. 26. Clinical practicum synthesizing the roles of the CNS to teach clients, nursing students, or healthcare providers. Departmental approval, see SON advisor.

**NURS 7920 PRIMARY CARE PRACTICUM (7).** LEC. 1, LEC. 6. Pr., NURS 7440 and NURS 7550. This course focus is on the application of knowledge and skills in the transition to the role of the primary care nurse practitioner. Admission to the MSN Program, completion of pre-requisites, Departmental approval.

**NURS 7930 DIRECTED STUDIES IN NURSING (1-6).** LEC. Directed independent study plan focuses on enrichment needs or special opportunities. Departmental approval, see SON advisor.

**NURS 7940 EVIDENCE-BASED PRACTICE III (2).** LEC. 2. Pr., NURS 7370 and NURS 7360. The focus of this course is the application of evidenced based practice concepts in advanced nursing practice. EBP III is a practicum course in which the student may implement the project proposed in EBP I & II or prepare a manuscript from that project that synthesizes the evidence and submit to a national refereed professional journal. Admission to the MSN Program Departmental approval.

**NURS 7980 RESEARCH PROJECT (1-10).** RES. Pr., NURS 7270. Implementation of research activities to address a clinical or educational research question for the non-thesis students. Departmental approval, see SON advisor. Course may be repeated for a maximum of 10 credit hours.

**NURS 7990 RESEARCH AND THESIS (1-10).** MST. Pr., NURS 7270. Implementation of research activities to address a clinical or educational research activity for the student in the thesis option. Departmental approval, see SON advisor. Course may be repeated for a maximum of 10 credit hours.

### Polymer and Fiber Engineering (PFEN)

Dr. Peter Schwartz - 844-4123

TEXTILE CHEMISTRY (TXCH)

**TXCH 4350 ENVIRONMENTAL ASPECTS OF DYEING AND FINISHING (1).** LEC. 1. Pr., PFEN 3400. Principles of textile waste separation and treatment; biological wastewater treatment, toxicology; waste minimization measures.

**TXCH 4410 ADVANCED DYEING THEORY (4).** LEC. 3, LAB. 3. Pr., PFEN 3400. Dye fiber bonding; thermodynamics and kinetics of dyeing; colorimetry and color systems.

**TXCH 4810 SENIOR PROJECT I (1).** IND. 1. Senior design project in the area of textile chemistry. Departmental approval.

**TXCH 4820 SENIOR PROJECT II (1).** IND. 1. Senior design project in the area of textile chemistry.

**TXCH 4970 SPECIAL TOPICS (1-3).** LEC. 1. Reading course with varying emphases to give opportunity for overview in textile chemistry. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

### POLYMER AND FIBER ENGINEERING (PFEN)

**PFEN 2270 INTRODUCTION TO ENGINEERED FIBROUS MATERIALS (4).** LEC. 4. Pr., ENGR 1110. The fundamentals of chemistry and engineering applied to fibrous assemblies illustrated using the properties required by end-use. Topics will include biomedical materials, architectural applications cables, ropes, and tethers, composite materials, filtration fabrics, ballistic protection, and health-care products. Credit will not be given for both FBEN 2100 or 2250 and PFEN 2270. Departmental approval.

**PFEN 2500 BIOMEDICAL TEXTILES (3).** LEC. 3. Pr., (P/C, CHEM 1010 or P/C, CHEM 1030 or P/C, CHEM 1110). Structure and properties of fibrous materials used in health-related applications including wound closings and dressings, arterial grafts, surgical nets, bone and dental cements, synthetic tendons, ligaments, and skin, super-absorbate materials, and prosthetic devices.

**PFEN 3100 FUNDAMENTALS OF POLYMERS (3).** LEC. 3. Pr., CHEM 2030 or CHEM 2070. Fundamentals of polymers: terminology, synthesis, structure, molecular weight, transitions of state, structure and uses.

**PFEN 3200 POLYMER PROCESSING (4).** LEC. 3, LAB. 3. Pr., ENGR 2200 and PFEN 3100. Characteristics and flow properties of polymers, film and fiber extrusion, molding technology, polymer material selection and processing.

**PFEN 3300 FIBROUS PRODUCT TESTING AND INSTRUMENTATION (3).** LEC. 2, LAB. 3. Pr., PFEN 2270. Theory and application of mechanical, physical and chemical measurement of fiber, yarn and fabric properties. Engineering principles of testing instrumentation. Fall.

**PFEN 3400 FUNDAMENTALS OF COLORATION (4).** LEC. 3, LAB. 3. Pr., PFEN 3100. Fundamentals of aqueous chemistry, interfacial processes, interactions of chemicals and fibrous/polymeric materials, color perception and coloration of fiber/polymers.

**PFEN 3500 STRUCTURE AND PROPERTIES OF POLYMERS AND FIBERS (3).** LEC. 3. Pr., PFEN 3100. Exploration of the relationships between the chemical structure, properties and uses of polymers and fibers. Emphasis on the importance of judicious material selection for particular end use applications. Spring.

**PFEN 3570 ENGINEERED PROTECTIVE MATERIALS (3).** LEC. 3. Pr., ENGR 1110 and MATH 1610 and MATH 1620 and CHEM 1030 and CHEM 1040 and P/C, PHYS 1600. An engineering approach to the design of protective materials and structures based on analyses to counter kinetics, chemical and biological threat hazards to people, animals and valuable objects.

**PFEN 4100 POLYMER CHARACTERIZATION (4).** LEC. 3, LAB. 3. Pr., PHYS 1610 and CHEM 2080 and PFEN 3500. Study of the major techniques for the physical characterization of polymers. Topics to be covered include molecular weight determination, spectroscopy (light, vibrational, nuclear magnetic resonance, electron spin resonance), X-ray diffraction, microscopy (light, electron), optical methods, and thermal analysis.

**PFEN 4200 POLYMERS FROM RENEWABLE RESOURCES (2).** LEC. 2. Pr., PFEN 3100. Fundamental aspects of natural, biodegradable polymers, including fibers, adhesives, films and coatings, their synthesis, their structure/properties relationships, and the microbiology of their degradation.

**PFEN 4300 ENGINEERED FIBROUS STRUCTURES (4).** LEC. 3, LAB. 3. Pr., PFEN 2270. Design and applications of high performance industrial fibrous structures for civil engineering, architecture and construction, filtration, medical, military and defense, pulp and paper industry, safety and protection, sports and recreation, transportation, agriculture and other industries. Fall.

**PFEN 4400 MECHANICS OF FLEXIBLE STRUCTURES (3).** LEC. 3. Pr., ENGR 2070 and ENGR 2200 and PFEN 2270. Analysis of mechanical behavior and physical properties of flexible structures such as fibers, yarns and fabrics.

**PFEN 4500 FIBER REINFORCED MATERIALS (3).** LEC. 3. Pr., ENGR 2070 and ENGR 2200 and MATH 2660 and PFEN 2270. Material properties and manufacture of fiber reinforced materials; perform structures such as weaves and braids, analysis, design methodology and applications. Spring.

**PFEN 4810 POLYMER AND FIBER ENGINEERING DESIGN I (3).** LEC. 1, IND/LEC. 2. Tools and skills needed to conduct an engineering design project.

**PFEN 4820 POLYMER AND FIBER ENGINEERING DESIGN II (3).** IND. 3. Undergraduate senior design project, second semester.

**PFEN 4970 SPECIAL TOPICS (1-3).** IND. Reading course with varying emphasis to give opportunity for overview in specific areas of engineering and technology. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**PFEN 5100 FABRICS FOR PAPER MAKING (3).** LEC. 3. Design, analysis and applications of forming fabrics, press felts and dryer fabrics. Departmental approval.

**PFEN 5200 POLYMER PROCESSING (4).** LEC. 3, LAB. 3. Pr., PFEN 2100. Characteristics and flow properties of polymers; film and fiber extrusion, molding technology, polymer material selection and processing. Credit will not be given for both PFEN 5200 and PFEN 6200.

**PFEN 5510 POLYMER CHEMISTRY (3).** LEC. 3. Pr., CHEM 2030 and ENGR 2050 and (PHYS 1610 or PHYS 1617). Polymer chemistry including polymer synthesis, polymer characterizations, polymer classes, solubility and swelling, and structure/property relationships.

**PFEN 5610 TEXTILE FINISHES (3).** LEC. 2, LAB. 3. Pr., PFEN 3400. Theory, chemistry and mechanics of textile finishes. Coating and grafting. Departmental approval.

**PFEN 6100 FABRICS FOR PAPER MAKING (3).** LEC. 3. Design, analysis and applications of forming fabrics, press felts and dryer fabrics. Spring. Departmental approval.

**PFEN 6200 POLYMER PROCESSING (4).** LEC. 3, LAB. 3. Characteristics and flow properties of polymers; film and fiber extrusion, molding technology, polymer material selection and processing. Credit will not be given for both PFEN 5200 and PFEN 6200. Departmental approval.

**PFEN 6250 ADVANCED ENGINEERING FIBROUS STRUCTURES (3).** LEC. 3. Pr., PFEN 4300. Application of advanced technology to the design, development and analysis of high performance industrial textiles. Departmental approval.

**PFEN 6510 POLYMER CHEMISTRY (3).** LEC. 3. Pr., CHEM 2030 and ENGR 2050 and (PHYS 1610 or PHYS 1617). Polymer chemistry including polymer synthesis, characterizations, classes, solubility and swelling, and structure/property relationships.

**PFEN 6610 TEXTILE FINISHES (3).** LEC. 2, LAB. 3. Pr., PFEN 3400. Theory, chemistry and mechanics of textile finishes. Coating and grafting. Departmental approval.

**PFEN 7100 INTEGRATED FIBER TO APPAREL QUALITY CONTROL (3).** LEC. 3. Pr., TXMT 3520. Quality-related topics for integrated textile and apparel operations. Spring. Departmental approval.

**PFEN 7210 FABRIC FORMATION AND PROPERTIES (4).** LEC. 3, LAB. 3. Pr., PFEN 4300. Advanced manufacturing process of fabric formation; fabric structure, geometry and mechanical properties; recent advances in theoretical and experimental fabric formation systems. Spring. Departmental approval.



## Philosophy (PHIL)

**PFEN 7310 STRUCTURE AND PROPERTIES OF POLYMERS (4).** LEC. 3, LAB. 3. Pr., CHEM 2080. The inter-relationships between chemical structure of a polymer, polymer properties and uses. Plastics, elastomers and fibers-synthesis and property requirements. Departmental approval.

**PFEN 7410 ADVANCED COLORATION AND INTERFACIAL PROCESSES (4).** LEC. 3, LAB. 3. Pr., PFEN 3400. Colorants and coloration principles for both fibrous and nonfibrous polymers; interfacial processes, such as sorption, adhesion, colloidal processes, surface tension. Departmental approval.

**PFEN 7500 MECHANICS OF TEXTILE REINFORCED MATERIALS (3).** LEC. 3. Pr., PFEN 4500. Design methods for textile reinforced materials, including micro and macro-mechanics, finite element analysis. Fall.

**PFEN 7610 ADVANCED POLYMERS FROM RENEWABLE RESOURCES (2).** LEC. 2. Aspects of natural, biodegradable polymers, including fibers, adhesives, films, coatings, their synthesis, their structure/properties relationships, and their microbial degradation. Departmental approval.

**PFEN 7620 ADVANCED MECHANICS OF FLEXIBLE STRUCTURES (3).** LEC. 3. Pr., PFEN 4400. Recent advances in modeling and analysis of mechanical behavior of flexible structures. Spring.

**PFEN 7700 ADVANCED METHODS IN POLYMER CHARACTERIZATION (4).** LEC. 4, LAB. 3. Pr., PFEN 6510. Important aspects and methods in polymer characterization. Departmental approval.

**PFEN 7770 INTRODUCTION TO CONDUCTING POLYMERS (3).** LEC. 3. Pr., PFEN 6510. This "Introduction of Conducting Polymers" course covers the most up to date research and applications in the areas of conducting polymers. This course provides extensive background on: mechanism of electrical conductivity of conducting polymers, classification of conducting polymers, potential applications of conducting polymers, and recent advance of the researches in the fields of conducting polymers. For example, organic solar cells, and organic light emitting diodes.

**PFEN 7910 POLYMER RHEOLOGY (3).** LEC. 3. Pr., PFEN 6510. Important aspects of elementary modern rheology. Departmental approval.

**PFEN 7950 GRADUATE SEMINAR (1).** SEM. 1. SU. Presentation of departmental research; practicing written and oral communication skills. Course may be repeated with change in topic. Fall.

**PFEN 7960 SPECIAL PROBLEMS AND FIBER ENGINEERING (1-3).** IND. Specialized project research with varying emphasis in particular areas of polymers and fibers. Course may be repeated for a maximum of 12 credit hours.

**PFEN 7970 SPECIAL TOPICS (3).** LEC. 3. Analysis of current issues in the area of polymers and fibers. Concurrent registration in ITAS 8950 is advised. Course may be repeated for a maximum of 12 credit hours.

**PFEN 7980 GRADUATE PROJECT (1-3).** IND. In-depth work in a particular project in polymers and fibers. Course may be repeated for a maximum of 12 credit hours. Course may be repeated for a maximum of 12 credit hours.

**PFEN 7990 RESEARCH AND THESIS (1-10).** MST. Required of all students seeking an advanced degree in the department. Course may be repeated with a change in topic. Departmental approval. Course may be repeated with change in topics.

**PFEN 8200 ADVANCED TEXTILE STRUCTURE DESIGN AND DEVELOPMENT (3).** LEC. 3. Technical fabric design and development of complex woven, knit, braided and tufted structures for high performance applications. Fall.

**PFEN 8990 RESEARCH AND DISSERTATION (1-10).** DSR. SU. PhD Research and Dissertation. Course may be repeated with change in topics.

## Philosophy (PHIL)

Dr. G. Michael Watkins - 844-4344

**PHIL 1010 INTRODUCTION TO LOGIC (3).** LEC. 3. Philosophy Core. Basic logical principles and applications: definition, informal fallacies, categorical logic, elementary propositional logic, analogy and selected inductive inferences.

**PHIL 1017 HONORS LOGIC (3).** LEC. 3. Pr., Honors College. Philosophy Core. Basic logical principles and applications: definition, informal fallacies, categorical logic, elementary propositional logic, analogy and selected inductive inferences.

**PHIL 1020 INTRODUCTION TO ETHICS (3).** LEC. 3. Philosophy Core. Major ethical theories from the history of philosophy, their foundations in epistemology and metaphysics, and their extension into social thought.

**PHIL 1027 HONORS ETHICS (3).** LEC. 3. Pr., Honors College. Philosophy Core. Major ethical theories from the history of philosophy, their foundations in epistemology and metaphysics, and their extension into social thought.

**PHIL 1030 ETHICS AND THE HEALTH SCIENCES (3).** LEC. 3. Philosophy Core. Ethical inquiry into such major issues as abortion, eugenics, physician-assisted suicide, euthanasia, health-care delivery methods, and informed consent.

**PHIL 1037 HONORS ETHICS AND THE HEALTH SCIENCES (3).** LEC. 3. Pr., Honors College. Philosophy Core. Ethical inquiry into such major issues as abortion, eugenics, physician-assisted suicide, euthanasia, health-care delivery methods, and informed consent.

**PHIL 1040 BUSINESS ETHICS (3).** LEC. 3. Philosophy Core. Types of ethical theory; application to such normative issues in commerce as advertising, management, and business abroad.

**PHIL 1050 INTRODUCTION TO POLITICAL PHILOSOPHY (3).** LEC. 3. Philosophy Core. Principal theories and thinkers in political philosophy from antiquity to the present.

**PHIL 1060 PHILOSOPHY EAST AND WEST (3).** LEC. 3. Principal thinkers and theories in four philosophical traditions: Indian, Chinese, European, and Arabic.

**PHIL 1070 ART, VALUE, AND SOCIETY (3).** LEC. 3. Introduction to philosophical aesthetics, focusing on relationship of artistic value and the extra-artistic values of societies that house them.

**PHIL 1080 INTRODUCTION TO PHILOSOPHY OF RELIGION (3).** LEC. 3. Philosophy of religion, including: God's existence, relationship of reason and faith, religious epistemology, and language.

**PHIL 1090 PHILOSOPHY OF RACE GENDER (3).** LEC. 3. Philosophical issues associated with race and gender, including role of biology and social construction, nature of prejudice, questions about justice and redress.

**PHIL 1100 INTRODUCTION TO PHILOSOPHY (3).** LEC. 3. The methods of philosophical inquiry and an examination of selected philosophical topics.

**PHIL 3050 AESTHETICS (3).** LEC. 3. Pr., PHIL 1000-1999. (Area I) Modern and contemporary theories of the nature of art.

**PHIL 3060 PHILOSOPHY OF FILM (3).** LEC. 3. Pr., PHIL 1000-1999. (Area I) Consideration of philosophical issues, both those raised within certain films and those raised by the nature of representation in general. 3 hours 1000-level Philosophy.

**PHIL 3100 INTERMEDIATE ETHICS (3).** LEC. 3. Pr., PHIL 1000-1999. (Area I) An overview of contemporary questions and positions in ethics. Topics may include moral realism, the rationality of moral action, subjectivism and non-cognitivism, naturalism, and various theories of practical reason. 3 hours 1000-level Philosophy.

**PHIL 3110 SYMBOLIC LOGIC (3).** LEC. 3. Pr., PHIL 1000-1999. (Area IV) Propositional logic and predicate logic through relations: natural language and logic; some philosophical problems in logic.

**PHIL 3300 PHILOSOPHY OF RELIGION (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) Nature of religion, religious experience, religious knowledge, religious theories of humanity and evil, arguments for the existence of God and immortality of the soul.

**PHIL 3330 HISTORY OF ANCIENT PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area III) Philosophical thought from the Pre-Socratics through the Hellenistic philosophers, emphasizing Plato and Aristotle.

**PHIL 3340 HISTORY OF EARLY MODERN PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area III) Philosophical thought from Descartes to Kant, emphasizing major figures in the rationalist and empiricist traditions.

**PHIL 3350 HISTORY OF LATE MODERN AND PRE-ANALYTIC PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area III) Philosophical thought from Kant to the Pre-Analytic philosophers. In addition to Kant, figures may include Schopenhauer, Hegel, Nietzsche, Kierkegaard, James, Brentano, Frege, Meinong, Cook-Wilson, Bradley, and Moore.

**PHIL 3360 HISTORY OF EARLY ANALYTIC PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area III) Philosophical thought in the early Analytic period. Central figures will include Russell, Moore, Wittgenstein, and members of the Vienna Circle. 3 hours 1000-level Philosophy.

**PHIL 3400 MEDIEVAL PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area III) Philosophical thought from late antiquity through the Middle Ages. Emphasis on Plotinus, Islamic thinkers, Augustine, Abelard, Anselm, and Thomas Aquinas.

**PHIL 3500 EPISTEMOLOGY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) The origin, nature, kinds, and validity of knowledge with a consideration of faith, institution, belief, opinion, certainty, and probability.

**PHIL 3520 PRAGMATISM AND AMERICAN PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) Emphasis on Peirce, James and Dewey. Some philosophical issues examined from a pragmatic viewpoint.

**PHIL 3540 PHILOSOPHY OF MIND (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) Classical and modern texts on the phenomenology of consciousness and mind-body problems.

**PHIL 3550 PHILOSOPHY OF LANGUAGE (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) A survey of contemporary philosophical discussions of the nature of language.

**PHIL 3600 POLITICAL PHILOSOPHY (3).** LEC. 3. Pr., PHIL 1000-1999. (Area I) The political thought of both classical and contemporary thinkers, including Plato, Aristotle, Machiavelli, Hobbes, Locke, Mill, Spencer, Marx, Rawls, and Nozick.

**PHIL 3640 PHILOSOPHY OF LAW (3).** LEC. 3. Pr., PHIL 1000-1999. (Area I) The function of law, including judicial reasoning, ground of authority, natural law, legal responsibility, punishment, civil disobedience, and the relation of law to ethics.

**PHIL 3660 APPLIED ETHICS (3).** LEC. 3. Pr., PHIL 1000-1999. (Area I) Advanced philosophical study of the ethical issues that arise in such intellectual endeavors as law, business, military science, engineering, etc.

## Physics (PHYS)

**PHIL 3700 METAPHYSICS (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) A critical analysis of such topics as monism and pluralism, freedom and determinism, realism and nominalism, and the mind-body problem.

**PHIL 3740 EXISTENTIALISM (3).** LEC. 3. Pr., PHIL 1000-1999. (Area II) Selected works of such authors as Kierkegaard, Nietzsche, Sartre, Jaspers, and Heidegger.

**PHIL 3970 SPECIAL TOPICS (3).** LEC. 3. Pr., PHIL 1000-1999. Topics vary. Course may be repeated for a maximum of 6 hours. Course may be repeated for a maximum of 6 credit hours.

**PHIL 4110 METALOGIC (3).** LEC. 3. Pr., PHIL 3100. (Area IV) Soundness, completeness, and other metalogical results for propositional and predicate logics.

**PHIL 4500 PHILOSOPHY OF SCIENCE (3).** LEC. 3. Pr., PHIL 3000-3999. (Area II) Empirical meaning, verifiability, measurement, probability, causality and determinism.

**PHIL 4540 PHENOMENOLOGY (3).** LEC. 3. Pr., PHIL 3000-3999. (Area II) The phenomenological method and its application in the works of William James, Husserl, Heidegger, Sartre, and Merleau-Ponty.

**PHIL 4620 MODERN ETHICAL THEORIES (3).** LEC. 3. Pr., PHIL 3000-3999. (Area I) Recent analyses of the meanings, presuppositions, and problems of ethical terms and judgments.

**PHIL 4700 PLATO (3).** LEC. 3. Pr., PHIL 3000-3999. (Area III) Plato's Methodology, epistemology, metaphysics, ethics, political theory.

**PHIL 4750 ARISTOTLE (3).** LEC. 3. Pr., PHIL 3000-3999. (Area III) Aristotle's logic, epistemology, metaphysics, ethics, political theory, and psychology.

**PHIL 4780 KANT AND TRANSCENDENTAL IDEALISM (3).** LEC. 3. Pr., PHIL 3000-3999. (Area III) The philosophy of Kant in particular but also of the early Fichte and Schelling, and of neo-Kantians.

**PHIL 4960 SPECIAL PROBLEMS IN PHILOSOPHY (1-6).** IND. Specific reading programs on a particular philosopher, period or problem. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PHIL 4967 HONORS SPECIAL PROBLEMS IN PHILOSOPHY (1-3).** IND. Pr., Honors College. Reading programs on a philosopher, period or problem. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**PHIL 4970 SPECIAL TOPICS (3).** LEC. 3. Pr., PHIL 3000-3999. Advanced topics in ethics and value theory, metaphysics and epistemology, or history of philosophy. Emphasis on readings drawn from the contemporary, professional literature. 6 hours 3000-level Philosophy. Course may be repeated for a maximum of 9 credit hours.

**PHIL 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Senior thesis for students in the university Honors College. Course may be repeated for a maximum of 3 credit hours.

**PHIL 5950 SEMINAR (1-3).** SEM. The content will vary from movements of thought to an intensive study of one of the great thinkers. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PHIL 6950 SEMINAR (1-3).** SEM. The content will vary from movements of thought to an extensive study of one of the great thinkers. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

## RELIGIOUS STUDIES (RELG)

**RELG 1010 INTRODUCTION TO RELIGIOUS STUDIES (3).** LEC. 3. Major themes in religion, including religious experience, religion and society and the diversity of religions. Examples from various religious traditions.

**RELG 1020 INTRODUCTION TO THE HEBREW SCRIPTURES (3).** LEC. 3. INTRODUCTION TO THE HEBREW SCRIPTURES Historical-critical study of the Hebrew Scriptures in their cultural setting. Emphasis on development of ancient Hebrew thought.

**RELG 1030 INTRODUCTION TO THE NEW TESTAMENT (3).** LEC. 3. Historical-critical study of the New Testament in its cultural setting. Major issues in New Testament study.

**RELG 2020 THE CURRENT RELIGIOUS SCENE (3).** LEC. 3. Religious themes and developments in contemporary American Life.

**RELG 2030 HISTORY OF CHRISTIANITY (3).** LEC. 3. Development of Christianity from 100 C.B. to the present. Major personalities, events and movements.

**RELG 3330 EASTERN RELIGIONS (3).** LEC. 3. Hinduism, Buddhism and Confucianism with secondary attention to other Asian religions.

**RELG 3340 WESTERN RELIGIONS (3).** LEC. 3. Islam, Judaism and Christianity, with attention to Druze religion and Bah'al.

**RELG 4350 20TH CENTURY RELIGIOUS THOUGHT (3).** LEC. 3. Major 20th Century theologians: Protestant, Catholic, Jewish.

**RELG 4960 SPECIAL PROBLEMS IN RELIGIOUS STUDIES (3).** LEC. 3. A program of independent study on a special topic. Course may be repeated for a maximum of 6 credit hours.

**RELG 4967 HONORS SPECIAL PROBLEMS (3).** LEC. 3. Pr., Honors College. Discuss readings on specialized topics in Religious Studies.

**RELG 4970 SPECIAL TOPICS (3).** LEC. 3. Course may be repeated with change in topic.

## Physics (PHYS)

Dr. Joseph D. Perez - 844-4264

**PHYS 1000 FOUNDATIONS OF PHYSICS (4).** LEC. 3, LAB. 2. Science Core. Newton's Laws, momentum and energy, solids, liquids, gases, plasma, thermodynamics, electricity, magnetism, light, atomic and nuclear physics. Students who have previous credit in any higher-numbered physics course may not receive credit.

**PHYS 1150 ASTRONOMY (4).** LEC. 3, LAB. 3. Science Core. Open to non-science majors. Earth, the solar system, stars, neutron stars, black holes, supernova, galaxies, the expanding universe, and modern cosmological theories.

**PHYS 1500 GENERAL PHYSICS I (4).** LEC. 3, LAB. 3. Science Core. Introduction to Newton's Laws, gravitation and cosmology, concept of conservation laws, solids and fluids, thermodynamics. Math at level of MATH 1130 or higher is expected.

**PHYS 1510 GENERAL PHYSICS II (4).** LEC. 3, LAB. 3. Science Core. Electricity and magnetism, AC circuits, waves, nuclear physics, radioactivity and particle physics. Physics at the level of PHYS 1500 or higher is expected.

**PHYS 1600 ENGINEERING PHYSICS I (4).** LEC. 3, LAB. 3. Science Core. Introduction to Newton's Laws, gravitation, cosmology, conservation of energy, momentum and angular momentum, special relativity, and fluids using introductory calculus. Math at the level of MATH 1610 or higher is expected, at least concurrently.

**PHYS 1607 HONORS PHYSICS I (4).** LEC. 3, LAB. 3. Pr., Honors College. Science Core. Honors version of PHYS 1600. Membership in the Honors College or Departmental approval required. Recommended for Physics majors. Math at the level of MATH1610 or higher is expected, at least concurrently.

**PHYS 1610 ENGINEERING PHYSICS II (4).** LEC. 3, LAB. 3. Science Core. Thermodynamics, electricity and magnetism, simple AC circuits, waves, and geometric optics. Physics at the level of PHYS 1600 or higher is expected. Math at the level of MATH 1620 or higher is expected at least concurrently.

**PHYS 1617 HONORS PHYSICS II (4).** LEC. 3, LAB. 3. Pr., Honors College. Science Core. Honors version of PHYS 1610. Membership in the Honors College or Departmental approval required. Recommended for Physics majors. Math at the level of MATH 1620 or higher is expected, at least concurrently. Physic sat the level of PHYS 1600 or higher is expected.

**PHYS 2100 INTERMEDIATE MECHANICS (3).** LEC. 3. Pr., PHYS 1617 or PHYS 1610. Principles and applications of Newtonian mechanics, no inertial reference frames, harmonic motion, central forces, rigid bodies, introduction to Lagrangian and Hamiltonian mechanics.

**PHYS 2200 INTRODUCTORY QUANTUM PHYSICS AND RELATIVITY (3).** LEC. 3. Pr., PHYS 1617 or PHYS 1610. Observational foundations of quantum physics, relativity and developments of several branches of physics up to their present frontiers.

**PHYS 2300 PHYSICS LABORATORY SKILLS (2).** LAB. 6. Pr., PHYS 1617 or PHYS 1610. The measurement process and its unavoidable uncertainties; standard laboratory instruments; data analysis techniques and tools.

**PHYS 3100 INTERMEDIATE ELECTRICITY AND MAGNETISM (3).** LEC. 3. Pr., (PHYS 1617 or PHYS 1610) and (MATH 2630 or MATH 2730) Electrostatics, Magneto statics, Laplace's equation, boundary-value problems, multiple expansions, dielectric and magnetic materials. Faraday's law, AC circuits, and Maxwell's equations.

**PHYS 3200 STATISTICAL THERMODYNAMICS (3).** LEC. 3. Pr., PHYS 2200. The basic laws of thermodynamics, kinetic theory, and statistical mechanics including entropy, the partition function, free energy, and the quantum statistics of Fermions and Bosons.

**PHYS 3500 PHYSICS OF THE WORLD AROUND US (3).** LEC. 3. Interdisciplinary topic e.g. Biophysics, Astrophysics, Physics of Weather, Physics of Music, or Environmental Physics. Course may be repeated for a maximum of 12 credit hours.

**PHYS 3501 PHYSICS OF THE WORLD AROUND US LABORATORY (1).** LAB. 3. Laboratory course required for certain topics for PHYS 3500. One 3 hour session per week.

**PHYS 4100 FUNDAMENTALS OF QUANTUM MECHANICS (3).** LEC. 3. Pr., PHYS 2200 and MATH 2650. Schrodinger equation, stationary and time-dependent solutions, spin and the exclusion principle, perturbation theory, scattering and resonances, the interpretation of quantum mechanics.

**PHYS 4200 FUNDAMENTAL EXPERIMENTS IN PHYSICS (2).** LAB. 6. Pr., PHYS 2300. Experiments that demonstrate the fundamental ideas and facts of physics. Data will be collected, analyzed, interpreted and reported in comprehensive lab reports.

**PHYS 4900 DIRECTED STUDIES (1-5).** IND. SU. Student will investigate a topic of interest under the direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

## Plant Pathology (PLPA)

**PHYS 4930 DIRECTED STUDIES IN PHYSICS (1-5).** IND. Student will study a topic of interest under the direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**PHYS 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PHYS 4980 UNDERGRADUATE RESEARCH IN PHYSICS (1-5).** IND. Student will work under the direction of a faculty member on a problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**PHYS 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PHYS 5100 APPLICATIONS OF QUANTUM MECHANICS (3).** LEC. 3. Pr., PHYS 4100. Quantum mechanics applied to atomic physics, solid state physics, nuclear physics, particle physics, electrodynamics, and cosmology.

**PHYS 5500 FUNDAMENTALS OF PHYSICS (3).** LEC. 3. A subject such as Wave Mechanics, Mathematical Physics, Nonlinear Dynamics, Optics, Nuclear Physics, Elementary Particles, Relativity, or Electrodynamics. Course may be repeated for a maximum of 9 credit hours.

**PHYS 5600 FRONTIERS OF PHYSICS (3).** LEC. 3. A subject from the research areas in the Department such as Solid State, Atomic, Plasma, Space, or Computational Physics will be selected by the lecturer. Course may be repeated for a maximum of 9 credit hours.

**PHYS 5610 INTRODUCTION TO SOLID STATE PHYSICS (3).** LEC. 3. Lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic, superconducting and defect properties of solids.

**PHYS 5620 SURVEY OF PLASMA PHYSICS (3).** LEC. 3. Pr., PHYS 3100 Single particle motions: fluid description of a plasma; plasma waves and oscillations; kinetic description, diffusion, and resistivity; non-linear effects.

**PHYS 6100 APPLICATIONS OF QUANTUM MECHANICS (3).** LEC. 3. Quantum mechanics applied to atomic physics, solid state physics, nuclear physics, particle physics, electrodynamics, and cosmology.

**PHYS 6500 FUNDAMENTALS OF PHYSICS (3).** LEC. 3. A subject such as Wave Mechanics, Mathematical Physics, Nonlinear Dynamics, Optics, Nuclear Physics, Elementary Particles, Relativity, or Electrodynamics. Course may be repeated for a maximum of 9 credit hours.

**PHYS 6600 FRONTIERS OF PHYSICS (3).** LEC. 3. A subject from the research areas in the Department such as Solid State, Atomic, Plasma, Space, or Computational Physics will be selected by the lecturer. Course may be repeated for a maximum of 9 credit hours.

**PHYS 6610 INTRODUCTION TO SOLID STATE PHYSICS (3).** LEC. 3. Lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic, superconducting and defect properties of solids.

**PHYS 6620 SURVEY OF PLASMA PHYSICS (3).** LEC. 3. Single particle motions: fluid description of a plasma; plasma waves and oscillations; kinetic description, diffusion, and resistivity; non-linear effects.

**PHYS 7100 CLASSICAL MECHANICS (3).** LEC. 3. Lagrangian and Hamiltonian formulations of mechanics, canonical transforms. Hamilton-Jacobi theories, action angle variables, rigid rotators, normal modes, and mechanics of continuous media.

**PHYS 7200 ELECTRICITY AND MAGNETISM I (3).** LEC. 3. Elastostatics, special function expansions, magneto statics, linear media and Maxwell's equations.

**PHYS 7250 ELECTRICITY AND MAGNETISM II (3).** LEC. 3. Time dependent Maxwell theory, wave propagation and dispersion, diffraction, scattering, radiation, relativistic, covariance and applications.

**PHYS 7300 QUANTUM MECHANICS I (3).** LEC. 3. Schrodinger wave equation, discrete and continuous spectra, matrix formulation, perturbation theory.

**PHYS 7350 QUANTUM MECHANICS II (3).** LEC. 3. Time-dependent approximation methods, identical, relativistic wave equations, and second quantization.

**PHYS 7400 STATISTICAL PHYSICS (3).** LEC. 3. Thermodynamic quantities, equilibrium ensembles for classical and quantum systems, fluctuations, phase transitions and critical phenomena.

**PHYS 7520 NONLINEAR DYNAMICS (3).** LEC. 3. Dynamical systems, maps, flows, fixed points and neighborhoods, chaos, fractals and fractal dimensions. Lyapunov exponents, strange attractors, dissipative and Hamiltonian systems, controlling chaos.

**PHYS 7540 NON-EQUILIBRIUM STATISTICAL MECHANICS (3).** LEC. 3. Introduces the fundamental concepts of non-equilibrium statistical mechanics, develops basic transport theories, and simulates statistic properties with Monte-Carlo and molecular dynamic methods.

**PHYS 7900 DIRECTED STUDIES (1-5).** IND. SU. Student will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 6 credit hours.

**PHYS 7930 DIRECTED STUDIES (1-5).** IND. Student will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 6 credit hours.

**PHYS 7950 PHYSICS COLLOQUIUM (1).** SEM. SU. Offers a series of talks presented by invited speakers on broad fields of physics. Check with graduate advisor for credit allowed. Course may be repeated for a maximum of 6 credit hours.

**PHYS 7970 SPECIAL TOPICS IN PHYSICS (1-5).** SEM. Seminar or lecture series in a rapidly advancing specialty of physics. Course may be repeated for a maximum of 6 credit hours.

**PHYS 7990 RESEARCH AND THESIS (1-10).** MST. May be repeated as often as is appropriate. Course may be repeated with change in topics.

**PHYS 8100 RELATIVISTIC QUANTUM MECHANICS (3).** LEC. 3. Dirac equation, 1D barrier scattering, 3D central potentials, S-matrix theory, Feynman diagrams, quantum electrodynamics, renormalization, tree and loop level problems.

**PHYS 8200 INTRODUCTION TO ATOMIC PHYSICS (3).** LEC. 3. Hydrogen atom, Hartree-Fock theory, radioactive transitions, photo ionization, auto ionization, electron-atom scattering.

**PHYS 8600 PLASMA PHYSICS (3).** LEC. 3. A detailed study of plasma physics including particle orbit theory, magneto hydrodynamics, plasma waves and transport phenomena.

**PHYS 8700 SOLID STATE PHYSICS (3).** LEC. 3. Atomic and electronic structures of solids and the associated electrical, optical and transport properties.

**PHYS 8900 DIRECTED STUDIES (1-5).** IND. SU. Students will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 10 credit hours.

**PHYS 8930 DIRECTED STUDIES IN ADVANCED PHYSICS (1-5).** IND. Student will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 10 credit hours.

**PHYS 8970 SPECIAL TOPICS IN ADVANCED PHYSICS (1-5).** LEC. Topic at the forefront of physics research will be chosen by the lecturer. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**PHYS 8990 RESEARCH AND DISSERTATION (1-10).** DSR. May be repeated as often as is appropriate. Course may be repeated with change in topics.

## Plant Pathology (PLPA)

Dr. Kathy Lawrence - 844-1956

**PLPA 2000 PESTS, PATHOGENS, PARASITES, AND PEOPLE (3).** LEC. 3. Past and present problems of pests and disease involving humans and the food chain.

**PLPA 3000/3003/3004 GENERAL PLANT PATHOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030. Survey of plant diseases common in Alabama, including symptom recognition, pathogen biology and management of plant diseases. Course will not be given for both PLPA 3000 and PLPA 3003/3004.

**PLPA 4960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-3).** IND. Departmental approval. Supervised work on a project in plant pathology. Areas of study are: A. Mycology; B. Nematology; C. Virology; D. Bacteriology; E. Extension and Clinic Experience; F. Physiological and Molecular Approaches. Course may be repeated for a maximum of 3 credit hours.

**PLPA 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Assigned readings on topics pertinent to plant pathology or individual student endeavor consisting of directed research and writing of honor's thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PLPA 5050 PLANT DISEASE DIAGNOSIS (3).** LEC. 1, LAB. 3. Pr., PLPA 3000. Approaches, techniques, and practical experience in diagnosis of plant diseases. Credit will not be given for both PLPA 5050 and PLPA 6050. Summer.

**PLPA 5060 PLANT DISEASE MANAGEMENT (3).** LEC. 3. Pr., PLPA 3000. Aspects of plant disease management including cultural practices, plant resistance, biological and chemical control, and disease forecasting. Spring.

**PLPA 5200 INTRODUCTORY MYCOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030. A systematic survey of the fungi with emphasis on Morphology. Credit will not be given for both PLPA 5200 and PLPA 6200. Fall.

**PLPA 5400 PLANT VIROLOGY (3).** LEC. 3. Pr., PLPA 3000. Introduction to plant viruses and the diseases they cause; virus particle structure and replication strategies; disease identification by symptoms and detection of pathogen; transmission, ecology, epidemiology and control. Spring. Departmental approval.

**PLPA 6050 PLANT DISEASE DIAGNOSIS (3).** LEC. 1, LAB. 3. Pr., PLPA 3000 Experience with plant disease diagnosis procedures and the diagnosis of many common plant diseases. Summer.

**PLPA 6060 PLANT DISEASE MANAGEMENT (3).** LEC. 3. Pr., PLPA 3000. Aspects of plant disease management including cultural practices, plant resistance, biological and chemical control, and disease forecasting. Spring.

**PLPA 6200 INTRODUCTORY MYCOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030. A systematic survey of the fungi with emphasis on morphology. Credit will not be given for both PLPA 5200 and PLPA 6200. Fall.

**PLPA 6400 PLANT VIROLOGY (3).** LEC. 3. Pr., PLPA 3000. Introduction to plant viruses and the diseases they cause; virus particle structure and replication strate-

gies; disease identification by symptoms and detection of pathogen; transmission, ecology, epidemiology and control. Departmental approval.

**PLPA 7080 FIELD SURVEY OF PLANT PATHOLOGY (3).** LEC. 1, LAB. 6. Pr., PLPA 3000. Practical aspects of plant diseases under field conditions, on-site visits via field trips; discussion of experimental design for field research. Summer.

**PLPA 7300 PLANT-BACTERIAL INTERACTIONS (4).** LEC. 3, LAB. 2. Pr., BIOL 1030. Biochemical and molecular basis of plant-bacterial interactions, including colonization, pathogenesis, symbiotic and associative nitrogen fixation, and transformation. Fall. Departmental approval.

**PLPA 7500 PLANT NEMATODOLOGY (3).** LEC. 2, LAB. 2. Pr., BIOL 1030. The various roles of nematodes in relation to plant diseases. Identification of plant nematodes; nature of pathogen city; principles and practices of control; recent advances in phytonematology. Spring. Departmental approval.

**PLPA 7820 RESEARCH PROPOSAL WRITING (4).** LEC. 3. Experience in all aspects of writing and reviewing competitive research proposals through a workshop-format culminating in each student writing a proposal on research topics of their choosing. Fall.

**PLPA 7860 PLANT DISEASE EPIDEMIOLOGY (3).** LEC. 3. Pr., PLPA 3000. Aspects of plant disease epidemiology including disease assessment and temporal progress, pathogen spread, and yield loss determination. Spring.

**PLPA 7861 PLANT DISEASE EPIDEMIOLOGY LABORATORY (2).** LAB. 4. Coreq., PLPA 7860. Quantitative aspects of plant disease epidemiology including spatial and temporal modeling, and disease system simulation.

**PLPA 7900 DIRECTED STUDIES IN PLANT PATHOLOGY (1-5).** LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

**PLPA 7910 TEACHING PRACTICUM (1).** LAB. 2. SU. Departmental approval. The teaching practicum will address the practical and heretical issues of laboratory learning and facilitating the skills of pedagogy. Course may be repeated for a maximum of 3 credit hours.

**PLPA 7930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1).** LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 2 credit hours.

**PLPA 7950 SEMINAR IN PLANT PATHOLOGY (1).** SEM. 1. SU. Seminar presentations on current departmental research and current issues in plant pathology and related disciplines. Fall, Spring. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

**PLPA 7960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-5).** IND. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in plant pathology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

**PLPA 7990 RESEARCH AND THESIS (1-10).** MST. Research and thesis on problems in plant pathology. Departmental approval. Course may be repeated with change in topics.

**PLPA 8880 PHYSIOLOGICAL AND MOLECULAR PLANT PATHOLOGY (3).** LEC. 2, LAB. 2. Pr., CHEM 6180 and BIOL 4230. Comprehensive coverage of physiology and molecular biology of plant-pathogen interactions. Spring. Departmental approval.

**PLPA 8900 DIRECTED STUDIES IN PLANT PATHOLOGY (1-5).** LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

**PLPA 8910 TEACHING PRACTICUM (1-3).** LAB. 2. SU. Departmental approval. Practical and theoretical issues of laboratory learning, and pedagogical facilitation. Required of all PhD students. Course may be repeated for a maximum of 3 credit hours.

**PLPA 8930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1).** LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 3 credit hours.

**PLPA 8950 SEMINAR (1).** SEM. 1. SU. Presentations and discussion of scientific literature or dissertation research findings. Required for all PhD candidates. Course may be repeated for a maximum of 2 credit hours.

**PLPA 8960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-5).** IND. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in plant pathology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

**PLPA 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Research and dissertation on problems in plant pathology. Departmental approval. Course may be repeated with change in topics.

## Political Science (POLI)

Dr. Gerry Gryski - 844-5370

### HEALTH ADMINISTRATION (HADM)

**HADM 2100 MEDICAL TERMINOLOGY (3).** LEC. 3. Prefixes, suffixes, and word roots used in the language of medicine; medical vocabulary and terms related to the health care field.

**HADM 2200 HEALTH POLICY (3).** LEC. 3. Pr., POLI 1090 or POLI 2100. Political issues affecting health care services.

**HADM 3000 GATEWAY TO HEALTH CARE ADMINISTRATION (3).** LEC. 3. Pr., ACCT 2110 and ACCT 2210 and MATH 1690. Basic concepts and principles of health care administration.

**HADM 3300 HEALTH CARE POLICY (3).** LEC. 3. Pr., ACCT 2110 and ACCT 2210 and MATH 1690. Political services that affect health care services.

**HADM 3700 HEALTH LAW (3).** LEC. 3. Pr., POLI 1090 or POLI 1097 or POLI 1093 or POLI 2100. Legal issues that arise between patients and health care providers.

**HADM 4000 DEVELOPING CARE ORGANIZATIONS (3).** LEC. 3. Pr., HADM 2200 and HADM 3300 and MATH 1690. Organizational strategies for effective interfacing of medical, nursing, allied health and administrative staff with patient needs.

**HADM 4100 FINANCE IN HEALTH ADMINISTRATION (3).** LEC. 3. Pr., HADM 2200 and HADM 3300 and MATH 1690 and (ACCT 2110 or ACCT 2117) and (ACCT 2210 or ACCT 2217). Review of issues in reimbursement structures, regulatory mechanisms, cost control and related factors affecting administration of health service organizations.

**HADM 4200 HEALTH CARE INSURANCE AND REIMBURSEMENT (3).** LEC. 3. Pr., HADM 3000 and HADM 3300. Health insurance operations, principles, payment methods and contracts.

**HADM 4800 HEALTH ADMINISTRATION AND REGULATION (3).** LEC. 3. Pr., HADM 2200 and HADM 3300. Government regulatory programs affecting administration of health services organizations.

**HADM 4810 CHANGE IN HEALTH ADMINISTRATION (3).** LEC. 3. Pr., HADM 2200 and HADM 3300. Changes in modern technology, cultural diversity, and governmental policies on the administration of health services organizations.

**HADM 4820 LONG-TERM CARE ADMINISTRATION (3).** LEC. 3. Pr., HADM 2200 and HADM 3300. Analysis of the components (e.g. nursing homes, home health care) of the long-term care system for the elderly.

**HADM 4830 COMPARATIVE HEALTH CARE SYSTEMS (3).** LEC. 3. Pr., HADM 3000 and HADM 3300. Comparative Study and analysis of health care systems around the world.

**HADM 4850 LONG-TERM CARE POLICY (3).** LEC. 3. Pr., HADM 2200 and HADM 3300. Policy issues surrounding the provision of long-term care to the elderly.

**HADM 4880 HEALTH INFORMATION TECHNOLOGY (3).** LEC. 3. Pr., HADM 3000 and HADM 3300. Overview and utilization of health care information technology in health care administration.

**HADM 4920 INTERNSHIP (6).** INT. SU. Internship in selected areas of Health Administration. GPA of at least 2.8 in HADM courses.

**HADM 4921 HEALTH CARE ADMIN INTERNSHIP (3).** INT. 3. SU. Pr., HADM 3000 and HADM 3300 and HADM 2100 and FINC 3810 and P/C, HADM 4200 and P/C, HRMN 3420. Three hours internship in a selected area of health administration.

**HADM 4930 DIRECTED STUDIES (1-3).** AAB/IND. Directed studies in Health Administration. Course may be repeated for a maximum of 3 credit hours.

**HADM 4950 CAPSTONE SEMINAR (3).** LEC. 3. Pr., HADM 4000. Integrates knowledge from courses and internship; applies managerial and research skills to the completion of a research project and the organization of a research symposium.

**HADM 4960 SPECIAL PROBLEMS IN HEALTH ADMINISTRATION (1-6).** IND. Directed readings in Health Administration. Course may be repeated for a maximum of 6 credit hours.

**HADM 4970 SPECIAL TOPICS (1-3).** IND. Pr., HADM 2200 and HADM 3300. Selected topics in Health Administration. Course may be repeated for a maximum of 9 credit hours.

### POLITICAL SCIENCE (POLI)

**POLI 1020 POLITICAL ECONOMY (3).** LEC. 2, AAB. 1. Social Science II Core. The two-way interaction between politics and the economy with special attention to contemporary issues of public policy.

**POLI 1021 POLITICAL ECONOMY RECITATION (0).** LEC. 2. Coreq., POLI 1020 Small group activities for POLI 1020.

**POLI 1027 HONORS POLITICAL ECONOMY (3).** LEC. 3. Pr., Honors College. Social Science II Core. The two-way interaction between politics and the economy with special attention to contemporary issues of public policy.

**POLI 1050 GLOBAL POLITICS AND ISSUES (3).** LEC. 3. An examination of current trends toward globalization in institutional development to address world problems.

## Political Science (POLI)

**POLI 1090/1093/1094 AMERICAN GOVERNMENT IN MULTICULTURAL WORLD (3).** LEC. 3. American political institutions, processes and behavior in comparative context, with special attention to the ways in which cultural and social diversity in the U.S. has impacted its politics. Social Science II Core.

**POLI 1097 HONORS AMERICAN GOVERNMENT IN MULTICULTURAL WORLD (3).** LEC. 3. Pr., Honors College. American Political Institutions, processes and behavior in comparative context, with special attention to the ways in which cultural and social diversity in the U.S. has impacted its politics. Social Science II Core.

**POLI 2100 STATE AND LOCAL GOVERNMENT (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The organization and operation of American state and local governments, including their relationship to the U.S. federal system and their role in public policy issues.

**POLI 3000 POLITICAL SCIENCE RESEARCH METHODS I (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Introduction to the basic concepts and methodology used in contemporary political analysis.

**POLI 3010 POLITICAL SCIENCE RESEARCH METHODS II (3).** LEC. 3. Pr., POLI 3000 and POLI 1090 or POLI 1093 or POLI 1097. Introduction to empirical research methods in political science with attention to data collection, retrieval, transformation and analysis.

**POLI 3020 INTRODUCTION TO POLITICAL THEORY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Selected major themes in political thought from ancient to modern times.

**POLI 3030 AFRICAN-AMERICAN POLITICAL THOUGHT (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. African-American political thought along with a theoretical framework that is reflective of the Black experience.

**POLI 3090 INTRODUCTION TO INTERNATIONAL RELATIONS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. International relations, including a consideration of the bases of national power and the rudiments of international politics.

**POLI 3100 INTRODUCTION TO WORLD AFFAIRS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Contemporary international politics that evaluates foreign policy objectives and strategies of seven major countries and how their stability as sovereign states are affected.

**POLI 3120 INTRODUCTION TO COMPARATIVE POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Methods of classifying governments by institutional and developmental characteristics.

**POLI 3140 AMERICAN FOREIGN POLICY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Analysis of the decision making process of American foreign policy and/or of selected current issues of American foreign policy.

**POLI 3150 AMERICAN POLITICAL THOUGHT (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The principal American political philosophers and philosophies and their influence on political institutions.

**POLI 3160 NATIONAL SECURITY POLICY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Introduction to national security aspects of United States foreign policy.

**POLI 3170 SOVIET AND POST-SOVIET FOREIGN POLICIES (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An analysis of Soviet foreign policy from 1917-1991, and an introduction to foreign policies of Russia and other post-Soviet successor states.

**POLI 3180 LATIN AMERICA AND THE UNITED STATES (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An analysis of Latin American-United States relations in their political, social and economic aspects.

**POLI 3190 INTERNATIONAL RELATIONS OF THE MIDDLE EAST (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. A survey of contemporary issues in international relations, focusing on the Middle East.

**POLI 3240 ADMINISTRATION OF JUSTICE (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Components of the American legal system responsible for administration of public justice.

**POLI 3250 INTRODUCTION TO PUBLIC ADMINISTRATION (3).** LEC. 3. Pr., P/C, POLI 1090 or P/C, POLI 1093 or P/C, POLI 1097 or P/C, POLI 2100. Administration in the public sector with particular emphasis on public administration as it exists in modern American Government.

**POLI 3260 ORGANIZATION THEORY (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Structure and function of governmental organizations with an emphasis on theories of administrative hierarchies and evaluation of bureaucracy.

**POLI 3270 POLICY PROCESS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The formulation and implementation of public policy; the roles of the major governmental institutions in policy making.

**POLI 3290 THE AMERICAN PRESIDENCY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Examines political styles and personalities of recent presidents and presidential decision-making.

**POLI 3300 LAW AND SOCIETY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Introduction to how the law mediates some of the basic conflicts in society.

**POLI 3310 THE LEGISLATIVE PROCESS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Principles, procedures and problems of lawmaking in the U.S.; special attention to Congress and the state legislatures.

**POLI 3320 JUDICIAL PROCESS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. A basic understanding of the structure and function of courts and the role of judges in all societies, but with a special focus on the American variation.

**POLI 3330 ADMINISTRATIVE RESPONSIBILITY (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Roles and functions of public administration in a democratic society. Emphasis on bureaucratic ethics.

**POLI 3340 INTRODUCTION TO CONFLICT RESOLUTION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Examines various methods of conflict resolution at various levels from the interpersonal to international.

**POLI 3350 CONTROVERSIES IN CONSTITUTIONAL LAW (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. This course examines the origins and influence of controversial Supreme Court decisions in such areas as religion, free speech, privacy, abortion, and criminal justice.

**POLI 3360 FEDERAL JURISDICTION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An introduction to the federal court system and Federal Jurisdiction under Article III.

**POLI 3370 FEDERAL INDIAN LAW (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An introduction to the federal laws governing and regulating the relationship between tribal nations, on the one hand and the states and federal governments, on the other.

**POLI 3380 EVIDENCE AND LEGAL REASONING (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An introduction to the rules governing the presentation of evidence at trial.

**POLI 3390 RELIGION AND POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Interaction of governmental institutions and religion.

**POLI 3400 POLITICAL PARTIES AND INTEREST GROUPS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The nature, organization and operation of political parties in the United States; the suffrage; nominating and electoral processes; importance and nature of interest groups.

**POLI 3410 POLITICAL PARTICIPATION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Political participation in the traditional and unconventional forms and the developing trends in citizen participation in recent years.

**POLI 3420 POLITICS AND THE MEDIA (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Influences of the media on political action, the electoral process and popular concepts of political institutions, "use" of the media and its regulation by government.

**POLI 3430 JUSTICE AND SOCIETY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Historical overview of issues affecting legal policy.

**POLI 3510 THE EUROPEAN UNION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Analysis of the complex mixture of historical, economic, and cultural phenomena that comprise the European Union.

**POLI 3520 COMPARATIVE POLITICS OF THE MIDDLE EAST (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Domestic politics in the states of the Middle East.

**POLI 3530 SOVIET AND POST-SOVIET POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Survey and analysis of political institutions and domestic policies in the Soviet Union 1917-1991 and in post-Soviet successor states.

**POLI 3540 EAST EUROPEAN POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Survey and analysis of evolving political institutions and policies in Eastern and Central Europe under Communism and in the post-Communism period.

**POLI 3550 GOVERNMENT AND POLITICS OF LATIN AMERICA (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Political environment, institutions and processes of Latin America emphasizing factors that influence the degree of democracy and authoritarianism, stability and instability, and political development.

**POLI 3610 ASIAN POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The politics of the leading nations in East Asia with major attention being devoted to China and Japan.

**POLI 3710 ISSUES IN AMERICAN POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in American Politics. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

**POLI 3720 ISSUES IN COMPARATIVE POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Comparative Politics. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

**POLI 3730 ISSUES IN INTERNATIONAL RELATIONS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in International Relations. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

**POLI 3740 ISSUES IN POLITICAL THOUGHT (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Political Thought. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

## Political Science (POLI)

**POLI 3750 ISSUES IN PUBLIC ADMINISTRATION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Administration. Focus will vary according to the instructor.

**POLI 3760 ISSUES IN PUBLIC POLICY (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Policy. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

**POLI 3770 ISSUES IN PUBLIC LAW AND CONFLICT RESOLUTION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Law & Conflict Resolution. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

**POLI 3980 UNDERGRADUATE RESEARCH (3).** LAB. 3. Pr., POLI 3000 or POLI 1090 or POLI 1093 or POLI 1097. Supplementary learning concurrent with actual experience with Political Science Research. Course may be repeated for a maximum of 6 credit hours.

**POLI 4010 CONSTITUTIONAL LAW: GOVERNMENT POWERS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Constitutional law cases dealing with limited powers, separation of powers and federalism.

**POLI 4020 CONSTITUTIONAL LAW: CIVIL LIBERTIES (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Constitutional law cases dealing with First Amendment freedoms.

**POLI 4030 CONSTITUTIONAL LAW: CIVIL RIGHTS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Supreme Court opinions defining voting rights, gender discrimination, race discrimination, age discrimination, affirmative action and the right to privacy.

**POLI 4040 CONSTITUTIONAL LAW: CRIMINAL JUSTICE (3).** LEC. 3. Supreme Court rulings of Fourth, Fifth, Sixth, and Eighth Amendments to the U.S. Constitution.

**POLI 4050 AMERICAN LOCAL GOVERNMENT (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097 or POLI 2100. The structure of local government, the roles and incentives of key elected and appointed officials, and the policy issues faced by those officials.

**POLI 4090 URBAN ADMINISTRATION (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Different aspects of urban administration such as decision making, political environment, budgeting, revenue systems and personnel administration.

**POLI 4130 POLITICS OF THE ADMINISTRATIVE PROCESS (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. How public agencies and their employees at all levels of government survive and sometimes prosper within an intensely political environment.

**POLI 4140 PUBLIC FINANCE (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Theory and practice of public finance with an emphasis on applications in state and local government.

**POLI 4160 PUBLIC PERSONNEL ADMINISTRATION (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Responsibilities, challenges, and opportunities that confront modern public administration in the management of human resources.

**POLI 4220 UNITED STATES POLITICAL ECONOMY (3).** LEC. 3. Pr., POLI 1090 or POLI 1097 or POLI 1093. Social, economic and political factors that affect America's national competitiveness and what they portend for political life in the United States.

**POLI 4340 CONTEMPORARY POLITICAL THEORY (3).** LEC. 3. Pr., POLI 3020 and POLI 1090 or POLI 1093 or POLI 1097. Survey of late 20th and early 21st Century political philosophy, including neoclassicist, postmodernist, communitarian, and critical theories.

**POLI 4500 FIBER REINFORCED MATERIALS (3).** LEC. 3. Material properties and manufacture of fiber reinforced materials; perform structures, analysis, design methodology and applications.

**POLI 4700 POLITICS OF INTERNATIONAL ECONOMIC RELATIONS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Political issues involved in the economic relationships among nation states.

**POLI 4920 INTERNSHIP (1-6).** AAB/INT. SU. Pr., POLI 1090 or POLI 1093 or POLI 1097. Internship in selected areas of political science. Course may be repeated for a maximum of 6 credit hours.

**POLI 4930 DIRECTED STUDIES (1-3).** IND. Pr., POLI 1090 or POLI 1093 or POLI 1097. Course may be repeated with change in topic.

**POLI 4960 SPECIAL PROBLEMS (1-3).** IND. Pr., POLI 1090 or POLI 1093 or POLI 1097. Directed readings in Political Science: 1) American Politics; 2) Comparative Politics; 3) International Relations; 4) Political Theory; 5) Public Administration; 6) Public Policy; 7) Public Law; 8) Methodology. Course may be repeated with change in topic.

**POLI 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. (POLI 1090 or POLI 1093 or POLI 1097). Directed readings: 1) American Politics; 2) Comparative Politics; 3) International Relations; 4) Political Theory; 5) Public Administration; 6) Public Policy; 7) Public Law; 8) Methodology. Course may be repeated with change in topic.

**POLI 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. (POLI 1090 or POLI 1093 or POLI 1097). Course may be repeated for a maximum of 6 credit hours.

**POLI 5150 INTERGOVERNMENTAL RELATIONS AND FEDERALISM (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097 and POLI 2100. Provides a mid-level introduction to American federalism and the intergovernmental system, including theory, historical developments, major themes and emerging issues. Credit will not be given for both POLI 5150 and POLI 6150.

**POLI 5170 ELECTION LAW (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Legal issues surrounding the election process within a democratic political system. Credit will not be given for both POLI 5170 and POLI 6170.

**POLI 5180 ADMINISTRATIVE LAW (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. General nature of administrative law; types of administrative action and enforcement; analysis of rule-making and adjudication; administrative due process; judicial review. Credit will not be given for both POLI 5180 and POLI 6180.

**POLI 5210 VOTING BEHAVIOR AND REPRESENTATION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The causes of voting and vote choice and their consequences for the behavior of representatives. Credit will not be given for both POLI 5210 and POLI 6210.

**POLI 5270 ELECTION ADMINISTRATION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Elections and the shifting relationships among local, state, and federal governments. Credit will not be given for both POLI 5270 and POLI 6270.

**POLI 5340 THEORY AND PRACTICE OF MEDIATION (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Theoretical and comparative perspective on conflict resolution with emphasis on the role of mediation in various societies. Credit will not be given for both POLI 5340 and POLI 6340.

**POLI 5370 NONPROFIT MANAGEMENT (3).** LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. A comprehensive overview of the complex and diverse non-profit sector in the United States. Includes theory and practice of governance and key management functions. Credit will not be given for both POLI 5370 and POLI 6370.

**POLI 5380 PUBLIC-PRIVATE MANAGEMENT (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Theory and practice of the roles of the public and private sectors in the provision, production and delivery of traditional public services. Credit will not be given for both POLI 5380 and POLI 6380.

**POLI 5410 SOUTHERN POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Introduction to the politics and government of the Southern region of the United States. Credit will not be given for both POLI 5410 and POLI 6410.

**POLI 5510 ISSUES IN AMERICAN POLITICS (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Focus will vary according to the instructor. Credit will not be given for both POLI 5510 and 6510. Course may be repeated for a maximum of 6 credit hours.

**POLI 5520 ISSUES IN COMPARATIVE POLITICS (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Comparative Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5520 and 6520. Course may be repeated for a maximum of 6 credit hours.

**POLI 5530 ISSUES IN INTERNATIONAL RELATIONS (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in International Relations. Focus will vary according to the instructor. Credit will not be given for both POLI 5530 and 6530. Course may be repeated for a maximum of 6 credit hours.

**POLI 5540 ISSUES IN POLITICAL THOUGHT (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Political Thought. Focus will vary according to the instructor. Credit will not be given for both POLI 5540 and 6540. Course may be repeated for a maximum of 6 credit hours.

**POLI 5550 ISSUES IN PUBLIC ADMINISTRATION (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Administration. Focus will vary according to the instructor. Credit will not be given for both POLI 5550 and 6550. Course may be repeated for a maximum of 6 credit hours.

**POLI 5560 ISSUES IN PUBLIC POLICY (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Policy. Focus will vary according to the instructor. Credit will not be given for both POLI 5560 and 6560. Course may be repeated for a maximum of 6 credit hours.

**POLI 5570 ISSUES IN PUBLIC LAW AND CONFLICT RESOLUTION (1-3).** LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Law & Conflict Resolution. Focus will vary according to the instructor. Credit will not be given for both POLI 5570 and POLI 6570. Course may be repeated for a maximum of 6 credit hours.

**POLI 5610 WOMEN IN POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An examination of the political role of women in American society. Credit will not be given for both POLI 5610 and POLI 6610.

**POLI 5620 AFRICAN AMERICAN POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Political values, theories, problems, issues and behavior relating to African-Americans in the United States. Credit will not be given for both POLI 5620 and POLI 6620.

**POLI 5710 PERSIAN GULF POLITICS (3).** LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An examination of the politics of the Persian Gulf. May count either POLI 5710 or POLI 6710.

## Political Science (POLI)

- POLI 6150 INTERGOVERNMENTAL RELATIONS AND FEDERALISM (3).** LEC. 3. Provides a mid-level introduction to American federalism and the intergovernmental system, including theory, historical developments, major themes and emerging issues. Credit will not be given for both POLI 5150 and POLI 6150.
- POLI 6170 ELECTION LAW (3).** LEC. 3. Legal issues surrounding the election process within a democratic political system. Credit will not be given for both POLI 5170 and POLI 6170.
- POLI 6180 ADMINISTRATIVE LAW (3).** LEC. 3. General nature of administrative law; types of administrative action and enforcement; analysis of rule-making and adjudication; administrative due process; judicial review. Credit will not be given for both POLI 5180 and POLI 6180.
- POLI 6210 VOTING BEHAVIOR AND REPRESENTATION (3).** LEC. 3. The causes of voting and vote choice and their consequences for the behavior of representatives. Credit will not be given for both POLI 6210 and POLI 5210.
- POLI 6270 ELECTION ADMINISTRATION (3).** LEC. 3. Elections and the shifting relationships among local, state, and federal governments. Credit will not be given for both POLI 5270 and POLI 6270.
- POLI 6340 THEORY AND PRACTICE OF MEDIATION (3).** LEC. 3. Theoretical and comparative perspective on conflict resolution with emphasis on the role of mediation in various societies. Credit will not be given for both POLI 6340 and POLI 5340.
- POLI 6370 NONPROFIT MANAGEMENT (3).** LEC. 3. A comprehensive overview of the complex and diverse non-profit sector in the United States. Includes theory and practice of governance and key management functions. Credit will not be given for both POLI 5370 and POLI 6370.
- POLI 6380 SEMINAR IN PUBLIC-PRIVATE MANAGEMENT (3).** LEC. 3. Theory and practice of the roles of the public and private sectors in the provision, production and delivery of traditional public services. Credit will not be given for both POLI 6380 and POLI 5380.
- POLI 6410 SOUTHERN POLITICS (3).** LEC. 3. Introduction to the politics and to a lesser extent government of the Southern region of the United States. Credit will not be given for POLI 6410 and POLI 5410.
- POLI 6510 ISSUES IN AMERICAN POLITICS (1-3).** LEC. Topics in American Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5510 and 6510. Course may be repeated for a maximum of 6 credit hours.
- POLI 6520 ISSUES IN COMPARATIVE POLITICS (1-3).** LEC. Topics in Comparative Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5520 and 6520. Course may be repeated for a maximum of 6 credit hours.
- POLI 6530 ISSUES IN INTERNATIONAL RELATIONS (1-3).** LEC. Topics in International Relations. Focus will vary according to the instructor. Credit will not be given for both POLI 5530 and 6530. Course may be repeated for a maximum of 6 credit hours.
- POLI 6540 ISSUES IN POLITICAL THOUGHT (1-3).** LEC. Topics in Political Thought. Focus will vary according to the instructor. Credit will not be given for both POLI 5540 and 6540. Course may be repeated for a maximum of 6 credit hours.
- POLI 6550 ISSUES IN PUBLIC ADMINISTRATION (1-3).** LEC. Topics in Public Administration. Focus will vary according to the instructor. Credit will not be given for both POLI 5550 and 6550. Course may be repeated for a maximum of 6 credit hours.
- POLI 6560 ISSUES IN PUBLIC POLICY (1-3).** LEC. Topics in Public Policy. Focus will vary according to the instructor. Credit will not be given for both POLI 5560 and 6560. Course may be repeated for a maximum of 6 credit hours.
- POLI 6570 ISSUES IN PUBLIC LAW AND CONFLICT RESOLUTION (1-3).** LEC. Topics in Public Law & Conflict Resolution. Focus will vary according to the instructor. Credit will not be given for both POLI 5570 and POLI 6570. Course may be repeated for a maximum of 6 credit hours.
- POLI 6610 WOMEN IN POLITICS (3).** LEC. 3. A theoretical, historical, social and political examination of the role of women in American society. Credit will not be given for both POLI 6610 and POLI 5610.
- POLI 6620 AFRICAN-AMERICAN POLITICS (3).** LEC. 3. The political values, structure and behavior of African-Americans in the United States. Emphasis on the theories, problems and issues relating to Black political behavior. Credit will not be given for both POLI 6620 and POLI 5620.
- POLI 6710 PERSIAN GULF POLITICS (3).** LEC. 3. An examination of the politics of the Persian Gulf. May count either POLI 5710 or POLI 6710.
- POLI 7000 RESEARCH METHODS (3).** LEC. 3. Statistics and other quantitative techniques for the analysis of policy and for administrative decision making.
- POLI 7050 STATE POLITICS (3).** LEC. 3. Current and classical research on state government, politics, and policy. Students critique others' research and design their own for submission to a professional journal.
- POLI 7130 POLITICS OF THE ADMINISTRATIVE PROCESS (3).** LEC. 3. Public agencies and their employees at all levels of government and how they survive and sometimes prosper within an intense political environment. Credit will not be given for both POLI 7130 and POLI 4130.
- POLI 7140 PUBLIC BUDGETING (3).** LEC. 3. Comprehensive theoretical underpinning for research. Focuses on models associated with descriptive and prescriptive budgeting research.
- POLI 7150 PUBLIC PERSONNEL ADMINISTRATION (3).** LEC. 3. Personnel policies, processes and politics in American governments. Includes history, theory and practice.
- POLI 7160 FINANCIAL ADMINISTRATION (3).** LEC. 3. Application of macroeconomic theory to public finance; emphasizes capital budgeting, taxation, user charges, debt administration, cash management and investment for small governments.
- POLI 7260 ORGANIZATIONAL THEORY AND ADMINISTRATIVE BEHAVIOR (3).** LEC. 3. The structure and functioning of government organizations with an emphasis on applied management and on leadership techniques.
- POLI 7330 SEMINAR IN ADMINISTRATIVE LEADERSHIP, RESPONSIBILITY, AND DEMOCRATIC GOVERNMENT (3).** SEM. 3. Problems and ethics, democratic theory and leadership as they relate to public administration.
- POLI 7350 SEMINAR IN PUBLIC ADMINISTRATION (3).** SEM. 3. An introduction to public administration as practiced in the United States.
- POLI 7360 SEMINAR IN POLICY AND ADMINISTRATION (3).** SEM. 3. Formation, execution and evaluation of public policy and also an in-depth analysis of selected policy areas.
- POLI 7520 PROGRAM EVALUATION (3).** LEC. 3. Theory and practice of program evaluation in the public sector with attention to program planning, process assessment and impact assessment.
- POLI 7630 DIVERSITY IN PUBLIC LIFE (3).** LEC. 3. Developing and institutionalizing diversity in complex public organizations as a major part of organizational culture.
- POLI 7700 ECONOMIC DEVELOPMENT AND COMPETITION (3).** LEC. 3. Politics of economic development at the local, state and national level, especially the infrastructure offered by communities and the types of plans that might attract outside investment.
- POLI 7920 MPA INTERNSHIP (3-6).** INT. SU. Administrative experience in a governmental agency or participation in an approved governmental research project. Course may be repeated for a maximum of 6 credit hours.
- POLI 7930 MPA RESEARCH PROJECT (3-6).** IND. Requires the completion and approval of a paper related to a policy or administrative issue or problem. Course may be repeated for a maximum of 6 credit hours.
- POLI 7960 SPECIAL PROBLEMS (1-3).** IND. Directed readings in political science: 1) American Politics; 2) Comparative Politics; 3) International Relations; 4) Political Theory; 5) Public Administration; 6) Public Policy; 7) Public Law; 8) Methodology. Course may be repeated with change in topic.
- POLI 8000 DOCTORAL SEMINAR IN PUBLIC ADMINISTRATION (3).** LEC. 3. Explores the nature of public administration as a field of study and how different theoretical perspectives are reflected in current research.
- POLI 8010 RESEARCH DESIGN AND ANALYSIS (3).** LEC. 3. Development and testing of causal models in political/ social science. Each student will develop a complex research design under the close supervision of the instructor.
- POLI 8020 DOCTORAL SEMINAR IN PUBLIC POLICY (3).** SEM. 3. Advanced study of the nature of public policy development and implementation.
- POLI 8040 DOCTORAL SEMINAR IN PUBLIC FINANCE (3).** SEM. 3. The theory and practice of public finance in a comparative perspective.
- POLI 8060 DOCTORAL SEMINAR IN PUBLIC POLICY ANALYSIS AND RESEARCH (3).** SEM. 3. An examination of advanced policy analysis and research methodology and the relationship between evaluation and quantitative analysis and policy formulation and implementation.
- POLI 8070 DOCTORAL SEMINAR IN HUMAN RESOURCE ADMINISTRATION IN THE PUBLIC SECTOR (3).** SEM. 3. The major environmental values affecting public personnel administration and the major processes used in public personnel management.
- POLI 8110 AMERICAN GOVERNMENT AND PUBLIC POLICY (3).** LEC. 3. Survey of the literature on the main institutions and policy processes of American national government; strong emphasis on research design, methodology, and validity.
- POLI 8120 QUALITATIVE RESEARCH METHODS (3).** SEM. 3. Pr., POLI 8110. In-depth analysis of the use of qualitative methods in Political Science research.
- POLI 8130 QUANTITATIVE METHODS (3).** LEC. 3. Pr., POLI 8110. In-depth analysis of the use of quantitative methods in Political Science research.
- POLI 8260 PUBLIC ORGANIZATIONAL THEORY AND MANAGEMENT (3).** SEM. 3. The development and refinement of research on administrative and organizational theory in public management. Credit will not be given for both POLI 7270 and POLI 8260.
- POLI 8450 COMPARATIVE POLITICS AND PUBLIC POLICY (3).** LEC. 3. Theoretical approaches and important sub-field literatures. Applies insights and approaches to solving practical contemporary problems in public policy.

## Poultry Science (POUL)

**POLI 8550 INTERNATIONAL RELATIONS AND PUBLIC POLICY (3).** LEC. 3. Application of the scholarship in international relations to public policy with a focus on war, defense policy, and conflict management.

**POLI 8650 POLITICAL THEORY AND PUBLIC POLICY (3).** LEC. 3. A study of political theory in relation to concrete issues of public policy.

**POLI 8750 PUBLIC LAW AND PUBLIC POLICY (3).** LEC. 3. The role of the courts in public policy-making.

**POLI 8970 SPECIAL TOPICS (3).** LEC. 3. Directed study of topics of interest. Course may be repeated for a maximum of 9 credit hours.

**POLI 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic.

### Poultry Science (POUL)

Dr. Donald Conner - 844-2639

**POUL 1000 INTRODUCTORY POULTRY SCIENCE (3).** LEC. 2, LAB. 2. Introduction to the poultry species and their commercial production, physiology, nutrition and management. Fall.

**POUL 2000 POULTRY AND EGG EVALUATION AND SELECTION (1).** LAB. 1. A hands-on approach to poultry and egg evaluation based on the U.S. poultry and Egg guidelines and how to properly care for and handle the birds. Spring and Fall. Course may be repeated for a maximum of 4 credit hours.

**POUL 3030 COMMERCIAL POULTRY PRODUCTION (4).** LEC. 3, LAB. 3. The organization and management principles of the commercial poultry meat and egg production industries. Fall.

**POUL 3060 POULTRY BREEDING, FERTILITY, AND HATCHABILITY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030 or BIOL 1037. Breeding systems used in developing modern breeds of poultry. Genetic, physiological and environmental factors affecting fertility, embryonic development, and hatch ability. Spring.

**POUL 3150 POULTRY PHYSIOLOGY (4).** LEC. 3, LAB. 2. Pr., BIOL 1030 or BIOL 1037. The physiological principles and characteristics of poultry species which directly interact with commercial management systems. Spring.

**POUL 4100 SUPERVISED INVESTIGATION (1-4).** IND. Pr., 2.5 GPA. Advanced independent investigation in major field of poultry or avian science. Requirements include review of literature, successful and timely completion of research project, and presentation of results in written and/or oral report. Departmental approval, cumulative GPA of 2.5 or higher. Course may be repeated for a maximum of 8 credit hours.

**POUL 4920 POULTRY SCIENCE INTERNSHIP (3).** INT. 3. SU. Pr., departmental approval. Practical on-the-job training in the poultry or food industry. Course may be repeated for a maximum of 9 credit hours.

**POUL 5050 POULTRY FEEDING (4).** LEC. 3, LAB. 2. Pr., (BIOL 1030 or BIOL 1037) and BCHE 3200. The application of the principles of nutrition to poultry; the functions of individual nutrients, their deficiency symptoms and their supply in terms of feedstuffs and practical poultry diets. Credit will not be given for both POUL 5050 and POUL 6050. Fall.

**POUL 5080/5083/5084 POULTRY HEALTH (3).** LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3200 and (CHEM 2030 or CHEM 2070). Study of the prevention, diagnosis, control and treatment of economically important diseases of poultry. Credit will not be given for both POUL 5080 and POUL 6080. Spring.

**POUL 5110 POULTRY PROCESSING (3).** LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and POUL 3030. Commercial poultry processing and products technology. Credit will not be given for both POUL 5110 and POUL 6110. Fall.

**POUL 5140 POULTRY FURTHER PROCESSING AND PRODUCTS (4).** LEC. 3, LAB. 3. Pr., CHEM 2030 or CHEM 2070. The chemistry and processing techniques used in manufacturing further processed poultry products. Methods used to analyze poultry product safety and quality. "Hands on" experience with the commercial formulation, processing and analysis of further processed poultry products. Credit will not be given for both POUL 5140 and POUL 6140. Fall.

**POUL 5150/5153 FOOD LAWS AND REGULATIONS (3).** LEC. 3. Federal and state laws and regulations and case history affecting food production, processing, packaging, marketing and distribution of food and food productions. History of food law, enactment of laws and regulations, legal research and regulatory agencies. Course is taught exclusively online. Credit will not be given for both POUL 5150 and POUL 6150.

**POUL 5160 PRINCIPLES OF FOOD SAFETY (3).** LEC. 2, LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and (CHEM 2030 or CHEM 2070). Identification and control of food borne hazards in foods of animal origin. Introduction to Hazard Analysis and Critical Control Points. Credit will not be given for both POUL 5160 and POUL 6160. Spring.

**POUL 5200/5203 DEVELOPING, IMPLEMENTING, AND AUDITING FOOD SAFETY PROGRAMS (3).** LEC. 3. Theory and practice of food safety program design and implementation; includes internal and third-party audits.

**POUL 5730 SENSORY EVALUATION (3).** LEC. 3. Pr., STAT 2510. History and methods of sensory testing of food products, factors affecting results. May count one of the following: ANSC 5730, ANSC, 6730, POUL 5730, POUL 6730. Spring.

**POUL 6050 ADVANCED POULTRY FEEDING (4).** LEC. 3, LAB. 2. An advanced study and review of the literature on the application of the principles of nutrition to poultry; the functions of individual nutrients, their deficiency symptoms and their supply in terms of feedstuffs and practical poultry diets. Credit will not be given for both POUL 5050 and POUL 6050. Fall. Departmental approval.

**POUL 6080 ADVANCED POULTRY HEALTH (3).** LEC. 3. An advanced study of the prevention, diagnosis, control and treatment of economically important diseases of poultry. Credit will not be given for both POUL 5080 and POUL 6080. Fall. Departmental approval.

**POUL 6110 ADVANCED POULTRY PROCESSING (3).** LEC. 3. An advanced study and review of poultry processing and products technology. Credit will not be given for both POUL 5110 and POUL 6110. Fall. Departmental approval.

**POUL 6140 POULTRY FURTHER PROCESSING AND PRODUCTS (4).** LEC. 3, LAB. 3. The chemistry and processing techniques used in manufacturing further processed poultry products. Methods used to analyze poultry product safety and quality. "Hands-on" experience with the commercial formulation, processing and analysis of further processed poultry products. Credit will not be given for both POUL 5140 and 6140. Departmental approval.

**POUL 6150/6156 FOOD LAWS AND REGULATIONS (3).** LEC. 3. Federal and state laws and regulations and case history affecting food production, processing, packaging, marketing, and distribution of food and food productions. History of food law, enactment of laws and regulations, legal research and regulatory agencies. Course is taught exclusively online. Credit will not be given for both POUL 6150 and POUL 5150.

**POUL 6160 ADVANCED PRINCIPLES OF FOOD SAFETY (3).** LEC. 2, LAB. 3. An advanced study and literature review of the identification and control of food borne hazards in foods of animal origin. Introduction to Hazard Analysis and Critical Control Points. Credit will not be given for both POUL 5160 and POUL 6160. Spring. Departmental approval.

**POUL 6200/6206 DEVELOPING, IMPLEMENTING, AND AUDITING FOOD SAFETY PROGRAMS (3).** LEC. 3. Theory and practice of food safety program design and implementation; includes internal and third-party audits.

**POUL 6730 SENSORY EVALUATION (3).** LEC. 2, LAB. 2. Pr., STAT 2510. History and methods of sensory testing of food products, factors affecting results. May count one of the following: ANSC 5730, ANSC, 6730, POUL 5730, POUL 6730. Spring.

**POUL 7100 SUPERVISED INVESTIGATION (1-4).** IND. Pr., 2.5 GPA. Advanced independent investigation in major field of poultry or avian science. Requirements include review of literature, successful and timely completion of research project, and presentation of results in written and/or oral report. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**POUL 7990 RESEARCH AND THESIS (1-10).** MST. Technical laboratory problems related to poultry. Course may be repeated with change in topic.

**POUL 8100 GI SYSTEMS AND NUTRIENT UTILIZATION (3).** LEC. 3. Pr., POUL 5050. Structure of feedstuffs and strategy in nutrient recovery from the gastrointestinal systems of fowl, swine, and ruminants.

**POUL 8150 AVIAN PHYSIOLOGY (3).** LEC. 3. Physiology of organ systems of birds with emphasis on domestic fowl. Fall. Course in animal or human physiology.

**POUL 8160 LABORATORY TECHNIQUES IN MOLECULAR VIROLOGY (4).** LEC. 1, LAB. 9. Pr., BIOL 5220 and BIOL 5230 Isolation, purification, and identification of viral nucleic acids and proteins. Credit will not be given for both POUL 8160 and CMBL 8160. Odd years. Fall. Departmental approval.

**POUL 8620 ANAEROBIC BACTERIOLOGY (4).** LEC. 2, LAB. 6. Pr., BIOL 6400 and CHEM 6180. Principles of basic pathogenic anaerobic bacteriology. Basic clinical methodology anaerobic bacterial identification, pathogenesis, current research and literature in anaerobic bacteriology. Departmental approval.

**POUL 8700 THE LIVING GUT (3).** LEC. 3. Coreq., POUL 8620. Basic physiology of intestinal tract. Normal flora and its association with maintenance of homeostasis. Interaction of host intestinal components and microflora at the cellular level. Departmental approval. Summer.

**POUL 8950 GRADUATE SEMINAR (1).** SEM. 1. SU. Literature in poultry science or related field. Emphasis given to preparation, organization, and presentation of research materials by students and to reporting current literature in the field. Fall and Spring.

**POUL 8960 SPECIAL PROBLEMS (1-4).** IND. A) Nutrition, B) Physiology, C) Health, D) Microbiology, E) Processing, F) Product Safety and Quality, G) Teaching, H) Immunonutrition. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

**POUL 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Technical laboratory problems related to poultry. Course may be repeated with change in topic.

### FOOD SCIENCE (FDSC)

**FDSC 4290 PROFESSIONAL DEVELOPMENT IN FOOD SCIENCE (1).** LEC. 1. Preparing for careers; enhancing computer and communication skills; planning for professional advancement. Spring.



## Psychology (PSYC)

**FDSC 4910 FOOD SCIENCE PRACTICUM (3).** PRA. 3. Practical experience in food industry, governmental laboratories, or other food science sites.

**FDSC 4920 FOOD SCIENCE INTERNSHIP (3).** INT. 3. SU. Pr., departmental approval. Practical on-the-job training in the poultry or food industry. Course may be repeated for a maximum of 9 credit hours.

**FDSC 5150/5153 FOOD LAWS AND REGULATIONS (3).** LEC. 3. Federal and state laws and regulations and case history affecting food production, processing, packaging, marketing and distribution of food and food productions. History of food law, enactment of laws and regulations, legal research and regulatory agencies. Course is taught exclusively online. Credit will not be given for both FDSC 5150 and FDSC 6150.

**FDSC 5200/5203 DEVELOPING, IMPLEMENTING, AND AUDITING FOOD SAFETY PROGRAMS (3).** LEC. 3. Theory and practice of food safety program design and implementation; includes internal and third-party audits. Credit will not be given for both FDSC 5200 and FDSC 6200.

**FDSC 5430 FOOD CHEMISTRY (4).** LEC. 3, LAB. 3. Pr., BCHE 3200. Departmental approval. Chemistry of food components; chemical and physical changes of food during processing and storage. Credit will not be given for both FDSC 5430 and FDSC 6430.

**FDSC 5450 FOOD ANALYSIS AND QUALITY CONTROL (4).** LEC. 3, LAB. 3. Pr., FDSC 5430. Departmental approval. Principles and application of chemical and instrumental food analyses; quality control procedures. Credit will not be given for both FDSC 5450 and FDSC 6450. Fall.

**FDSC 5640 FOOD PRODUCT DEVELOPMENT (4).** LEC. 2, LAB. 6. Pr., FDSC 5430. Departmental approval. Food product development from concept to market. Credit will not be given for both FDSC 5640 and FDSC 6640. Spring.

**FDSC 5730 SENSORY EVALUATION (3).** LEC. 2, LAB. 2. History and methods of sensory testing of food products, factors affecting results. May count one of the following: ANSC 5730, ANSC, 6730, FDSC 5730, FDSC 6730.

**FDSC 5770 FOOD PLANT SANITATION (4).** LEC. 3, LAB. 3. Pr., BIOL 3200. Departmental approval. Sanitary regulations and procedures for hazard control and quality assurance in food industry. Credit will not be given for both FDSC 5770 and FDSC 6770.

**FDSC 6150/6156 FOOD LAWS AND REGULATIONS (3).** LEC. 3. Federal and state laws and regulations and case history affecting food production, processing, packaging, marketing, and distribution of food and food productions. History of food law, enactment of laws and regulations, legal research and regulatory agencies. Course is taught exclusively online. Credit will not be given for both FDSC 6150 and FDSC 5150.

**FDSC 6200/6206 DEVELOPING, IMPLEMENTING, AND AUDITING FOOD SAFETY PROGRAMS (3).** LEC. 3. Theory and practice of food safety program design and implementation; includes internal and third-party audits.

**FDSC 6430 FOOD CHEMISTRY (4).** LEC. 3, LAB. 3. Pr., BCHE 3200. Departmental approval. Chemistry of food components; chemical and physical changes of food during processing and storage. Credit will not be given for both FDSC 5430 and FDSC 6430.

**FDSC 6450 FOOD ANALYSIS AND QUALITY CONTROL (4).** LEC. 3, LAB. 3. Pr., FDSC 6430. Departmental approval. Principles and application of chemical and instrumental food analyses; quality control procedures. Credit will not be given for both FDSC 6450 and FDSC 5450. Fall.

**FDSC 6640 FOOD PRODUCT DEVELOPMENT (4).** LEC. 2, LAB. 6. Pr., FDSC 6430. Food product development from concept to market. Credit will not be given for both NUFS 6640 and NUFS 5640. Spring. Departmental approval.

**FDSC 6730 SENSORY EVALUATION (3).** LEC. 2, LAB. 2. History and methods of sensory testing of food products, factors affecting results. May count one of the following: ANSC 5730, ANSC, 6730, FDSC 5730, FDSC 6730.

**FDSC 6770 FOOD PLANT SANITATION (4).** LEC. 3, LAB. 3. Pr., BIOL 3200. Departmental approval. Sanitary regulations and procedures for hazard control and quality assurance in food industry. Credit is not allowed for both FDSC 5770 and FDSC 6770.

**FDSC 7200 CARBOHYDRATE CHEMISTRY AND FUNCTIONALITY IN FOODS (3).** LEC. 3. Pr., FDSC 6430. Chemistry and functionality of sugars, starches and hydrocolloids as applied to food systems. Departmental approval.

**FDSC 7210 FOOD PROTEINS AND FATS (3).** LEC. 3. Pr., FDSC 6430. Advanced theories and practices of food science in the areas of protein and fat. Departmental approval.

**FDSC 7930 ADVANCED INDEPENDENT STUDY (1-6).** IND. Departmental approval. Advanced reading or research approved and supervised by a faculty member. Course may be repeated for a maximum of 6 credit hours.

**FDSC 7960 SPECIAL PROBLEMS (1-4) IND/ST1.** Departmental approval. Critical analysis of classic and current research. Course may be repeated for a maximum of 8 credit hours.

**FDSC 7980/7986 NONTHESIS RESEARCH (1-3).** RES. SU. Departmental approval. In-depth work in a particular project related to food science.

**FDSC 7990 RESEARCH AND THESIS (1-10).** MST. Research in an area of specialization. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

**FDSC 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Research in an area of specialization. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

## Psychology (PSYC)

Dr. Daniel Suyantek - 844-6478

**PSYC 2010 INTRODUCTION TO PSYCHOLOGY (3).** LEC. 3. Introduction to the various subfields of psychology.

**PSYC 2017 HONORS INTRODUCTION TO PSYCHOLOGY (3).** LEC. 3. Pr., Honors College. General Introduction to Psychology with consideration of the major areas of the discipline.

**PSYC 2020 ORIENTATION TO PSYCHOLOGY MAJOR (1).** LEC. 1. SU. Pr., PSYC 2010 and P/C, STAT 2010. Orientation to the psychology major. Overview and design of psychology curriculum, faculty introduction, faculty expectations, student assessment, career development, study skills, diversity, and ethics.

**PSYC 2120 DEVELOPMENTAL PSYCHOLOGY (3).** LEC. 3. Introduction to physical, cognitive, social and emotional development across the lifespan.

**PSYC 2140 RESEARCH METHODS IN PSYCHOLOGY (4).** LEC. 3, LAB. 1. Pr., STAT 2010 and PSYC 2010. Survey of the use of descriptive and experimental methods in psychology.

**PSYC 2510 PSYCHOLOGY OF SEXUAL BEHAVIOR (3).** LEC. 3. Biological, social and psychological dimensions of human sexuality.

**PSYC 2520 PSYCHOLOGY OF GENDER (3).** LEC. 3. Biological, social and cultural determinants of gender similarities and differences.

**PSYC 2530 DRUGS AND BEHAVIOR (3).** LEC. 3. Introduction to the behavioral effects of drugs, including drug abuse and its treatment.

**PSYC 3050 HISTORY OF IDEAS IN PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and STAT 2010 and PSYC 2140. Major events and ideas from ancient to modern times that comprise the history of psychology.

**PSYC 3500 APPLIED BEHAVIOR ANALYSIS (4).** LEC. 3, LAB. 2. Pr., PSYC 2010 and STAT 2010 and PSYC 2140. Principles and procedures for management of human behavior. Fall, Spring.

**PSYC 3510 BEHAVIORAL NEUROSCIENCE (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Exploration of the relationships between the brain and behavior.

**PSYC 3520 PSYCHOLOGY OF LEARNING (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Phenomena involved in the acquisition of knowledge, skills, and patterns of action.

**PSYC 3530 SENSATION AND PERCEPTION (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Study of perceptual phenomena and the structure and function of sensory systems.

**PSYC 3540 COGNITIVE PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Phenomena involved with thinking and remembering.

**PSYC 3550 PSYCHOLOGY AND CULTURE (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Survey of the ways culture shapes, modifies and adds distinctiveness to human behaviors.

**PSYC 3560 ABNORMAL PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Exploration of our attempts to understand, explain and classify abnormal behavior patterns.

**PSYC 3570 THEORIES OF PERSONALITY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Survey of selected classical and contemporary theories of personality.

**PSYC 3580 SOCIAL PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Scientific study of how people think about, influence, and relate to one another.

**PSYC 3590 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (3).** LEC. 3. Application of basic psychological principles and theories in the workplace.

**PSYC 3600 TRAINING AND SUPERVISION IN INDUSTRY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. The application of behavioral principles to problems common to the training and supervision of people in work organizations.

**PSYC 3610 SPORTS PSYCHOLOGY (3).** SEM. 3. An inquiry into how motivation, emotion, personality, and other mind/body variables influence physiology and athletic performance. Seminar class includes applied exercises in emotional expression, stress and pain management, hypnosis, and diet and exercise challenges.

**PSYC 3910 SUPERVISED RESEARCH EXPERIENCE (3).** LEC. 3. SU. Pr., STAT 2010. Supervised experience in research settings. Course may be repeated for a maximum of 6 credit hours.

**PSYC 3940 EXPERIENTIAL LEARNING (3).** PRA. 3. SU. Pr., STAT 2010. Supplementary instruction concurrent with experience in some field of work involving application of psychological perspectives to community life. Maximum of 3

## Psychology (PSYC)

hours may be used for PSYC major. Course may be repeated for a maximum of 6 credit hours.

**PSYC 3970 SPECIAL TOPICS IN PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Theories, research and issues in contemporary psychology on selected topics. Course may be repeated for a maximum of 6 credit hours.

**PSYC 4010 INTRODUCTION TO CLINICAL PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. General introduction to the profession of clinical psychology focusing on techniques of assessment and intervention.

**PSYC 4050 ASSESSMENT IN CLINICAL PSYCHOLOGY (3).** LEC. 3. Survey of clinical methods of assessment including test construction and validation.

**PSYC 4080 HEALTH PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Psychological principles in health maintenance and health problems.

**PSYC 4110 INTRODUCTION TO DEVELOPMENTAL DISABILITIES (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Psychological principles in the care and treatment of developmentally disabled persons.

**PSYC 4220 CHILD PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Child psychology from a life-span developmental perspective, emphasizing social-emotional development in infancy.

**PSYC 4230 ADOLESCENT AND ADULT DEVELOPMENT (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. In-depth exploration of cognitive and social development of adolescents and adults.

**PSYC 4240 ADVANCED EXPERIMENTAL PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. In-depth study of one of the traditional areas of experimental psychology such as learning, cognitive or social. Course may be repeated for a maximum of 6 credit hours.

**PSYC 4250 PSYCHOLOGY OF CHOICE AND DECISION (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. In-depth treatment of the psychological science of choice (behavioral allocation) and decision-making.

**PSYC 4260 PSYCHOLOGY OF ADDICTIVE BEHAVIORS (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Overview of various psychological features of addictive behaviors including alcohol and drug abuse, eating disorders, gambling and excessive sexual behavior.

**PSYC 4910 HUMAN SERVICE PRACTICUM (3).** PRA. 3. SU. Pr., STAT 2010. Supervised experience in service-delivery settings. May enroll only once.

**PSYC 4930 DIRECTED STUDIES (1-3).** IND. Pr., STAT 2010. Work under the direction of a faculty member on a psychological topic of mutual interest. Maximum of 6 hours may be used for PSYC major. Course may be repeated for a maximum of 9 credit hours.

**PSYC 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. 2.3 GPA. Course may be repeated for a maximum of 3 credit hours.

**PSYC 4970 ADVANCED SPECIAL TOPICS IN PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 2010 and PSYC 2140 and STAT 2010. Topics assigned by course instructor.

**PSYC 4977 HONORS ADVANCED TOPICS IN PSYCHOLOGY (3).** LEC. 3. Pr., Honors College. Topics assigned by course instructor.

**PSYC 4997 HONORS RESEARCH AND THESIS (1-3).** IND. Pr., Honors College. Research in specialized topics. Course may be repeated for a maximum of 6 credit hours.

**PSYC 5020 CHILD AND ADOLESCENT PSYCHOPATHOLOGY (3).** LEC. 3. Pr., PSYC 2010 or PSYC 2017. Description, etiology and treatment of psychological disturbances in children and adolescents.

**PSYC 5610 BEHAVIORAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS (3).** LEC. 3. Laboratory, occupational and epidemiological assessment of neurotoxic chemicals; risk analysis; developmental and policy considerations. Coverage includes heavy metals, pesticides, solvents, and abused drugs.

**PSYC 5620 BEHAVIORAL PHARMACOLOGY (3).** LEC. 3. Pr., PSYC 3510. A review of drugs that affect nervous system function and behavioral or neural mechanisms, that modify these effects. Topics include substance abuse, preclinical and clinical psychopharmacology, learning and memory, behavioral mitigation of drug effects. Meets APA criteria for Level 1 training in psychopharmacology.

**PSYC 5960 SEMINAR IN PSYCHOLOGY (3).** LEC. 3. Seminar in research and theory on psychological topics. Course may be repeated with changes in topic.

**PSYC 6020 CHILD AND ADOLESCENT PSYCHOPATHOLOGY (3).** LEC. 3. Pr., PSYC 2120 and PSYC 3560. Description, etiology and treatment of psychological disturbances in children and adolescents.

**PSYC 6610 BEHAVIORAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS (3).** LEC. 3. Laboratory, occupational and epidemiological assessment of neurotoxic chemicals; risk analysis; developmental exposures; and policy considerations. Coverage includes heavy metals, pesticides, solvents, and abused drugs.

**PSYC 6620 BEHAVIORAL PHARMACOLOGY (3).** LEC. 3. A review of drugs that affect nervous system function and behavioral or neural mechanisms, that modify these effects. Topics include substance abuse, preclinical and clinical psychophar-

macology, learning and memory, behavioral mitigation of drug effects. Meets APA criteria for Level 1 training in psychopharmacology.

**PSYC 6960 SPECIAL PROBLEMS (3).** LEC. 3. Seminar in research and theory on psychological topics. Course may be repeated for a maximum of 18 credit hours.

**PSYC 7050 ASSESSMENT IN CLINICAL PSYCHOLOGY (3).** LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140 and PSYC 3560 and PSYC 3570. Survey of clinical methods of assessment including test construction and validation.

**PSYC 7100 HISTORY OF IDEAS PSYCHOLOGY (3).** LEC. 3. Historical developments in psychology with emphasis on the major theories and systems that have had an impact on current conceptions in psychology.

**PSYC 7110 ETHICS AND PROBLEMS OF SCIENTIFIC AND PROFESSIONAL PSYCHOLOGY (1).** LEC. 1. Survey of ethical issues and current problems in psychology.

**PSYC 7120 TEACHING OF PSYCHOLOGY (2).** LEC. 2. The problems and practices of teaching psychology at the college level. In addition to seminar meetings, students will work with faculty in appropriate courses. Course may be repeated for a maximum of 6 credit hours.

**PSYC 7130 RESEARCH SEMINAR IN PSYCHOLOGY (1).** SEM. 1. Overview of the research process, including the development of research questions, proposal writing and issues involved in protecting the welfare of research participants.

**PSYC 7140 LEARNING AND CONDITIONING (3).** LEC. 3. Respondent conditioning and operant behavior, including acquisition of language and other forms of individual/ environmental interactions.

**PSYC 7150 BIOLOGICAL PSYCHOLOGY (3).** LEC. 3. Behavior from a biological perspective, including theory and research from the neurosciences and biopsychology.

**PSYC 7160 HUMAN DEVELOPMENT (3).** LEC. 3. Introduction to conceptual and substantive issues of developmental psychology from a life-span developmental perspective.

**PSYC 7170 THEORIES OF PERSONALITY (3).** LEC. 3. Analysis of current issues in personality theory.

**PSYC 7180 SOCIAL PSYCHOLOGY (3).** LEC. 3. Topics and literature on the social foundations of behavior.

**PSYC 7190 COGNITIVE PSYCHOLOGY (3).** LEC. 3. A survey of the nature of human intellectual functioning, including pattern recognition, memory, problem solving, reasoning and language comprehension and generation.

**PSYC 7200 ANIMAL COGNITION (3).** SEM. 3. Experimental analysis of the mechanisms that underlie animal cognition, including attention, concept formation, counting, language, memory, perception, timing, and problem solving.

**PSYC 7210 ANIMAL BEHAVIOR (3).** LEC. 3. Pr., PSYC 7140. Evolution of animal behavior, including mating, parental care, feeding, social, predatory, and defensive behavior.

**PSYC 7230 PSYCHOMETRIC THEORY (3).** LEC. 3. Pr., STAT 7000 and (P/C, STAT 7270 or P/C, PSYC 7270 or P/C, STAT 7020). Introduction to basic quantitative theory behind the construction and interpretation of test scores and scales.

**PSYC 7240 METHODS FOR STUDYING INDIVIDUAL BEHAVIOR (3).** LEC. 3. Examination of strategies for measuring individual/ environment interaction, using environmental interventions and identifying behavior change and its causes.

**PSYC 7250 CLINICAL RESEARCH METHODS AND ETHICS (3).** LEC. 3. Introduction to research methods and ethics in clinical psychology with an emphasis on critical analysis of the scientific literature.

**PSYC 7270 EXPERIMENTAL DESIGN IN PSYCHOLOGY (4).** LEC. 4. Pr., STAT 7000 and STAT 7020. Introduction to the analysis of data collected under different experimental designs. Credit will not be given for both PSYC 7270 and STAT 7270.

**PSYC 7300 ADULT PSYCHOPATHOLOGY (3).** LEC. 3. Current theoretical conceptions and research in adult psychopathology.

**PSYC 7910 PRACTICUM IN APPLIED PSYCHOLOGY (1-10).** PRA. Supervised practicum in applied psychology. A maximum of 12 hours will apply toward degree. Departmental approval. Course may be repeated for a maximum of 30 credit hours.

**PSYC 7930 DIRECTED STUDIES (1-3).** IND. Work under the direction of a faculty member on a psychological topic of mutual interest. No more than 3 hours count toward major. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**PSYC 7970 RESEARCH IN SPECIAL TOPICS (3).** IND. 3. Supervised scholarly activity related to student's field of study. Departmental approval. Course may be repeated with change in topics.

**PSYC 7980 APPLIED BEHAVIOR ANALYSIS CAPSTONE PROJECT (1-10).** PRA. Supervised practicum in applied psychology involving a behavior analysis project involving delivery of services to a consumer. Maximum of 6 credit hours will count toward degree. Departmental approval. Course may be repeated for a maximum of 30 credit hours.

**PSYC 7990 RESEARCH AND THESIS (1-10).** MST.

## Pharmacy Doctorate (PYDI)

**PSYC 8180 ADVANCED SOCIAL PSYCHOLOGY (3).** LEC. 3. Pr., PSYC 7180. Theories, research and issues in contemporary social psychology. Departmental approval.

**PSYC 8250 MULTIVARIATE METHODS (4).** LEC. 3, LAB. 2. Pr., STAT 7000 or STAT 7020. Introduction to the theory behind multivariate analyses and the statistical programs that support them.

**PSYC 8260 ANALYSIS OF TIME-RELATED DATA IN PSYCHOLOGY (3).** LEC. 3. Pr., STAT 7020 or PSYC 8250. Theory and practical applications of statistical approaches for time-related data.

**PSYC 8310 INTRODUCTION TO CLINICAL ETHICS AND METHODS (3).** LEC. 3. Interviewing skills, crisis intervention, professional and ethical issues in providing clinical services.

**PSYC 8320 PSYCHOLOGICAL ASSESSMENT OF ADULTS (3).** LEC. 3. Pr., (STAT 7270 or PSYC 7270) and PSYC 8310. Theories and techniques of the psychological assessment of adults.

**PSYC 8330 BEHAVIOR THERAPY (3).** LEC. 3. Pr., PSYC 8310. Conceptual and applied issues related to behavioral principles of assessment and treatment.

**PSYC 8340 SYSTEMS OF PSYCHOTHERAPY (3).** LEC. 3. Pr., PSYC 7300. A survey of theories and research related to modern systems of psychotherapy.

**PSYC 8350 APPLIED PSYCHOMETRIC PRINCIPLES (3).** LEC. 3. Pr., STAT 7020. Analysis of classical and modern test theory with an emphasis on applied psychometric principles.

**PSYC 8360 ASSESSMENT OF COGNITIVE ABILITIES AND ACHIEVEMENT (3).** LEC. 2, LAB. 2. Theories and techniques for the assessment of cognitive abilities and academic achievement.

**PSYC 8400 ADVANCED CHILD AND ADOLESCENT PSYCHOPATHOLOGY (3).** LEC. 3. Pr., PSYC 7300. Examination of current research and theory of behavioral, cognitive, and emotional disorders in childhood and adolescence.

**PSYC 8410 PSYCHOLOGICAL ASSESSMENT OF CHILDREN AND FAMILIES (3).** LEC. 3. Pr., PSYC 8310. Theories and techniques of the psychological assessment of children and their families.

**PSYC 8420 BEHAVIOR CHANGE IN CHILDREN (3).** LEC. 3. Pr., PSYC 8310 and (PSYC 8400 or PSYC 8410). Introduction to methods of prevention and treatment of cognitive, behavioral and emotional disorders of children.

**PSYC 8430 CONCEPTUALIZATION AND TREATMENT OF CHILD PSYCHOPATHOLOGY (3).** LEC. 3. Advanced study of developmental psychopathology and evidence-based treatment strategies for childhood disorders.

**PSYC 8440 HEALTH PSYCHOLOGY AND BEHAVIORAL MEDICINE (3).** LEC. 3. Contemporary research in health psychology and behavioral medicine and the empirical foundations of clinical practice.

**PSYC 8450 THEORY AND METHOD IN HUMAN ALCOHOL AND DRUG RESEARCH (3).** LEC. 3. Theoretical framework and methodological practices in basic research on human alcohol and drug abuse. Departmental approval.

**PSYC 8460 ASSESSMENT AND TREATMENT OF ALCOHOL AND DRUG PROBLEMS (3).** LEC. 3. Conceptual and empirical bases of clinical assessment and intervention for alcohol and drug problems. Departmental approval.

**PSYC 8470 BEHAVIORAL ECONOMICS OF SUBSTANCE ABUSE (3).** LEC. 3. Introduction to behavioral theories of choice and behavioral economics, and the application of these basic science areas to the study of substance abuse.

**PSYC 8480 ADVANCED PROFESSIONAL AND ETHICAL ISSUES IN CLINICAL PSYCHOLOGY (3).** LEC. 3. Graduate standing clinical psychology doctoral program. Advanced discussion of professional issues and ethical mandates of contemporary clinical psychology, emphasizing critical thinking skills and planning for a successful career in psychology.

**PSYC 8500 EXPERIMENTAL ANALYSIS OF BEHAVIOR SEMINAR (1).** SEM. 1. SU. Examination of professional preparation issues and recent scientific developments relevant to careers in the experimental analysis of behavior. Course may be repeated for a maximum of 6 credit hours.

**PSYC 8510 CONTEXT AND CONSEQUENCES OF BEHAVIOR (3).** LEC. 3. Pr., PSYC 7140. Advanced survey of the role that consequences play in acquisition, maintenance, and structure of behavior, and the methods by which this role is studied.

**PSYC 8520 CONCEPTUAL AND THEORETICAL ANALYSIS IN PSYCHOLOGY (3).** LEC. 3. Techniques of conceptual analysis relevant to the evaluation of theories and the interpretation and interpretation of psychological data.

**PSYC 8530 BEHAVIOR ANALYSIS AND HUMAN DEVELOPMENT (3).** LEC. 3. Examination of conceptual, theoretical, and scientific issues relevant to the study of psychological development from a behavior analytic perspective.

**PSYC 8550 APPLIED BEHAVIOR ANALYSIS (3).** LEC. 3. Pr., PSYC 7140. The scientific and conceptual foundations of applied behavior analysis and its strategies of intervention and evaluation. Departmental approval.

**PSYC 8560 HUMAN OPERANT BEHAVIOR (3).** LEC. 3. Pr., PSYC 8510. Strategies and tactics specific to the experimental analysis of operant processes in human learning and performance. Departmental approval.

**PSYC 8700 ADVANCED INDUSTRIAL PSYCHOLOGY (3).** LEC. 3. Analysis of methods and content of industrial (Personnel) psychology. Departmental approval.

**PSYC 8710 ADVANCED ORGANIZATIONAL PSYCHOLOGY (3).** LEC. 3. Analysis of major issues in organizational psychology. Departmental approval.

**PSYC 8720 PERSONNEL SELECTION (3).** LEC. 3. Pr., STAT 7000 and PSYC 8700. Analysis of classical, contemporary, theoretical, and practical issues related to personnel selection.

**PSYC 8730 PERFORMANCE APPRAISAL (3).** LEC. 3. Pr., (STAT 7270 or PSYC 7270) and PSYC 8700. Analysis of classical, contemporary, theoretical and practical issues related to the appraisal of employee work performance.

**PSYC 8740 LEADERSHIP AND MOTIVATION SEMINAR (3).** SEM. 3. Pr., (STAT 7270 or PSYC 7270) and PSYC 8700. Analysis of historical and contemporary theories of leadership and motivation and related research.

**PSYC 8750 PROFESSIONAL ISSUES IN I/O PSYCHOLOGY (1).** LEC. 1. Analysis of contemporary professional issues in I/O psychology. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PSYC 8910 CLINICAL PRACTICUM (1-4).** PRA. Pr., PSYC 8320 or PSYC 8410. Supervised practicum experience in clinical assessment and intervention techniques. Course may be repeated for a maximum of 30 credit hours.

**PSYC 8920 INTERNSHIP (0).** INT. Enrollment in full-time APA-approved 1-year pre-doctoral internship required for the PhD in clinical psychology. May not enroll in other course work. Doctoral candidacy.

**PSYC 8930 DIRECTED STUDIES IN PSYCHOLOGY (3).** IND. Review of a body of literature leading to the generation and defense of the Major Area Paper (written portion of the general doctoral examination). Approved doctoral plan of study. Course may be repeated for a maximum of 9 credit hours.

**PSYC 8970 SPECIAL TOPICS (1-3).** SEM. In-depth seminar on issues related to selected specializations in psychology. Departmental approval. Course may be repeated for a maximum of 18 credit hours.

**PSYC 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Departmental approval.

## Pharmacy Doctorate (PYDI)

Dr. Paul Jungnickel - 844-8348

**PYDI 5000 DRUGS AND DISEASES I (5).** LEC. 5. Integrated study of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Fall.

**PYDI 5020 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE I (2).** LAB. 6. This course integrates the skills necessary for the provision of pharmaceutical care. Source material introduces and integrates knowledge and skills focusing on patient assessment and communication. Fall.

**PYDI 5080 FOUNDATIONS OF PHARMACY (1).** WSP. 1. One week experience orienting first year PYDI students to the context, concepts, tools, and skills necessary for understanding of, and success in pharmacy education. Fall.

**PYDI 5090 PHARMACY PRACTICE EXPERIENCE I (2).** PRA. 2. SU. First of a six-course sequence of introductory practice experience in which the concept of pharmaceutical care is introduced by the provision of basic care to community based patients. Fall.

**PYDI 5100 DRUGS AND DISEASES II (5).** LEC. 5. Pr., PYDI 5000. Presents, in an integrated manner, pathophysiology and chemical, pharmacological biotechnology principles to explain the action of drugs; continuation of PYDI 5000.

**PYDI 5120 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE II (2).** LAB. 6. Pr., PYDI 5020. This course integrates pharmaceutical care skills. Source material introduces and integrates knowledge and skills focusing on pharmaceutical calculations, communication, physical assessment and use of clinical literature. Spring.

**PYDI 5130/5133 DRUG LITERATURE EVALUATION (2).** LEC. 2. Development of the ability to effectively and efficiently retrieve drug information and critically evaluate and interpret studies published in the medical and pharmaceutical literature.

**PYDI 5140 PRINCIPLES OF PHARMACOKINETICS (3).** LEC. 3. Pr., PYDI 5000. To prepare students to use pharmacokinetic information and measurements to evaluate drug therapy and recommend appropriate dosing strategies for drug administration and monitoring.

**PYDI 5190 PHARMACY PRACTICE EXPERIENCE II (2).** PRA. 2. SU. Pr., PYDI 5090. Second of a six-course sequence of introductory practice experience in which the concept of pharmaceutical care is introduced by the provision of basic care to community-based based patients. Spring.

**PYDI 5200 DRUGS AND DISEASES III (8).** LEC. 8. Pr., PYDI 5100 and PYDI 5140. Presentation in an integrated manner of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Continuation of PYDI 5100. Fall.

**PYDI 5220 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE III (2).** LAB. 6. Pr., PYDI 5120. Integrates the provision of pharmaceutical care and

## Pharmacy Practice, Clinical (PYPP)

pharmacy-specific skills related to drug-related problems. Supportive skills for the pharmaceutical sciences and other integrated skills are a major emphasis. Fall.

**PYDI 5290 PHARMACY PRACTICE EXPERIENCE III (2).** PRA. 2. SU. Third in six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients.

**PYDI 5300 DRUGS AND DISEASES IV (8).** LEC. 8. Pr., PYDI 5200. Presentation, in an integrated manner, of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Continuation of PYDI 5200. Spring.

**PYDI 5320 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE IV (2).** LAB. 6. Pr., PYDI 5220. Continuation of PYDI 5220. Spring.

**PYDI 5360/5363 PHARMACOTHERAPY 1 (3).** LEC. 3. Pr., PYPP 5260 and BIOL 3200 and (PYPS 5200 or PYPS 5203) and PYDI 5350 and PYPC 5340. Application of the basic, clinical and socio-behavioral sciences to renal disorders.

**PYDI 5370/5373 PHARMACOTHERAPY 2 (3).** LEC. 3. Pr., PYPP 5260 and (PYPS 5200 or PYPS 5203) and PYDI 5350 and PYPS 5340 and BIOL 3200. Application of the basic, clinical and socio-behavioral sciences to endocrine disorders.

**PYDI 5390 PHARMACY PRACTICE EXPERIENCE IV (2).** PRA. 2. SU. Pr., PYDI 5290. Fourth in a six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients. Spring.

**PYDI 5400/5403 PHARMACOTHERAPY 3 (3).** LEC. 3. Application of the basic, clinical and socio-behavioral sciences to infectious diseases.

**PYDI 5410/5413 PHARMACOTHERAPY 4 (3).** LEC. 3. Application of the basic, clinical and socio-behavioral sciences to cardiovascular disorders.

**PYDI 5420/5423 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE V (2).** LAB. 6. Application of the basic, clinical and socio-behavioral sciences to pulmonary disorders. Continuation of PYDI 5320.

**PYDI 5430/5433 PHARMACOTHERAPY 6 (3).** LEC. 3. Application of the basic, clinical and socio-behavioral sciences to neurological and psychiatric disorders.

**PYDI 5470 INTEGRATED PHARMACOTHERAPY I (6).** RCT. 6. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems.

**PYDI 5480 INTEGRATED PHARMACOTHERAPY II (6).** RCT. 6. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems.

**PYDI 5490 PHARMACY PRACTICE EXPERIENCE V (2).** PRA. 2. SU. Fifth in a six-course sequence of introductory practice experiences in which pharmaceutical care is provided to increasingly complex community based patients along with patient care team management responsibilities. Fall.

**PYDI 5500/5503 PHARMACOTHERAPY 7 (3).** LEC. 3. Application of the basic, clinical and socio-behavioral sciences to gastrointestinal disorders.

**PYDI 5510/5513 PHARMACOTHERAPY 8 (3).** LEC. 3. Application of the basic, clinical and socio-behavioral sciences to dermatological, rheumatological, hematological and oncological disorders.

**PYDI 5520/5523 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE VI (2).** LAB. 6. Pr., PYDI 5420. Application of the basic, clinical and socio-behavioral sciences to 125 infectious diseases. Continuation of PYDI 5420.

**PYDI 5530/5533 PHARMACOTHERAPY 10 (3).** LEC. 3. Pr., PYDI 5410 or PYDI 5413. Application of the basic, clinical and socio-behavioral sciences to cardiovascular disorders. Continuation of PYDI 5410.

**PYDI 5570 INTEGRATED PHARMACOTHERAPY III (6).** RCT. 6. Pr., PYDI 5480. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems. Continuation of PYDI 5480.

**PYDI 5580 INTEGRATED PHARMACOTHERAPY IV (6).** RCT. 6. Pr., PYDI 5480. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems. Continuation of PYDI 5570.

**PYDI 5590 PHARMACY PRACTICE EXPERIENCE VI (2).** PRA. 2. SU. Pr., PYDI 5490. Sixth in a six-course sequence of introductory practice experiences in which pharmaceutical care is provided to increasingly complex community based patients along with patient care team management responsibilities.

### Pharmacy Care Systems (PYPC)

Dr. Richard Hansen - 844-8302

**PYPC 5010 PATIENT CENTERED SKILLS (2).** LEC. 2. Development of methods for developing positive, therapeutic relationships with patients through the application of communications skills (empathy, assertiveness training, effective listening, etc.) and other behavioral interventions. Fall.

**PYPC 5110 PHARMACY LAW AND ETHICS (2).** LEC. 2. Basic legal and ethical principles of pharmaceutical care and their effect on the patient drug use process. Spring.

**PYPC 5210 PHARMACY PRACTICE DEVELOPMENT, MANAGEMENT, AND EVALUATION I (3).** LEC. 3. Overview of the development, management, and evaluation

of systems that support the provision of pharmaceutical care for patients in multiple health systems. Fall.

**PYPC 5310 PHARMACY PRACTICE DEVELOPMENT, MANAGEMENT, AND EVALUATION II (3).** LEC. 3. Pr., PYPC 5210. An overview of the development, management, and evaluation of systems that support the provision of pharmaceutical care for patients in multiple health systems. Continuation of PYPC 5210. Spring.

**PYPC 5710 INSTITUTIONAL PHARMACY 1 (3).** LEC. 3. Overview of the nature and scope of institutional pharmacy practice.

**PYPC 5720 MOTIVATIONAL INTERVIEWING (2).** LEC. 2. Pr., PYPC 5010. Basic and advanced training and exploration of motivational interviewing.

**PYPC 7810 HOSPITAL PHARMACY ADMINISTRATION (2).** LEC. 2. Administrative and policy-making procedures. Provides understanding of socioeconomic aspects of hospital pharmacy practice and competence in selected administrative skills.

**PYPC 7820 RESEARCH METHODS AND DESIGN HEALTH SCIENCE 1 (2).** LEC. 2. Application of scientific methods in health care. Departmental approval.

**PYPC 7830 RESEARCH METHODS IN THE HEALTH SCIENCES 2 (3).** LEC. 3. Pr., PYPC 7820. Application of the principles and concepts obtained in PYPC 7820.

**PYPC 7840 MEDICATION INFORMATION SYSTEMS (3).** LEC. 3. Health system informatics theories and methodologies. Demonstration of how information reduces uncertainty in health-care decision-making.

**PYPC 7860 THE PHARMACIST'S ROLE IN IMPROVING PATIENT ADHERENCE (3).** LEC. 3. Pr., PYPC 7820. Theories and methodologies involved in adherence to medication regimens.

**PYPC 7870 SOCIAL, BEHAVIORAL, AND ADMINISTRATIVE ASPECTS OF PHARMACY PRACTICE (3).** LEC. 3. Theories and applications in social, behavioral, and administrative aspects of pharmacy practice and medication use systems.

**PYPC 7950 SEMINAR (1).** SEM. 1. SU. Required of all Pharmacy Care Systems Masters students. Course may be repeated for a maximum of 6 credit hours.

**PYPC 7960 SPECIAL PROBLEMS IN PHARMACY CARE SYSTEMS (2-3).** LEC. Special problems. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPC 7990 RESEARCH AND THESIS (1-10).** MST. Credit hours to be arranged. Course may be repeated with a change in topic.

**PYPC 8950 SEMINAR (1).** SEM. 1. SU. Required of all Pharmacy Care Systems doctoral students.

**PYPC 8960 SPECIAL PROBLEMS IN PHARMACY CARE SYSTEMS (1-3).** LEC. Credit hours to be arranged. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPC 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Credit hours to be arranged. Course may be repeated with change in topic.

### Pharmacy Practice, Clinical (PYPP)

Dr. Gordon Sacks- 844- 4033

**PYPP 5550/5553 DRUG INDUCED DISEASE (2).** LEC. 2. Patient evaluation in drug-induced disease and polypharmacy.

**PYPP 5600 DRUG INFORMATION-SELECTIVE (5).** PRA. 5. Advanced practice experience in providing drug information services to health care providers.

**PYPP 5610 COMMUNITY PHARMACEUTICAL CARE (5).** PRA. 5. Advanced Practice Experience in a community pharmacy practice setting that provides pharmaceutical care services such as disease management and other advanced patient care activities.

**PYPP 5620 MEDICINE I (5).** PRA. 5. Advanced practice experience in providing Inpatient Pharmaceutical Care.

**PYPP 5630 MEDICINE II - SELECTIVE (5).** PRA. 5. Advanced practice experience in providing Inpatient Pharmaceutical Care. Additional experience beyond PYPP 5620.

**PYPP 5640/5643 PRIMARY/AMBULATORY CARE I (5).** PRA. 5. Advanced practice experience in providing pharmaceutical care to patients as they initially access the health care system.

**PYPP 5650/5653 PRIMARY/AMBULATORY CARE II (5).** PRA. 5. Advanced practice experience in providing pharmaceutical care to patients as they initially access the health care system. Continuation of PYPP 5640.

**PYPP 5660 HEALTH SYSTEM PRACTICE (5).** PRA. 5. Advanced practice experience in a health system setting that prepares the student to adapt and function within systems of integrated pharmaceutical care services.

**PYPP 5670 PRACTICE ELECTIVE I (5).** PRA. 5. Elective experience in an advanced practice experience setting in which the student establishes personal learning goals and responsibilities.

**PYPP 5680 PRACTICE ELECTIVE II (5).** PRA. 5. Elective experience in an advanced practice experience setting in which the student establishes personal learning goals and responsibilities.

## Pharmaceutical Sciences (PYPS)

**PYPP 5690 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE VII (2).** SEM. 2. Student will demonstrate the ability to evaluate and synthesize pertinent literature, and effectively communicate pharmacotherapy-related material in one platform (seminar) presentation and one poster.

**PYPP 5700 ADVANCED PRACTICE EXPERIENCE PRESENTATIONS (0).** PRA. Students will demonstrate the ability to evaluate and synthesize pertinent literature, and communicate pharmacotherapy-related material in patient case, journal club and in service presentations.

**PYPP 5710 METABOLIC SYNDROME (2).** LEC. 2. Advanced material on the assessment and treatment of disease states related to Metabolic Syndrome.

**PYPP 5730 DRUGS IN PREGNANCY (2).** LEC. 2. Medication issues related to pregnancy and lactation.

**PYPP 5740 PEDIATRIC PHARMACOTHERAPY (2).** LEC. 2. Medication issues related to the pediatric population.

**PYPP 5750 ANTITHROMBOTIC/THROMBOLYTIC THERAPY (2).** LEC. 2. Provides the student with a working knowledge of both basic and advanced pharmacotherapeutic issues related to antithrombotic and thrombolytic therapy.

**PYPP 5760 SELF CARE AND NONPRESCRIPTION MEDICATION (2).** LEC. 2. Knowledge and skills to serve as a self care advisor to patients seeking assistance.

**PYPP 5770 WOMEN'S HEALTH ISSUES (2).** LEC. 2. Understanding factors that affect women's premature morbidity and mortality.

**PYPP 5780 ACUTE CARE PHARMACOTHERAPY (2).** LEC. This course is designed to orient the pharmacy student to the acute care environment and familiarize them with patient disease states and pharmacotherapy associated with the acutely ill patient.

**PYPP 5790 PSYCHIATRIC PHARMACOTHERAPY (2).** LEC. 2. To expose pharmacy students to psychiatry and to develop a working knowledge of both basic and advanced pharmacotherapeutic issues related to psychopharmacology.

**PYPP 5810 EVIDENCE-BASED PHARMACOTHERAPY (2).** LEC. 2. Student pharmacists will become more proficient at literature evaluation and application of evidence-based pharmacotherapy/medicine to patient care.

**PYPP 5960/5963 SPECIAL PROBLEMS IN PHARMACY PRACTICE (1-3).** LEC. Selected topics related to pharmacy practice. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPP 5970 SPECIAL TOPICS IN PHARMACY PRACTICE (2).** LEC. 2. Instruction and discussion in a selected current topic in Pharmacy Practice. Course may be repeated for a maximum of 4 credit hours.

### Pharmaceutical Sciences (PYPS)

**PYPS 5230 DRUG PRODUCTS I (3).** LEC. 3. Pr., PYDI 5100 and PYDI 5120. Physical-chemical and biopharmaceutical principles and technologies used in the preparation of solid pharmaceutical dosage forms and novel drug delivery systems. Fall.

**PYPS 5310 PHARMACOLOGY 1 (3).** LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion, therapeutic and other uses of drugs.

**PYPS 5320 PHARMACOLOGY 2 (3).** LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.

**PYPS 5330 DRUG PRODUCTS II (3).** LEC. 3. Pr., PYPS 5230 and PYDI 5200 and PYDI 5220. Physical-chemical and biopharmaceutical principles and technologies used in the preparation of solid pharmaceutical dosage forms and novel drug delivery systems. Continuation of PYPS 5230. Spring.

**PYPS 5350 TOXICOLOGY (3).** LEC. 3. The basic science of poisons including the acute and chronic toxicology of common environmental, agricultural, industrial, commercial, medicinal and naturally occurring substances.

**PYPS 5360 CELLULAR PHARMACOLOGY (3).** LEC. 3. Cytological basis of pharmacodynamics including drug receptor interactions, drug metabolism, and characteristics of adverse drug reactions.

**PYPS 5370 FUNDAMENTALS OF BIONUCLEONICS (3).** LEC. 3. Theoretical and practical applications of trace-level radioactivity for research application to pharmacy and allied sciences.

**PYPS 5390 NEUROPHARMACOLOGY OF DRUG ABUSE (2).** LEC. 2. Pr., PYDI 5300. An in-depth study of drugs of abuse, including mechanisms of action, pharmacokinetics, addition, physical dependence and the effects of drug use during pregnancy. Substance abuse treatment strategies will also be discussed. Departmental approval.

**PYPS 5500 PHARMACOGNOSY (3).** LEC. 3. Medicinal plants, folk medicines, herbal drugs and poisonous plants including constituents and uses.

**PYPS 5900 SPECIAL PROBLEMS IN PHARMACEUTICAL SCIENCES (1-3).** LEC. Selected laboratory research topics in pharmaceutical sciences. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**PYPS 6310 PHARMACOLOGY 1 (3).** LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion, therapeutic and other uses of drugs.

**PYPS 6320 PHARMACOLOGY 2 (3).** LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.

**PYPS 6330 PHARMACOLOGY 3 (3).** LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.

**PYPS 6350 TOXICOLOGY (3).** LEC. 3. The basic science of poisons including the acute and chronic toxicology of common environmental, agricultural, industrial, commercial, medicinal and naturally occurring substances.

**PYPS 6360 CELLULAR PHARMACOLOGY (3).** LEC. 3. Cytological basis of pharmacodynamics including drug receptor interactions, drug metabolism, and characteristics of adverse drug reactions.

**PYPS 6370 FUNDAMENTALS OF BIONUCLEONICS (3).** LEC. 3. Theoretical and practical applications of trace-level radioactivity for research application to pharmacy and allied sciences.

**PYPS 6390 NEUROPHARMACOLOGY OF DRUG ABUSE (2).** LEC. 2. An in-depth study of drugs of abuse, including mechanisms of action, pharmacokinetics, addiction, physical dependence and the effects of drug use during pregnancy. Substance abuse treatment strategies will also be discussed. Departmental approval.

**PYPS 6500 PHARMACOGNOSY (3).** LEC. 3. Medicinal plants, folk medicines, herbal drugs and poisonous plants including constituents and uses.

**PYPS 7010 PHARMACOKINETICS (4).** LEC. 4. Pharmacokinetic and pharmacodynamic principles and methods used to study the absorption, distribution, metabolism and excretion of drugs. Departmental approval.

**PYPS 7020 SCIENCE AND TECHNOLOGY OF TABLETING (2).** LEC. 2. Pr., PYPS 7030. Formulation, compression, coating and evaluation of tablets. Departmental approval.

**PYPS 7021 SCIENCE AND TECHNOLOGY OF TABLETING (2).** LAB. 6. Pr., PYPS 7020. This class presents in-depth coverage of various forms of violence from the sociological perspective.

**PYPS 7030 DRUG PRODUCT DEVELOPMENT (4).** LEC. 4. Formulation, evaluation, and use of various pharmaceutical dosage forms including biopharmaceutical aspects. Departmental approval.

**PYPS 7040 PHYSICAL PHARMACY (4).** LEC. 4. Application of physical chemical principles to dosage form design and evaluation. Departmental approval.

**PYPS 7050 NOVEL DOSAGE FORMS (3).** LEC. 3. Pr., PYPS 7030. Theoretical basis and design of controlled release and site specific drug delivery systems. Departmental approval.

**PYPS 7060 FORMULATION AND DELIVERY OF PEPTIDE/PROTEIN DRUGS (3).** LEC. 3. Pr., PYPS 7030. Formulation and delivery problems unique to peptide/protein pharmaceuticals and strategies to overcome such problems. Departmental approval.

**PYPS 7070 TRANSPORT PHENOMENA IN PHARMACEUTICAL SYSTEMS (3).** LEC. 3. Mechanisms of drug transport in various pharmaceutical dosage forms and biological systems. Elucidation of methods to characterize drug transport phenomena. Correlation of transport phenomena with drug disposition in the body. Emphasis on peptide, protein, and oligonucleotide drugs. Departmental approval.

**PYPS 7080 ADVANCED BIOPHARMACEUTICS (3).** LEC. 3. Pr., PYPS 7010. The mathematical and pharmacokinetic relationships between physical and chemical properties of a drug and its dosage form and biological effects.

**PYPS 7110 STABILITY KINETICS OF PHARMACEUTICALS (3).** LEC. 3. Pr., PYPS 7030. Principles of chemical kinetics as applied to the unique stability problems of the various pharmaceutical dosage forms. Departmental approval.

**PYPS 7230 ADVANCED MEDICINAL CHEMISTRY I (3).** LEC. 3. Explanation of the principles of Medicinal Chemistry progressing to qualitative and quantitative descriptions of the synthesis, influence of physical and chemical properties of chemical substances on biological activity and biodisposition. Departmental approval.

**PYPS 7240 ADVANCED MEDICINAL CHEMISTRY II (3).** LEC. 3. Pr., PYPS 7230. Advanced study of organic medicinal agents featuring organic synthesis, chemical and pharmacological properties and current literature topics. Departmental approval.

**PYPS 7250 DRUG ACTION AND DESIGN (3).** LEC. 3. Pr., PYPS 7230 and PYPS 7240. Modern molecular modeling methods with emphasis on computer-aided drug design, quantitative structure activity relationships and combinatorial chemistry.

**PYPS 7260 SEPARATION SCIENCE (4).** LEC. 4. A survey of modern separation science with emphasis on analytical scale techniques including as chromatography, liquid chromatography and electrophoretic separations. Departmental approval.

## Sociology (SOCY)

**PYPS 7270 MASS SPECTROMETRY OF ORGANIC COMPOUNDS (4).** LEC. 4. A survey of modern techniques in mass spectrometry with emphasis on fragmentation chemistry and structure education. Departmental approval.

**PYPS 7300 NEUROPHARMACOLOGY (3).** LEC. 3. Pr., PYPS 6310. Neurochemical mechanisms related to the pharmacological actions of medicinal agents affecting the central nervous system.

**PYPS 7310 PSYCHOPHARMACOLOGY 1 (3).** LEC. 3. Pr., PYPS 7300. Discussions on anxiety, depression and related disorders.

**PYPS 7320 PSYCHOPHARMACOLOGY 2 (3).** LEC. 3. Pr., PYPS 7300. Discussions on schizophrenia, Alzheimer's disease, experimental methods and animal models of disorders.

**PYPS 7330 PHARMACOLOGY RESEARCH METHODS (3).** LEC. 1, LAB. 9. Experimental design, research methods and data analysis in pharmacology.

**PYPS 7360 NEUROPHARMACOLOGY OF DRUG DEPENDENCE (2).** LEC. 2. An in-depth study of the neurochemical changes that occur during chronic drug use. Exploration of theories on the causes of drug dependence and current and proposed pharmacological treatments of drug addiction. Departmental approval.

**PYPS 7370 PHARMACOLOGY-TOXICOLOGY SEMINAR (1).** SEM. 1. SU. Course may be repeated for a maximum of 2 credit hours.

**PYPS 7500 METABOLISM AND DISPOSITION XENOBIOTICS (2).** LEC. 2. Portals of entry, absorption, distribution and elimination of drugs and xenobiotics. Metabolic mechanisms relevant to chemical structure and principles of pharmacokinetics will be emphasized.

**PYPS 7510 ENVIRONMENTAL TOXICOLOGY (3).** LEC. 3. Mechanisms of action of agricultural and industrial chemicals, drugs, radiation, metals, gases, air particulates, food additives, plant and food poisons in the environment.

**PYPS 7600 HETEROCYCLIC MEDICINAL CHEMISTRY (3).** LEC. 3. Pr., CHEM 7220. A survey of chemical nature of heterocyclic moieties of medicinal substances with emphasis on methods of synthesis of medicinally important compounds containing a heterocyclic ring. Departmental approval.

**PYPS 7930 DIRECTED STUDIES IN PHARMACAL SCIENCES (1-3).** LEC. Selected laboratory research topics in the pharmaceutical sciences. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPS 7950 SEMINAR (1).** SEM. 1. SU. Required of all 06 PYPS students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPS 7960 SPECIAL PROBLEMS IN PHARMACAL SCIENCES (1-3).** IND. Pr., PYPS 7000-7999. Selected study topics in the pharmaceutical sciences. Course may be repeated for a maximum of 6 credit hours. Departmental approval and 6 hours of 7000-level courses. Course may be repeated for a maximum of 6 credit hours.

**PYPS 7990 RESEARCH AND THESIS (1-10).** MST. Research for Masters students. Course may be repeated with change in topics.

**PYPS 8930 DIRECTED STUDIES IN PHARMACAL SCIENCES (1-3).** LEC. Selected laboratory research topics in the pharmaceutical sciences. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPS 8950 SEMINAR (1).** SEM. 1. SU. Required of all 09 PYSC students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**PYPS 8960 DIRECTED READINGS IN PHARMACAL SCIENCES (1-3).** IND. Pr., PYPS 7000-7999. Selected study topics in the pharmaceutical sciences. 09 PYSC standing or departmental approval and 6 hours of 7000-level courses. Course may be repeated for a maximum of 6 credit hours.

**PYPS 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Research for doctoral students. Course may be repeated with change in topic.

### Sciences and Mathematics, Interdepartmental (SCMH)

Mrs. Beverley Childress - 844-5743

**SCMH 1010 CONCEPTS OF SCIENCE (4).** LEC. 3, LAB. 2. Science Core. Interdisciplinary course which presents major scientific concepts in all the main fields of science. If a student takes SCMH 1010, that should precede taking either BIOL 1010, CHEM 1010, GEOL 1100, PHYS 1000, or PHYS 1150 for sequential completion of the AU core science requirement.

**SCMH 1017 HONORS CONCEPTS OF SCIENCE (4).** LEC. 3, LAB. 2. Pr., Honors College. Science Core. Interdisciplinary course which presents major scientific concepts in all the main fields of science. If a student takes SCMH 1010, that should precede taking either BIOL 1010, CHEM 1010, GEOL 1100, PHYS 1000, or PHYS 1150 for sequential completion of the AU core science requirement.

**SCMH 1890 PRE-HEALTH PROFESSIONS ORIENTATION (1).** LEC. 1. SU. Orientation and guidance for all freshmen planning to seek admission to health professions schools, such as medicine, dentistry, optometry, physical therapy, and pharmacy.

**SCMH 3810 PRE-PHYSICAL THERAPY PRACTICUM (1).** PRA. 2. SU. Direct observation of physical therapists at an approved facility in the Auburn-Opelika area. Instructor approval.

**SCMH 3890 PRE-MEDICAL PRECEPTORSHIP (1).** LAB. 1. SU. Direct observation and interaction with physicians in various medical specialties at East Alabama Medical Center or at their offices. Departmental approval.

**SCMH 4920 SCIENCES AND MATHEMATICS INTERNSHIP (3).** LEC. 3. SU. Practical on-the-job training in some area related to Sciences and Mathematics. Course may be repeated for a maximum of 6 credit hours.

**SCMH 5010 CLINICAL APPLICATIONS I (3).** LEC. 2. A study of the clinical/personal issues facing primary care physicians in the rural community. Must be enrolled in the Rural Medicine Program.

**SCMH 5020 CLINICAL APPLICATIONS II (3).** LEC. 2, CLN/LEC. 1. Pr., SCMH 5010. A continuation of SCMH 5010.

### Sociology (SOCY)

Dr. Kelly Alley - 844-5049

#### ANTHROPOLOGY (ANTH)

**ANTH 1000 INTRODUCTION TO ANTHROPOLOGY (3).** LEC. 3. Social Science I Core. Introduction to the study of human evolution, early civilizations and globalization, linguistic and cultural problems using the four sub-fields of anthropology: biological/physical anthropology, archaeology, cultural anthropology and linguistics.

**ANTH 1007 HONORS INTRODUCTION TO ANTHROPOLOGY (3).** LEC. 3. Pr., Honors College. Honors introduction to the study of human evolution, early civilizations and globalization, linguistic and cultural problems using the four sub-fields of anthropology: biological/physical anthropology, archaeology, cultural anthropology and linguistics. Credit will not be given for both ANTH 1000 and ANTH 1007.

**ANTH 2000 ETHNOGRAPHIC METHODS (3).** LEC. 3. Pr., ANTH 1000. Approaches, techniques, and strategies for carrying out ethnographic research and analyzing qualitative data in the social sciences.

**ANTH 2100 INTRODUCTORY ARCHAEOLOGY (3).** LEC. 3. Pr., ANTH 1000. A broad introduction to archaeology, designed to introduce the history, principles, and methods of modern anthropological archaeology. Departmental approval.

**ANTH 2300 INTRODUCTION TO PHYSICAL ANTHROPOLOGY (3).** LEC. 3. Pr., ANTH 1000. An introduction to human origins and development using a genetic and anthropometric approach.

**ANTH 2310 RACE, GENDER, AND HUMAN VARIATION (3).** LEC. 3. Social Science Core I. Explores the broad range of contemporary human biological variation in an evolutionary perspective and examines the social construction of race and gender, including associated problems of typological thinking in an historical context.

**ANTH 2400 APPLIED ANTHROPOLOGY (3).** LEC. 3. Social Science Core I. How anthropology issues to solve contemporary problems in non-academic environments. Areas such as social and environmental policy, international policy, epidemiology and medical anthropology, forensic anthropology, and archaeology are examined.

**ANTH 2500 ANTHROPOLOGY OF GLOBAL STUDIES (3).** LEC. 3. Social Science Core I.A broad-based study of processes and problems that transcend national boundaries, including global historical processes politics, migrations, trade, disease, environmental change, and sustainability.

**ANTH 2600 FORENSIC ANTHROPOLOGY (3).** LEC. 3. Social Science Core I. An introduction to the methods and procedures of forensic anthropological studies in archaeology and physical anthropology. Class includes both lectures and limited laboratory experience.

**ANTH 2700 PEOPLES AND CULTURES OF ASIA (3).** LEC. 3. Social Science Core I. An introduction to the traditions, religions, histories, and nation-states of the people of Asia, using a cultural approach.

**ANTH 2800 ANTHROPOLOGY OF THE AFRICAN DIASPORA (3).** LEC. 3. Social Science I Core. Anthropological perspectives on peoples of the African Diaspora. Archaeological, ethno historical, and contemporary research will be used to explore the lives of enslaved Africans and their descendants in the Caribbean, Latin America and North America and issues such as of identity, symbols, power, and social relations.

**ANTH 3000 CULTURE, MARRIAGE AND THE FAMILY (3).** LEC. 3. Pr., ANTH 1000. The role and meaning of kinship and its universal and particularistic features in human society.

**ANTH 3100 LANGUAGE AND CULTURE (3).** LEC. 3. Pr., SSCI and jr. standing. The course examines the interplay between language and culture, including sociolinguistics, discourse, mythology, and folklore.

**ANTH 3200 ANTHROPOLOGY OF GENDER (3).** LEC. 3. Pr., ANTH 1000. Gender relations and representations in different cultures, historical periods, and discourses.

**ANTH 3300 PHYSICAL ANTHROPOLOGY (3).** LEC. 3. Pr., ANTH 1000 and ANTH 2310. An overview of physical anthropology including evolutionary theory and genetics, primatology, human origins, and biological variation of contemporary human populations. Concepts will be applied during in-class laboratory exercises.

## Sociology (SOCY)

**ANTH 3400 ARCHAEOLOGICAL FIELD SCHOOL (6).** LEC. 6. Pr., ANTH 1000. Field methods. Archaeological surveying and excavation procedures taught at selected locations.

**ANTH 3450 ARCHAEOLOGICAL FIELD PROBLEMS (1-3).** LEC. 1, LAB. 2. Pr., ANTH 1000. A practical investigation of a specific field problem that involves excavation techniques, mapping, and data recording. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ANTH 3500 ARCHAEOLOGICAL LABORATORY TECHNIQUES (1-3).** LEC. 1, LAB. 2. Pr., ANTH 1000. Analysis, preservation, cataloging, and restoration of archaeological materials. Course may be repeated for a maximum of 3 credit hours.

**ANTH 3550 ARCHAEOLOGICAL LABORATORY PROBLEMS (1-3).** LEC. 1, LAB. 2. Pr., ANTH 1000. Investigates a specific archaeological problem or problems and involves students in laboratory techniques and research. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ANTH 3600 MEDICAL ANTHROPOLOGY (3).** LEC. 3. Pr., SSCI and jr standing. How universal experiences of illness and healing are understood by people of different cultures.

**ANTH 3700 POLITICAL ECOLOGY (3).** LEC. 3. Pr., SSCI and jr standing. Problems in ethnoecology, cultural ecology, political ecology and environmentalism.

**ANTH 3800 MESOAMERICAN ARCHAEOLOGY (3).** LEC. 3. Pr., ANTH 1000 Or departmental approval and jr. standing. The prehistoric cultures of Mesoamerica, from the Olmecs to the Aztecs.

**ANTH 3850 SOUTHEASTERN ARCHAEOLOGY (3).** LEC. 3. Pr., ANTH 1000. The diversity and complexity of prehistoric to protohistoric cultures of the southeastern United States.

**ANTH 3910 ARCHAEOLOGY LABORATORY PRACTICUM (3).** LEC. 1, LAB. 2. Pr., ANTH 1000 and ANTH 2100. Analysis, preservation, cataloging and restoration of archaeological materials.

**ANTH 3930 HISTORICAL ARCHAEOLOGY AND ETHNOHISTORY (3).** LEC. 3. Pr., ANTH 1000. Historical archaeology and ethnohistory with emphasis on the cultures of peoples who left few written records. Jr. Standing.

**ANTH 3940 ARCHAEOLOGY LABORATORY PROBLEMS (3).** LEC. 1, LAB. 2. Pr., ANTH 1000 and ANTH 2100. Investigates a specific archaeological problem or problems and involves students in laboratory techniques and research.

**ANTH 3960 ARCHAEOLOGY FIELD PROBLEMS (3).** LEC. 1, LAB. 2. Pr., ANTH 1000 and ANTH 2100. A practical investigation of a specific field problem that involves excavation techniques, mapping and data recording.

**ANTH 4300 THE ANTHROPOLOGY OF LAW (3).** LEC. 3. Pr., ANTH 1000. An introduction to the study of law in cultures and societies around the world. Jr. standing.

**ANTH 4310 ANTHROPOLOGICAL THEORY (3).** LEC. 3. Pr., ANTH 1000. Major thinkers in cultural anthropology and their theoretical models considered in historical perspective.

**ANTH 4600 FOOD, CULTURE, AND NUTRITION (3).** LEC. 3. Pr., ANTH 1000. An exploration into human food choices and nutrition past present, this course fosters critical thinking on issues of identity, economics, and ecology in human consumption.

**ANTH 4920 INTERNSHIP IN ANTHROPOLOGY (3).** AAB/INT. 3. Pr., ANTH 1000. An internship with a federal/state agency for practical work or research on anthropological problems.

**ANTH 4960 SPECIAL PROBLEMS (3).** LEC. 3. Pr., ANTH 1000 An independent reading program to pursue specific interests in anthropology not covered in other courses.

**ANTH 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. 3. Pr., Honors College. ANTH 1000 Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ANTH 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. ANTH 1000. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**ANTH 5100 NORTH AMERICAN INDIANS (3).** LEC. 3. Pr., ANTH 1000. A comparative anthropological, cultural, and ethnohistorical overview of Native Americans. Jr. Standing.

**ANTH 5200 GENDER DEVELOPMENT AND CULTURE (3).** LEC. 3. Pr., ANTH 1000. The role of gender and culture in Third World development from an anthropological perspective. Jr. Standing.

**ANTH 5600 CULTURE MEDICINE AND POWER (3).** LEC. 3. Pr., ANTH 1000. Power in the context of illness and healing at local, national, and international levels. Jr. Standing.

**ANTH 5700 CRITIQUE OF DEVELOPMENT (3).** LEC. 3. Pr., ANTH 3700. The meanings and structures of national and international development.

**ANTH 5930 DIRECTED STUDIES (1-3).** IND. Pr., ANTH 1000. A directed study course in anthropology that allows students to explore concepts not covered in other courses. Course may be repeated for a maximum of 6 credit hours.

**ANTH 5970 SPECIAL TOPICS IN ANTHROPOLOGY (3).** LEC. 3. Pr., ANTH 1000. Examination of a specific problem in ethnographic methods, theory, and cultural analysis.

**ANTH 6100 NORTH AMERICAN INDIANS (3).** LEC. 3. An advanced comparative cultural and ethnohistorical overview of the Native American cultures of North America, emphasizing change and contact situations.

**ANTH 6200 GENDER DEVELOPMENT AND CULTURE (3).** LEC. 3. The role of gender and culture in Third World economic development from an anthropological perspective.

**ANTH 6600 CULTURE MEDICINE AND POWER (3).** LEC. 3. Power in the context of illness and healing at local, national, and international levels.

**ANTH 6700 CRITIQUE OF DEVELOPMENT (3).** LEC. 3. The meanings and structures of national and international development in historical perspective to include cultural values, power, inequality, and resistance.

**ANTH 6930 DIRECTED STUDY (1-3).** IND. A directed study course in anthropology that allows students to explore concepts not covered in other courses. Course may be repeated for a maximum of 6 credit hours.

**ANTH 6970 SPECIAL TOPICS IN ANTHROPOLOGY (3).** LEC. 3. Pr., ANTH 1000. Examination of a specific problem in ethnographic methods, theory, and cultural analysis.

## SOCIOLOGY (SOCY)

**SOCY 1000 SOCIOLOGY GLOBAL PERSPECTIVE (3).** LEC. 3. Social Science I Core. Introduction to the study of social and cultural patterns of society.

**SOCY 1007 HONORS SOCIOLOGY (3).** LEC. 3. Pr., Honors College. Social Science I Core. Introduction to the study of social and cultural patterns in society.

**SOCY 2000 SOCIAL ISSUES (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. An exploration of the claims and conflicts of public issues and moral apprehensions; topics may include crime, the environment, gender and racial inequality, various syndromes.

**SOCY 2050 CRIME AND JUSTICE IN AMERICA (3).** LEC. 3. The distribution and measurement of crime, different variations in criminal behavior and the handling of crime in the American criminal justice system.

**SOCY 2100 POPULATION AND SOCIETY (3).** LEC. 3. A survey of theories and research of demographic processes and their interaction with the economy, education, family, medicine, science and technology.

**SOCY 2200 SOCIAL PSYCHOLOGY: SOCIOLOGICAL PERSPECTIVES (3).** LEC. 3. An examination of collective influences on the person and the role the person plays in sustaining collective conditions.

**SOCY 3000 CRIMINOLOGY (3).** LEC. 3. Examine etiological issues related to crime. Major theories of crime causation from a wide variety of perspectives are explored in detail.

**SOCY 3100 POLICE AND SOCIETY (3).** LEC. 3. CRIM 2000 or CRIM 3000. Departmental approval. A sociological overview of policing and current issues that related to the police.

**SOCY 3200 SPORTS IN AMERICA (3).** LEC. 3. Sociological perspectives on sports in the social system; organization and culture of sports relationship to social class, race and gender; and the interconnections between sport and the larger society.

**SOCY 3250 SENTENCING AND CORRECTIONS (3).** LEC. 3. CRIM 2000 or CRIM 3000 Departmental approval. An in-depth analysis of sentencing policy and the correction system.

**SOCY 3300 SOCIOLOGY OF THE FAMILY (3).** LEC. 3. The family as a major social institution with emphasis on the American family; cross-cultural comparisons provide perspective.

**SOCY 3400 SOCIAL THOUGHT (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. Examines ancient and contemporary thinking influencing the social and behavioral sciences and public commentaries on social issues and criticisms.

**SOCY 3500 MINORITY GROUPS (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. An exploration of the sources and uses of minority representations in the U.S. addressing inequalities such as race, ethnicity, gender and sexual orientation.

**SOCY 3550 DELINQUENCY AND JUVENILE JUSTICE (3).** LEC. 3. CRIM 2000 or CRIM 3000. Departmental approval. The nature and distribution of delinquency in the United States, as well as the various components of the juvenile justice system.

**SOCY 3700 METHODS OF SOCIAL RESEARCH (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. Methodological approaches to data collection used by social scientist including logic of science, hypothesis formation and research design.

**SOCY 4000 SOCIALIZATION (3).** LEC. 3. Examines mind, self, society and interaction as symbolic phenomena grounded in social process. Covers major intellectual influences, concepts and figures.

**SOCY 4100 DEVIANCE (3).** LEC. 3. Analysis of creation and reaction to deviance using theoretical approaches including demonic possession, social disorganization, pathological models and labeling examining several deviant groups.

## Sociology (SOCY)

**SOCY 4200 MEDICAL SOCIOLOGY (3).** LEC. 3. The nature and organization of medical practice and health delivery systems with special attention to the role of physicians, patients, disease and the relationship between culture, politics and health.

**SOCY 4300 FIELD INSTRUCTION (3).** LEC. 3. Supplementary instruction concurrent with experience in some field involving application of sociological perspectives to community life. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**SOCY 4400 CONTEMPORARY THEORY (3).** LEC. 3. A survey of theorists from Comte to the present, emphasizing theory construction, theoretical analysis and differences in theoretical approaches.

**SOCY 4700 THEORIES OF CRIME AND CRIMINALITY (3).** LEC. 3. Theories of crime causation with emphasis on theory construction, theory analysis, and differences in theoretical approaches.

**SOCY 4800 SENIOR SEMINAR (3).** LEC. 3. Seminar builds upon prior coursework in theory, methods, and statistics for an in-depth examination of substantive areas in Sociology. Students must demonstrate proficiency in critical thinking and analysis and in written and oral communication.

**SOCY 4960 SPECIAL PROBLEMS IN SOCIOLOGY (3).** IND. 3. An independent reading program under supervision, to allow pursuit of specific interests in sociology not covered in other course offerings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**SOCY 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. 3. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**SOCY 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**SOCY 5200 SOCIOLOGY OF LAW (3).** LEC. 3. Controversial and contemporary issues in the field of criminal law from a sociological perspective.

**SOCY 5500 VICTIMOLOGY (3).** LEC. 3. The impact of victimization upon the crime victim, offender, and society, as well as the dynamics of the victim-offender relationship.

**SOCY 5600 SEX CRIMES (3).** LEC. 3. Criminal sexual behavior, the social influences on what is defined as sexually deviant, and how the criminal justice system handles sex offenders.

**SOCY 5650 DRUGS AND SOCIETY (3).** LEC. 3. The context and correlates of drug use, relationship with crime and delinquency, and societal reaction to drug abuse.

**SOCY 5670 SOCIOLOGY OF GENDER (3).** LEC. 3. Pr., SOCY 1000. Social definitions and implications of gender, with emphasis on work, media, law, and interpersonal relationships.

**SOCY 5970 SPECIAL TOPICS IN SOCIOLOGY (3).** LEC. 3. Study of substantive areas related to the discipline of sociology. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**SOCY 6200 SOCIOLOGY OF LAW (3).** LEC. 3. Controversial and contemporary issues in the field of criminal law from a sociological perspective.

**SOCY 6500 VICTIMOLOGY (3).** LEC. 3. The impact of victimization upon the crime victim, offender, and society, as well as the dynamics of the victim-offender relationship.

**SOCY 6600 SEX CRIMES (3).** LEC. 3. Criminal sexual behavior, the social influences on what is defined as sexually deviant, and how the criminal justice system handles sex offenders.

**SOCY 6650 DRUGS AND SOCIETY (3).** LEC. 3. The context and correlates of drug use, relationship with crime and delinquency, and societal reaction to drug abuse.

**SOCY 6670 SOCIOLOGY OF GENDER (3).** LEC. 3. Pr., SOCY 1000. Social definitions and implications of gender, with emphasis on work, media, law, and interpersonal relationships.

**SOCY 6970 SOCIOLOGY SPECIAL TOPICS (3).** LEC. 3. Study of substantive areas related to the discipline of sociology. Course may be repeated for a maximum of 6 credit hours.

**SOCY 7000 ADVANCED SOCIOLOGICAL THEORY (3).** LEC. 3. Pr., SOCY 4400. Reviews major types of sociological theory within the context of theoretical paradigms, and significant theoretical issues that face the discipline. Departmental approval.

**SOCY 7100 STATISTICAL ANALYSIS OF SURVEY, AGGREGATE AND LARGE DATA SOURCES (3).** LEC. 3. Pr., STAT 2010. Techniques commonly used in multivariate statistical analysis of data sources such as surveys, archival records, and other large data sets. Credit will not be given for both SOCY 7100 and STAT 7100. Departmental approval.

**SOCY 7200 SEMINAR IN SOCIAL BEHAVIOR (3).** SEM. 3. Research and theory concerning social and group influences on behavior.

**SOCY 7250 SOCIOLOGY OF VIOLENCE (3).** LEC. 3. This class presents in-depth coverage of various forms of violence from the sociological perspective.

**SOCY 7800 MENTORING IN THE CLASSROOM (1).** LEC. SU. 125st-hand experience in course building/planning, lecture and test construction, syllabus preparation, presenting and taping a lecture, performance critique, developing discussions, and other techniques. Departmental approval.

**SOCY 7850 TECHNOLOGY AND TEACHING IN SOCIOLOGY (1).** LEC. 1. SU. The use of technology as a teaching tool as it applies to Sociology. Departmental approval.

**SOCY 7930 DIRECTED STUDIES (3).** IND. 3. An independent reading course under the supervision of a department faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**SOCY 7990 RESEARCH AND THESIS (1-10).** MST. In conjunction with the preparation of a thesis. Course may be repeated with change in topic.

## SOCIAL WORK (SOWO)

**SOWO 2000 INTRODUCTION TO SOCIAL WORK (3).** LEC. 3. Introduction to Social Work practice, examining career opportunities, history of the profession, practice settings, values, ethics and types of clientele.

**SOWO 2650 HISTORY OF SOCIAL WELFARE (3).** LEC. 3. Provides detailed knowledge of the development of social welfare policies and programs in the United States. Emphasizes analysis of political, economic, and social factors involved.

**SOWO 3500 CHILD WELFARE (3).** LEC. 3. Pr., SOCY 1000 or SOWO 2000. Social work practice in settings dealing with child abuse and neglect, foster care, child care and adoption.

**SOWO 3600 AGING ISSUES AND SERVICES (3).** LEC. 3. Pr., SOCY 1000 or SOCY 1007. Introduction to social services and social work with the elderly. Various socio-cultural issues and impact on the elderly are covered.

**SOWO 3700 ADDICTIONS (3).** LEC. 3. Pr., PSYC 2010 or PSYC 2017. Concept of addictions, theories of causality, social impact and the array of treatment approaches in today's society. Experiential component included.

**SOWO 3800 HUMAN BEHAVIOR IN SOCIAL ENVIRONMENT I (3).** LEC. 3. Pr., SOWO 2000 and BIOL 1000. Lifespan approach to biopsychosocial examination of behavior and early development. Special emphasis is given to influences of racism, sexism and ethnocentrism.

**SOWO 3850 HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT II (3).** LEC. 3. Pr., SOWO 3800. Lifespan approach to biopsychosocial examination of behavior from adulthood through old age, emphasizing role of gender, sexism and sexual orientation.

**SOWO 3910 FIELD PRACTICUM SEMINAR (3).** PRA. 3. Pr., P/C, SOWO 2000. Introduces fields and settings of social work practice via placement in a selected social service agency. Includes a concurrent integrative seminar to analyze the experience.

**SOWO 4060 SOCIAL WORK PRACTICE METHODS I (3).** LEC. 3. Pr., SOWO 2000 and SOWO 3910 and SOCY 1000. Introduces the student to generalist practice methods and skills in engagement, assessment and goal setting with individual clients.

**SOWO 4070 SOCIAL WORK METHODS II (3).** LEC. 3. Pr., SOWO 4060. The practice skills and perspectives required for work with families and groups.

**SOWO 4080 SOCIAL WORK METHODS III (3).** LEC. 3. Pr., SOWO 4060. Focuses on generalist practice theory and skills as applied to communities, organizations and oppressed populations. Issues of social justice and social action emphasized.

**SOWO 4090 SOCIAL WELFARE POLICY (3).** LEC. 3. Pr., SOWO 2650. Critical analysis of policy issues and proposals in selected social welfare programs and their impact upon current social problems and social work values and ethics.

**SOWO 4920 INTERNSHIP IN SOCIAL WORK (9).** FLD. 9. SU. Pr., SOWO 4080. 480-hour field experience under joint supervision of agency and university. Application of generalist practice skills and research project required.

**SOWO 4950 SENIOR INTEGRATIVE SEMINAR (3).** SEM. 3. Pr., SOWO 4080. Taken concurrently with the senior field placement, seminar serves to guide students in integrating theory with practice through analysis of behavior and evaluation of practice skills.

**SOWO 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. 3. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**SOWO 4970 SOCIAL WORK SPECIAL TOPICS (3).** LEC. 3. Select, timely and/or controversial topics related to social work. Course content will depend upon the designated topic.

**SOWO 4997 HONORS THESIS (1-3).** IND. Pr., Honors College. Instructor approval. Course may be repeated for a maximum of 3 credit hours.



**Special Education, Rehabilitation,  
Counseling/School Psychology (SERC)**

Dr. Everett Martin, Jr. - 844-7676

COUNSELOR EDUCATION, COUNSELING PSYCHOLOGY,  
AND SCHOOL PSYCHOLOGY (COUN)

Dr. Randy Pipes 844-2883

**COUN 1000 CAREER ORIENTATION EXPLORATION (2).** LEC. 1, LAB. 2. The process of career decision-making through hands-on activities, in-class exercises, and job shadowing.

**COUN 2900 DIRECTED STUDIES (1-3).** IND. SU. Reading, research, or other work undertaken by a student focused on an area of special interest. Directed by faculty member. Course may be repeated for a maximum of 9 credit hours.

**COUN 2940 DIRECTED FIELD EXPERIENCE (1-3).** FLD. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**COUN 2970 SPECIAL TOPICS IN COLLEGE STUDENT DEVELOPMENT (1-3).** LEC. Selected topics in college student development. Fall, Spring. Course may be repeated for a maximum of 12 credit hours.

**COUN 3100 COUNSELING AND HUMAN SERVICES (3).** LEC. 3. Counseling concepts and skills appropriate in the helping professions. Not open to graduate students in counseling education.

**COUN 7100 INTRODUCTION TO SCHOOL PSYCHOLOGY (3).** LEC. 3. Orientation to profession of school psychology; history of the profession, professional roles, ethical and legal standards, and current issues.

**COUN 7200 INTRODUCTION TO MEASUREMENT AND ASSESSMENT (3).** LEC. 3. Pr., P/C, COUN 7100 or P/C, COUN 7400 or P/C, COUN 8530. Introduction to the history and theory of measurement and assessment as it applies to counselors and psychologists.

**COUN 7210 APPRAISAL IN COUNSELING AND PSYCHOLOGY (3).** LEC. 3. Pr., COUN 7200 and P/C, COUN 7350. Development, administration, scoring and interpretation of personality, interest, aptitude, achievement, attitude tests. Includes assessment interview, behavioral observation.

**COUN 7220 INTELLECTUAL ASSESSMENT OF CHILDREN AND ADOLESCENTS (3).** LEC. 3. Pr., COUN 7200. Theory and measurement of children's intelligence. Administration and interpretation of selected tests.

**COUN 7230 CAREER DEVELOPMENT AND VOCATIONAL APPRAISAL (3).** LEC. 3. Pr., P/C, FOUN 7100 or P/C, COUN 7200. Career development theories appraising vocationally related interests, aptitudes, and personal characteristics. Laboratory practice in test procedures.

**COUN 7250 ADVANCED ASSESSMENT AND DIAGNOSIS IN COUNSELING (3).** LEC. 3. Pr., P/C, COUN 7100 or P/C, COUN 7400 or P/C, COUN 8530. Assessment/diagnostic skills related to counseling: intake, assessment, diagnostic criteria, treatment planning, counseling interventions.

**COUN 7310 COUNSELING APPLICATIONS OF LIFESPAN DEVELOPMENT (3).** LEC. 3. Theories and current research in development across the lifespan with emphasis on applications to counseling.

**COUN 7320/7326 COUNSELING THEORIES (3).** LEC. 3. Pr., P/C, COUN 7100 or P/C, COUN 7400 or P/C, COUN 8530. Study of major counseling theories.

**COUN 7330 COUNSELING DIVERSE POPULATIONS (3).** LEC. 3. Special counseling and advocacy issues. Needs of diverse populations are considered. Departmental approval.

**COUN 7340 GROUP COUNSELING (3).** LEC. 3. Pr., (P/C, COUN 7320 or P/C, COUN 7326) and COUN 7350. Leading, developing, evaluating a counseling group; including group proposal, session development, group dynamics, group leadership and evaluation, treatment planning; group intervention, counseling skills.

**COUN 7350 INTRODUCTION TO COUNSELING PRACTICE (3).** LEC. 3. SU. Pr., (P/C, COUN 7320 or P/C, COUN 7326) or P/C, COUN 7400 or P/C, COUN 8530. Methods, interventions, and skills essential to counseling.

**COUN 7400 ORIENTATION TO PROFESSIONAL COUNSELING (3).** LEC. 3. Orientation to the counseling field with emphasis on philosophical, historical, psychological, and organizational foundations of professional practice.

**COUN 7410 ORIENTATION TO CLINICAL MENTAL HEALTH COUNSELING (3).** LEC. 3. Orientation to clinical mental health counseling to include roles, responsibilities, systems, theories, professional issues, and history.

**COUN 7420 ORIENTATION TO SCHOOL COUNSEL (3).** LEC. 3. Orientation to the role and activities of the K-12 school counselor. Emphasis on the components of a developmentally-oriented school counseling program.

**COUN 7430 COLLEGE STUDENT DEVELOPMENT (3).** LEC. 3. Theory and practice of counseling and student services in higher education.

**COUN 7500 CRISIS INTERVENTION IN COUNSELING (3).** LEC. 3. Development of skills and knowledge for crisis intervention and management in counseling, including prevention planning, intervention strategies and evaluation.

**COUN 7510 ADVANCED CLINICAL MENTAL HEALTH COUNSELING INTERVENTIONS (3).** LEC. 3. Pr., COUN 7320. Advanced counseling interventions, practices, techniques and methods for mental health counselors, including treatment planning, counseling processes, and evaluation.

**COUN 7810 COUNSELING CONSULTATION THEORY AND PRACTICE (3).** LEC. 3. Counseling consultation theories, models, practices, legal and ethical standards, and interdisciplinary approaches in school and clinical mental health settings.

**COUN 7820 PSYCHOEDUCATIONAL INTERVENTIONS: ACADEMIC (3).** LEC. 3. Pr., COUN 7100 and COUN 7220. Intervention approaches designed to address children's academic success across all content areas including: reading, mathematics, written language and other academic enablers.

**COUN 7900 DIRECTED STUDIES (1-3).** IND. SU. Independent learning effort directed at desired objectives. Includes evaluation by professor and student at regular intervals. Course may be repeated for a maximum of 9 credit hours.

**COUN 7910 PRACTICUM (3).** LEC. 3. SU. Supervised experiences appropriate to student's program emphasis area. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**COUN 7920 INTERNSHIP (1-9).** INT. SU. Pr., COUN 7910. Supervised on-the-job experiences. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**COUN 7940 DIRECTED FIELD EXPERIENCE (1-10).** FLD. SU. Course may be repeated for a maximum of 10 credit hours. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**COUN 7960 SPECIAL PROBLEMS (1-10).** IND. May be taken more than one semester. Course may be repeated for a maximum of 10 credit hours.

**COUN 7970 SPECIAL TOPICS (1-3).** AAB. An in-depth study of a current topic(s) impacting the professions related to departmental programs.

**COUN 7990 RESEARCH AND THESIS (1-10).** MST. Course may be repeated with a change in topic.

**COUN 8100 PERSONALITY AND INDIVIDUAL DIFFERENCES (3).** LEC. 3. Origins and structure of individual differences in personality and intelligence, and their application to counseling.

**COUN 8110 COUNSELING ASSESSMENT ACROSS THE LIFESPAN (3).** LEC. 3. Development, administration, scoring and interpretation of personality, interest, aptitude, achievement, and attitude tests across the lifespan.

**COUN 8200 INTELLECTUAL ASSESSMENT OF ADULTS (3).** LEC. 2, LAB. 3. Pr., COUN 7200. Theory and measurement of adult intelligence. Administration and interpretation of selected tests.

**COUN 8300 RESEARCH DESIGN IN COUNSELING AND EVALUATION (3).** LEC. 3. Methods for counseling research design. Studies, experimental, quasi-experimental, non-experimental, survey, between subjects and within subjects. Departmental approval.

**COUN 8400 PROFESSIONAL SEMINAR COUNSELING PSYCHOLOGY (1-3).** LEC. Scientific foundations of the counseling psychology profession and application of that foundational knowledge in counseling interventions. Course may be repeated for a maximum of 9 credit hours.

**COUN 8510 CONTEMPORARY ISSUES IN COUNSELOR EDUCATION (3).** LEC. 3. History, development, current issues. Philosophical assumptions, legal and ethical considerations, new research service initiatives. Departmental approval.

**COUN 8520 CONTEMPORARY ISSUES IN SCHOOL PSYCHOLOGY (1-3).** LEC. History, development, and current issues. Legal and ethical considerations, research and service initiatives, and new client populations. Course may be repeated for a maximum of 3 credit hours.

**COUN 8530 CONTEMPORARY ISSUES IN COUNSELING PSYCHOLOGY (3).** LEC. 3. History, development, and current professional issues. Philosophical and cultural assumptions, legal and ethical considerations, and current research topics.

**COUN 8540 COUN SUPERVISION-THEORY & PRAC (3).** LEC. 3. Advanced theories, skills, models and methods used in counseling supervision including counselor development, supervisory processes and evaluation.

**COUN 8610 ADVANCED THEORIES: EXISTENTIAL/HUMANISTIC (3).** LEC. 3. Theory and practice of humanistic/existential approaches to individual and group therapy.

**COUN 8620 ADVANCED THEORIES: COGNITIVE/BEHAVIORAL THEORIES (3).** LEC. 3. Current cognitive/behavioral models for understanding human problems and behavior change.

**COUN 8630 ADVANCED THEORIES: PSYCHODYNAMIC THEORIES (3).** LEC. 3. The origins, current status, and emerging applications of psychodynamic approaches to counseling. Departmental approval.

**COUN 8910 PRACTICUM (3).** LEC. 3. SU. Advanced supervised experiences appropriate to student's program emphasis. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

## Special Education, Rehabilitation, Counseling/School Psychology (SERC)

**COUN 8920 INTERNSHIP (1-9).** INT. SU. Advanced supervised on-the-job experiences appropriate to doctoral-level study. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

**COUN 8925 INTERNSHIP IN COUNSELING PSYCHOLOGY (0).** INT. SU. Supervised, full-time experience in Counseling Psychology at the doctoral level. Departmental approval.

**COUN 8930 INTERNSHIP IN COUNSELING PSYCHOLOGY (0).** INT. SU. Supervised, full-time experience in Counseling Psychology at the doctoral level. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**COUN 8970 SPECIAL TOPICS (1-3).** SEM. An in-depth study of the current educational, sociological, psychological, economic, health, legal, technological, and professional issues impacting the professions related to departmental programs. Course may be repeated for a maximum of 9 credit hours.

**COUN 8980 FIELD PROJECT (1-10).** FLD. SU. Required for completion of the Education Specialist degree. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**COUN 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with a change in topic.

### REHABILITATION AND SPECIAL EDUCATION (RSED)

Dr. Everett Martin, Jr. 844-7676

**RSED 3000 DIVERSITY AND EXCEPTIONALITY OF LEARNERS (3).** LEC. 3. Pr., 2 GPA. Exploration of philosophical, social, cultural, and legal factors, and individual characteristics shaping education for individuals with disabilities; and roles/responsibilities of educators in inclusive settings.

**RSED 3010 INTRODUCTION TO SPECIAL EDUCATION (3).** LEC. 3. Orientation to special education profession including history, philosophy, federal legislation, contemporary issues and national organizations.

**RSED 3020 INTRODUCTION TO REHABILITATION (3).** LEC. 3. Orientation to the profession including history, philosophy, federal legislation, contemporary issues and national organizations.

**RSED 3030 INTRODUCTION TO SPEECH PATHOLOGY IN SPECIAL EDUCATION (3).** LEC. 3. Emphasis on the role and function of speech pathologist with respect to best practices in the school setting.

**RSED 3100/3103 ASSESSMENT IN EARLY CHILDHOOD SPECIAL EDUCATION (3).** LEC. 3. Pr., RSED 3010. Concepts and techniques for developmental screening, evaluation and assessment for young children (ages 3-8) with developmental delays. Departmental approval.

**RSED 3110/3113 ASSESSMENT IN SPECIAL EDUCATION (3).** LEC. 3. Selection, administration, scoring and interpretation of standardized aptitude and educational tests used in the field of education.

**RSED 3120 ASSESSMENT IN REHABILITATION (3).** LEC. 3. Selection, administration, scoring and interpretation of work sample systems and standardized tests of intelligence, aptitude, achievement, interest, and dexterity used in the field of rehabilitation.

**RSED 4010 BEHAVIOR MANAGEMENT IN SPECIAL EDUCATION (3).** LEC. 3. Skills to manage the behavior of special education students including behavioral assessment, selection criteria for appropriate intervention strategies and evaluation of intervention effectiveness.

**RSED 4100 PROFESSIONAL COMMUNICATION IN REHABILITATION (3).** LEC. 3. Theoretical and practical aspects of written and oral communication with rehabilitation and other professionals, clients, and family members.

**RSED 4110 SUPPORTED EMPLOYMENT IN REHABILITATION (3).** LEC. 3. Historical, legislative, theoretical, research and practical foundation of supported employment.

**RSED 4120 INDEPENDENT LIVING SERVICES IN REHABILITATION (3).** LEC. 3. The history, legislation and philosophy of the independent living movement and its impact on the quality of life for people with severe disabilities.

**RSED 4130 ETHICAL PRACTICES IN REHABILITATION (3).** LEC. 3. Ethical dilemmas that are routinely faced by practitioners in human service occupations. Departmental approval.

**RSED 4900/4903 DIRECTED STUDIES (1-3).** IND. SU. Content focus of study area will be translated into specific objectives with student learning guided by the instructor. Emphasis on exceptional learners. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**RSED 4910/4913 PRACTICUM (1-6).** PRA. SU. Practice in educational or community service setting aligned with degree program option. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**RSED 4920 INTERNSHIP (9).** AAB/INT. SU. Comprehensive supervised on-the-job experience in a school, college or community-based setting serving individuals with disabilities. Departmental approval or admission to internship.

**RSED 4970/4973 SPECIAL TOPICS (1-3).** IND. Seminar in which upper-level students and professors engage in critical thinking regarding selected concepts,

theories, research, and issues germane to the field of disabilities. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**RSED 5000 ADVANCED SURVEY OF EXCEPTIONALITY (3).** LEC. 3. This course is an advanced study of exceptionalities with emphasis upon the educational implications of disability and current issues in special education and rehabilitation. Spring, Summer.

**RSED 5010 MEDICAL ASPECTS OF DISABILITY (3).** LEC. 3. Medical terminology, basic body systems, common malfunctions, therapeutic services, restorative techniques, and disability evaluation for different disability groups and the vocational implications of each.

**RSED 5020 PSYCHOSOCIAL ASPECTS OF DISABILITY (3).** LEC. 3. Theoretical constructs and practical issues for various types of physical, mental, psychiatric, and social disabilities with implications for personal, vocational, social and community adjustment.

**RSED 5030 MENTAL RETARDATION (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with mental retardation. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 5040 LEARNING DISABILITIES (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with learning disabilities. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 5050 BEHAVIOR DISORDER (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with behavior disorders. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 5060 SEVERE DISABILITIES (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with severe levels of disability. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 5070 MILD DISABILITIES (3).** LEC. 3. The purpose of this course is to present the major concepts and issues related to mild disabilities. A variety of topics, ranging from the historical developments in the field to proposed teaching procedures for students, will be discussed. In-depth analysis of selected topics will be accomplished with student presentations and assignments. Spring, Summer.

**RSED 5100 INFANTS AND TODDLERS WITH DISABILITIES (3).** LEC. 3. Pr., RSED 3010. Historical, legislative, and philosophical basis of early intervention for young children, birth through age two, with special needs and their families.

**RSED 5110 CURRICULUM IN EARLY CHILDHOOD SPECIAL EDUCATION (3).** LEC. 3. Pr., P/C, RSED 3010. Admission to Teacher Education. Procedures for developing, implementing, and monitoring individualized educational programs in natural settings. Admission to Teacher Education.

**RSED 5120 CURRICULUM IN ELEMENTARY SPECIAL EDUCATION (3).** LEC. 3. Pr., RSED 3010. Admission to Teacher Education. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum activities for the collaborative instruction of elementary children with disabilities. Admission to Teacher Education.

**RSED 5130 CURRICULUM IN SECONDARY SPECIAL EDUCATION (3).** LEC. 3. Pr., P/C, RSED 3010. Admission to Teacher Education. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum materials for the collaborative instruction of secondary students with disabilities. Admission to Teacher Education.

**RSED 5140 CURRICULUM IN SEVERE DISABILITIES (3).** LEC. 3. Pr., P/C, RSED 3010. Understanding a functional/developmental approach to selecting, developing, implementing, and evaluating appropriate curriculum activities for instructing students with severe disabilities. Credit will not be given for both RSED 5140 and RSED 6140/6146.

**RSED 5150 TEACHING METHODS IN SPECIAL EDUCATION (3).** LEC. 3. Pr., Admission to Teacher Education. Instructional strategies in reading and math for students who have learning and behavior problems. Admission to Teacher Education.

**RSED 5160 COLLABORATION IN SPECIAL EDUCATION (3).** LEC. 3. Pr., Admission to Teacher Education. Collaborative teaching, consultation, and teaming as a critical best practice in serving students with disabilities. Admission to Teacher Education.

**RSED 5170 TRANSITION FROM SCHOOL TO COMMUNITY (3).** LEC. 3. History, philosophy, models, and definitions of transition with emphasis on practices, programs, and services.

**RSED 5180 INSTRUCTIONAL CLASSROOM MANAGEMENT (3).** LEC. 3. This course is designed to provide students with the theoretical basis and the practical application of classroom organizational and instructional classroom management for students with learning and behavioral problems. The focus of this class will be to discuss proactive approaches to instructional classroom management.

**RSED 5200/5203 VOCATIONAL EVALUATION IN REHABILITATION (3).** LEC. 3. Vocational evaluation and work adjustment techniques and strategies used within

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the rehabilitation process. Credit will not be given for both RSED 5200 and RSED 5203.

**RSED 5210 OCCUPATIONAL INFORMATION (3).** LEC. 3. Identification, location, and use of data resources for job accommodation and modification strategies, labor market surveys, and job placement of persons with disabilities.

**RSED 5220 PLACEMENT SERVICES IN REHABILITATION (3).** LEC. 3. Theories, strategies, and techniques for job development, accommodation, modification, and placement of people with disabilities with application skills needed to facilitate employment.

**RSED 5230 REHABILITATION ASSISTIVE TECHNOLOGY (3).** LEC. 3. Basic computer literacy; use of commercially available software, and assistive technology for use by persons with disabilities.

**RSED 5340 FOUNDATIONS OF SUBSTANCE ABUSE COUNSELING (3).** LEC. 3. Provides knowledge of the nature of substance abuse, drug classification, models of addiction, assessment and diagnosis, treatment, and related issues. Credit will not be given for both RSED 5340 and RSED 6340/6346.

**RSED 6000/6006 ADVANCED SURVEY OF EXCEPTIONALITY (3).** LEC. 3. This course is an advanced study of exceptionality with emphasis upon the educational implications of disability and current issues in special education and rehabilitation.

**RSED 6010/6016 MEDICAL ASPECTS OF DISABILITY (3).** LEC. 3. Medical terminology, basic body systems, common malfunctions, therapeutic services, restorative techniques, and disability evaluation for different disability groups and the vocational implications of each.

**RSED 6020/6026 PSYCHOSOCIAL ASPECTS OF DISABILITY (3).** LEC. 3. Theoretical constructs and practical issues for various types of physical, mental, psychiatric, and social disabilities with implications for personal, vocational, social and community adjustment.

**RSED 6030/6036 MENTAL RETARDATION (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with mental retardation. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 6040/6046 LEARNING DISABILITIES (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with learning disabilities. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 6050/6056 BEHAVIOR DISORDERS (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with behavior disorders. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 6060/6066 SEVERE DISABILITIES (3).** LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with severe levels of disability. Educational and rehabilitative approaches and contemporary issues are emphasized.

**RSED 6070 MILD DISABILITIES (3).** LEC. 3. The purpose of this course is to present the major concepts and issues related to mild disabilities. A variety of topics, ranging from the historical developments in the field to proposed teaching procedures for students, will be discussed. In-depth analysis of selected topics will be accomplished with student presentations and assignments.

**RSED 6100/6106 INFANTS AND TODDLERS WITH DISABILITIES (3).** LEC. 3. Historical, legislative, and philosophical basis of early intervention for young children, birth through age two, with special needs and their families.

**RSED 6110/6116 CURRICULUM IN EARLY CHILDHOOD SPECIAL EDUCATION (3).** LEC. 3. Procedures for developing, implementing, and monitoring individualized educational programs in natural settings.

**RSED 6120/6126 CURRICULUM IN ELEMENTARY SPECIAL EDUCATION (3).** LEC. 3. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum for the collaborative instruction of elementary children with disabilities.

**RSED 6130/6136 CURRICULUM IN SECONDARY SPECIAL EDUCATION (3).** LEC. 3. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum materials for the collaborative instruction of secondary students with disabilities.

**RSED 6146/6140 CURRICULUM IN SEVERE DISABILITIES (3).** LEC. 3. Understanding a functional/developmental approach to selecting, developing, implementing, and evaluating appropriate curriculum activities for instructing students with severe disabilities. Credit will not be given for both RSED 5140 and RSED 6140/6146.

**RSED 6150/6156 TEACHING METHODS IN SPECIAL EDUCATION (3).** LEC. 3. Instructional strategies in reading and math for students who have learning and behavior problems.

**RSED 6160/6166 COLLABORATION IN SPECIAL EDUCATION (3).** LEC. 3. Collaborative teaching, consultation, and teaming as a critical best practice in serving students with disabilities.

**RSED 6170/6176 TRANSITION FROM SCHOOL TO COMMUNITY (3).** LEC. 3. History, philosophy, models, and definitions of transition with emphasis on best practices, programs, and services.

**RSED 6180/6186 INSTRUCTIONAL CLASSROOM MANAGEMENT (3).** LEC. 3. This course is designed to provide students with the theoretical basis and the practical application of classroom organization and instructional classroom management for students with learning and behavioral problems. The focus of this class will be to discuss proactive approaches to instructional classroom management.

**RSED 6200/6206 VOCATIONAL EVALUATION IN REHABILITATION (3).** LEC. 3. Vocational evaluation and work adjustment techniques and strategies used within the rehabilitation process. Credit will not be given for both RSED 6200 and RSED 6206.

**RSED 6210/6216 OCCUPATIONAL INFORMATION (3).** LEC. 3. Identification, location, and use of data resources for job accommodation and modification strategies, labor market surveys, and job placement of persons with disabilities.

**RSED 6220/6226 VOCATIONAL EVALUATION IN REHABILITATION (3).** LEC. 3. Theories, strategies, and techniques for job development, accommodation, modification, and placement of people with disabilities with application skills needed to facilitate employment.

**RSED 6230/6236 REHABILITATION ASSISTIVE TECHNOLOGY (3).** LEC. 3. Basic computer literacy; use of commercially available software, and assistive technology for use by persons with disabilities.

**RSED 6340/6346 FOUNDATIONS OF SUBSTANCE ABUSE COUNSELING (3).** LEC. 3. Provides knowledge of the nature of substance abuse, drug classification, models of addiction, assessment and diagnosis, treatment, and related issues. Credit will not be given for both RSED 5340 and RSED 6340/6346.

**RSED 7010/7016 REHABILITATION PROFESSIONS, PROGRAMS AND SERVICES (3).** LEC. 3. Comprehensive examination of the evolution, nature and contemporary status of state-federal vocational rehabilitation system including roles of the professionals within this system.

**RSED 7100/7106 ADVANCED ASSESSMENT IN EARLY INTERVENTION (3).** LEC. 3. Standardized, norm-referenced procedures, curriculum, criterion assessments, play techniques; and naturalistic strategies for special-needs children, birth to age three, and their families. departmental approval.

**RSED 7110/7116 ADVANCED ASSESSMENT IN EARLY CHILDHOOD SPECIAL EDUCATION (3).** LEC. 3. Advanced concepts and techniques for developmental screening and assessment for young children (ages 3-8) with developmental delays. Departmental approval.

**RSED 7120/7126 ADVANCED ASSESSMENT IN SPECIAL EDUCATION (3).** LEC. 3. Advanced study of educational tests and procedures for diagnosing special training problems. Departmental approval.

**RSED 7130/7136 ADVANCED ASSESSMENT I IN REHABILITATION (3).** LEC. 3. Principles, process and techniques used to diagnose vocationally-related assets and liabilities of the individual with disabilities.

**RSED 7140 ADVANCED ASSESSMENT II IN REHABILITATION (3).** LEC. 3. Pr., RSED 7130 or RSED 7136. Interpretation of vocational evaluation data for prescriptive purposes and communication of that data through report writing and oral communication.

**RSED 7150/7156 MULTICULTURAL ASPECTS OF DISABILITIES (3).** LEC. 3. Study of three main areas relevant to multicultural competencies and standards for rehabilitation professionals: (a) acquisition of communication skills; (b) attitudes towards ethnic minorities, and (c) knowledge about minority populations.

**RSED 7200/7206 ADVANCED INTERVENTION WITH INFANTS AND TODDLERS WITH DISABILITIES (3).** LEC. 3. Pr., RSED 7100 or RSED 7106. Administration and on-going management of early intervention programs and service coordination of individualized family service plans and family support. Departmental approval.

**RSED 7210/7216 ADVANCED INTERVENTION IN EARLY CHILDHOOD SPECIAL EDUCATION (3).** LEC. 3. Pr., RSED 7110 or RSED 7116. Curriculum methods, intervention plans, intervention methods, physical and medical management, environmental and behavioral management, and evaluation of child and family outcomes. Departmental approval.

**RSED 7220/7226 ADVANCED TEACHING METHODS IN SPECIAL EDUCATION (3).** LEC. 3. Applied study and practice in analyzing, designing, constructing and evaluating teaching sequences and programs with empirical emphasis for design of instructional principles.

**RSED 7230/7236 ADVANCED BEHAVIOR MANAGEMENT IN SPECIAL EDUCATION (3).** LEC. 3. Provides skills necessary to direct academic and social performance and appropriately manage the behavior of students with special needs. Departmental approval.

**RSED 7300/7306 REHABILITATION COUNSELING TECHNIQUES (3).** LEC. 3. Facilitative communication skills and systematic problem solving skills for effective clinical practice.

**RSED 7310/7316 PROPRIETARY REHABILITATION (3).** LEC. 3. Pr., RSED 6210 and (RSED 7130 or RSED 7136). Vocational rehabilitation in private sector including

## Statistics (STAT)

case management and expert witness for workers compensation, personal injury litigation, and social security.

**RSED 7320/7326 INDIVIDUAL COUNSELING APPROACHES IN REHABILITATION COUNSELING (3).** LEC. 3. Survey of theoretical approaches involved in individual counseling with an emphasis on persons with disabilities using an eclectic point of view and psycho-educational approach.

**RSED 7330/7336 GROUP COUNSELING IN REHABILITATION SETTINGS (3).** LEC. 3. Pr., RSED 7320 or RSED 7326. Nature and function of group dynamics in rehabilitation settings including theories of groups, group structure, and psycho-educational strategies used with rehabilitation clients.

**RSED 7400/7406 CURRICULUM AND TEACHING IN SPECIALIZATION (3).** LEC. 3. Curriculum design, content, and materials selection related to teaching practices in areas of specialization (mental retardation, learning disabilities, behavioral disorders, etc.). Course may be repeated for a maximum of 6 credit hours.

**RSED 7410/7416 PROGRAM IMPLEMENTATION IN SPECIALIZATION (3).** LEC. 3. Program organization and development of materials for curriculum improvement and teaching practices in specialization area (mental retardation, learning disabilities, etc.) Course may be repeated for a maximum of 6 credit hours.

**RSED 7420/7426 RESEARCH IN SPECIALIZATION (3).** LEC. 3. Examination and interpretation of applied research in specialization area (mental retardation, learning disabilities behavioral disorders, etc.).

**RSED 7430/7436 RESEARCH INTO PRACTICE (3).** LEC. 3. Applied opportunities for translating instructional and behavioral research into practice. Departmental approval.

**RSED 7440/7446 SEMINAR IN SPECIALIZATION (3).** SEM. 3. Advanced students and professor(s) engage in critical thinking regarding selected concepts, theories, research and issues germane to the field of disabilities. Departmental approval. Course may be repeated with change in topics.

**RSED 7460/7466 POSITIVE BEHAVIOR SUPPORTS (3).** LEC. 3. Evaluating and implementing Positive Behavior Interventions and Supports (PBIS) for students grades PK through 12 in traditional and alternative educational settings. Credit will not be given for both RSED 7460 and RSED 7466.

**RSED 7900/7906 DIRECTED STUDIES (1-3).** IND. SU. Content focus of study area will be translated into specific objectives with advanced student learning guided by the instructor. The department's policy is to restrict independent study only for content not covered in RSED's course listing. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**RSED 7910/7916 PRACTICUM (1-6).** PRA. SU. Practice in educational or community service setting aligned with degree program option. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**RSED 7920/7926 INTERNSHIP (9).** INT. 9. SU. Comprehensive supervised on-the-job experience in a school, college or community-based setting serving individuals with disabilities. Departmental approval.

**RSED 7980/7986 NON-THESIS PROJECT (1-3).** IND. SU. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**RSED 7990 RESEARCH AND THESIS (1-10).** MST. The content focus of the study area will be translated into specific objectives with the student learning toward that end, guided by the instructor. In addition to regular meetings with the instructor, the student will be evaluated and graded according to learning performance. The department's policy is to restrict independent study only for content not covered in RSED's course listing. Departmental approval.

**RSED 8010 DISABILITIES AND RESEARCH METHODS (3).** LEC. 3. History, principles, and methodology of single subject research with emphasis on the various types of research designs applied in rehabilitation and special education. Departmental approval.

**RSED 8020 DISABILITIES AND APPLIED RESEARCH IN MEASUREMENT (3).** LEC. 3. Classical measurement theory, individual differences determination, constructs related to diagnostic labels, measurement bias and fairness, nature-nurture controversy, and clinical versus statistical inference. Departmental approval.

**RSED 8030 DISABILITIES AND PROFESSIONAL ISSUES (3).** LEC. 3. Critical and contemporary issues regarding disability and its relationship to the leadership roles of professionals in special education and rehabilitation.

**RSED 8040 DISABILITIES AND ASSISTIVE TECHNOLOGY (3).** LEC. 3. Adaptive technology for use by persons with disabilities and proficiency in the use of computers and the World Wide Web as they relate to disabilities. Departmental approval.

**RSED 8056/8050 DISABILITIES AND THE LAW (3).** LEC. 3. Advanced knowledge of legislative and litigative basis for special education and rehabilitation programs and services. Departmental approval.

**RSED 8060 DISABILITIES AND LIFE SPAN TRANSITIONS (3).** LEC. 3. Advanced study of historical, legal, legislative, philosophical, and service delivery issues and trends with emphasis on research studies and programs. Departmental approval.

**RSED 8070 PROFESSIONAL SEMINAR (3).** LEC. 3. SU. A series of doctoral seminars devoted to professional technical writing, grant writing, management, and research. Departmental approval. Course may be repeated with change in topics.

**RSED 8110/8116 ORGANIZATIONAL LEADERSHIP AND CHANGE REHABILITATION (3).** LEC. 3. Organizational leadership for the public and private non-profit sectors of rehabilitation emphasizing individual qualities required for successful leadership. Departmental approval.

**RSED 8120/8126 MANAGEMENT OF PUBLIC SECTOR ORGANIZATIONS (3).** LEC. 3. Objective and analytical perspective of public sector management and organizational leadership skills as it relates to rehabilitation settings. Departmental approval.

**RSED 8230 EXAMINING DISABILITY DATABASES (3).** LEC. 3. Conducting descriptive and correlational research by using existing publicly available databases in the field of disabilities.

**RSED 8900 DIRECTED STUDIES (1-3).** IND. SU. Content focus of study area will be translated into specific objectives with student learning guided by the instructor. Departmental approval. Course may be repeated with change in topics.

**RSED 8950/8956 SEMINAR (1-3).** SEM. Departmental approval. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations. May count either RSED 8950 or RSED 8956. Course may be repeated for a maximum of 9 credit hours.

**RSED 8986/8980 NON-THESIS PROJECT (1-10).** IND. SU. Course may be repeated with change in topic. ADDITIONALPREREQUISITES: Departmental approval. Course may be repeated with change in topics.

**RSED 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topic. Departmental approval. Course may be repeated with change in topics.

## Statistics (STAT)

Dr. Michel Smith - 844-4290

**STAT 2010 STATISTICS FOR SOCIAL AND BEHAVIOR SCIENCES (4).** LEC. 3, LAB. 2. Pr., MATH 1100 or MATH 1120. Introduction to basic principles of statistical reasoning and statistical procedures used in data analysis in the social and behavioral sciences.

**STAT 2017 HONORS STATISTICS FOR SOCIAL AND BEHAVIORAL SCIENCES (4).** LEC. 3, LAB. 2. Pr., Honors College. Introduction to statistical data analysis, statistical packages, and APA-style statistical reporting use in research in Psychology and other social and behavioral sciences.

**STAT 2510/2513/2514 STATISTICS FOR BIOLOGICAL AND HEALTH SCIENCES (3).** LEC. 3. Pr., MATH 1100 or MATH 1120 or MATH 1130 or MATH 1150 or MATH 1610 or MATH 1617. Introduction to statistical concepts, reasoning and methods used in data analysis, descriptive statistics, sampling distributions, statistical inference, confidence intervals, regression or correlation, contingency tables. Students who have previous credit in any higher-numbered math course may not receive credit.

**STAT 2600 BUSINESS ANALYTICS I (3).** LEC. 3. Pr., MATH 1680 or P/C, COMP 1000. Introduction to analytics in business including use of data to make business decisions, basic predictive business modeling, and communication of analytical results. Minimum 2.0 overall cumulative undergraduate GPA.

**STAT 2610 STATISTICS FOR BUSINESS AND ECONOMICS (3).** LEC. 3. Pr., MATH 1690. Introduction to statistical analysis, theory, and interpretation used in business and economics.

**STAT 2710 STATISTICAL COMPUTING (1).** LEC. 1. Pr., P/C, STAT 2010 and (P/C, STAT 2510 or STAT 2513) and P/C, STAT 2610 and P/C, STAT 3010. Introduction to basic statistical computing programs and methods.

**STAT 3010 STATISTICS FOR ENGINEERS AND SCIENTISTS (3).** LEC. 3. Pr., MATH 1610 or MATH 1617 or MATH 1710. Introduction to statistical methods and analysis used in engineering and science.

**STAT 3600 PROBABILITY AND STATISTICS I (3).** LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Calculus-based introduction to probability and statistics with an emphasis on practical problem-solving.

**STAT 3610 PROBABILITY AND STATISTICS II (3).** LEC. 3. Pr., STAT 3600. Continuation of STAT 3600. Departmental approval.

**STAT 3611 PROBABILITY AND STATISTICS II LABORATORY (1).** LAB. 2. The application of statistical techniques from STAT 3610. Departmental approval.

**STAT 4020 INTERMEDIATE STATISTICAL METHOD (3).** LEC. 3. Pr., STAT 3010. Two-way ANOVA; experimental design; contingency tables; multiple regression techniques; modeling building; introductory non-parametric methods; goodness-of-fit tests. Departmental approval.

**STAT 4610 APPLIED REGRESSION ANALYSIS (3).** LEC. 3. Pr., STAT 3610 or STAT 3010. Least squares estimation, hypothesis testing and confidence interval estimation in regression; simple, polynomial and multiple linear regression; residual and lack-of-fit analysis; use of dummy variables; multiple and partial correlation analysis; model building algorithms and model comparisons; transformations.

## Statistics (STAT)

- STAT 4620 APPLIED NONPARAMETRIC STATISTICS (3).** LEC. 3. Review of elementary probability; goodness-of-fit tests; for singles and several location parameters; tests for scale parameters; distribution tests; measures of association; bootstrap and permutation tests.
- STAT 4630 APPLIED TIME-SERIES ANALYSIS (3).** LEC. 3. ARIMA models: the auto regressive process, the moving average process, and the ARMA process; forecasting, errors and confidence intervals, updating forecast models; estimation; model building and assessment; applications in econometrics.
- STAT 4970 SPECIAL TOPICS IN STATISTICS (1-3).** LEC. Special topics designed to meet the needs and interest of students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.
- STAT 5110 SAS PROGRAMMING AND APPLICATIONS (3).** LEC. 3. Pr., STAT 3010 or STAT 3610. Emphasis is placed on using SAS routines to obtain statistical analyses for common statistical methods and interpreting output.
- STAT 5330 DATA BASED DECISION MAKING USING SIX SIGMA (3).** LEC. 3. Pr., STAT 3610 and INSY 4330. Covers statistical tools needed for implementation of "Six Sigma", "Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both STAT 5330 and STAT 6330/6336. Departmental approval.
- STAT 5630 SAMPLE SURVEY, DESIGN AND ANALYSIS (3).** LEC. 3. Pr., STAT 3600. Estimation of means, proportions, finite populations, stratified sampling, systematic sampling rations estimations. Departmental approval.
- STAT 5670 PROBABILITY AND STOCHASTIC PROCESSES I (3).** LEC. 3. Pr., MATH 2630. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both STAT 5670 and MATH 5670.
- STAT 5680 PROBABILITY AND STOCHASTIC PROCESSES II (3).** LEC. 3. Pr., STAT 5670 or MATH 5670. Multivariate distributions, Central Limit Theorem, Laplace transforms, convolutions, simulations, renewal processes Continuous-time Markov chains, Markov renewal and semi-regenerative processes, brownian motion and diffusion. Credit will not be given for both STAT 5680 and MATH 5680.
- STAT 5690 CHAOTIC AND RANDOM PHENOMENA (3).** LEC. 3. Pr., MATH 1620. Statistics and modeling of random phenomena in connection to computational complexity, data analysis, processes of chance and chaotic nonlinear systems. Credit will not be given for both STAT 5690 and MATH 5690.
- STAT 6110 SAS PROGRAMMING AND APPLICATIONS (3).** LEC. 3. Pr., STAT 3010 or STAT 3610 or P/C, STAT 7000. Emphasis is placed on using SAS routines to obtain statistical analyses for common statistical methods and interpreting output.
- STAT 6330/6336 DATA BASED DECISION MAKING USING SIX SIGMA (3).** LEC. 3. Pr., STAT 3610 and INSY 4330. Covers statistical tools needed for implementation of "Six Sigma", "Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both STAT 5330 and STAT 6330/6336. Departmental approval.
- STAT 6630 SAMPLE SURVEY, DESIGN AND ANALYSIS (3).** LEC. 3. Pr., STAT 3600. Estimation of means, proportions, finite populations, stratified sampling systematic sampling rations estimations. Departmental approval.
- STAT 6670/6676 PROBABILITY AND STOCHASTIC PROCESSES I (3).** LEC. 3. Pr., MATH 2630. 125dom variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both STAT and MATH 6670.
- STAT 6680 PROBABILITY AND STOCHASTIC PROCESSES II (3).** LEC. 3. Pr., MATH 6670 or STAT 6670. Multivariate distributions, Central Limit Theorem, Laplace transforms, convolutions, simulations, renewal processes Continuous-time Markov chains, Markov renewal and semi-regenerative processes, brownian motion and diffusion. Credit will not be given for both STAT 6680 and MATH 6680.
- STAT 6690 CHAOTIC AND RANDOM PHENOMENA (3).** LEC. 3. Pr., MATH 1620. Statistics and modeling of random phenomena in connection to computational complexity, data analysis, processes of chance and chaotic nonlinear systems. Credit will not be given for both STAT 6690 and MATH 6690.
- STAT 7000 EXPERIMENTAL STATISTICS I (4).** LEC. 4. Paired and independent sample t-tests, ANOVA, F-tests, contrasts, tests for trends, multiple comparisons, CR and RCB designs of experiments, regression. Departmental approval.
- STAT 7010 EXPERIMENTAL STATISTICS II (3).** LEC. 3. Pr., STAT 7000. Advanced topics in experimental design: writing linear models for experiment-expected mean squares, variance components, nested designs, Latin Square Designs, split plot designs, ANOVA and multiple regression.
- STAT 7020 REGRESSION ANALYSIS (3).** LEC. 3. Pr., STAT 7000. Introduction to the method of least squares as it applies to regression and analysis of variance. Simple linear regression, multiple regression, model selection and diagnostics. Departmental approval.
- STAT 7030 CATEGORICAL DATA ANALYSIS (3).** LEC. 3. Pr., (STAT 3600 or MATH 3600) or STAT 7000. Methods for analysis or categorical response data. Topics include Chi-square tests, Likelihood Ration tests, Logistic Regression, and Loglinear Modeling. Departmental approval.
- STAT 7040 BIostatISTICS (3).** LEC. 3. Pr., STAT 7000. Epidemiology, biometry, methods of survival analysis. Departmental approval.
- STAT 7100 STATISTICAL ANALYSIS OF SURVEY, AGGREGATE AND LARGE DATA SOURCES (3).** LEC. 3. Pr., STAT 2010. Techniques commonly used in multivariate statistical analysis of data sources such as surveys, archival records, and other large data sets. Credit will not be given for STAT 7100 and SOCY 7100. Departmental approval.
- STAT 7270 EXPERIMENTAL DESIGN IN PSYCHOLOGY (4).** LEC. 4. Pr., STAT 7000 and STAT 7020. Introduction to the analysis of data collected under differential experimental designs. Credit will not be given for both STAT 7270 and PSYC 7270.
- STAT 7300/7306 ADVANCED ENGINEERING STATISTICS I (3).** LEC. 3. Pr., STAT 3610. Advanced concepts of experimental design including blocking, regression approach to analysis of variance, fractional factorials in base-2, and base-3 designs. Emphasis throughout is on improving industrial products and processes. Credit will not be given for both STAT 7300 and INSY 7300. Departmental approval.
- STAT 7310/7316 ADVANCED ENGINEERING STATISTICS II (3).** LEC. 3. Pr., STAT 7300 or INSY 7300. Fractional factorial experimentation applied for the purpose of process and quality improvement and optimization, introduction to analysis of covariance, multiple regression analysis, and response surface analysis. Credit will not be given for both STAT 7310 and INSY 7310.
- STAT 7600 STATISTICAL THEORY AND METHODS I (3).** LEC. 3. Pr., STAT 3600. Random variables, probability distributions, parametric models, likelihood theory, testing. Departmental approval.
- STAT 7610 STATISTICAL THEORY AND METHODS II (3).** LEC. 3. Pr., STAT 7600. Likelihood ratio, regression, ANOVA, categorical data, non-parametric methods, decision theory.
- STAT 7620 NONPARAMETRIC STATISTICS (3).** LEC. 3. Pr., STAT 3600. Distribution-free methods of statistical inference. Sign, Wilcoxon signed-rank, and Mann-Whitney tests for location, the Chi-Square and Kolmogorov-Smirnov tests for goodness-of-fit. Measures of association. Departmental approval.
- STAT 7700 GENERALIZED LINEAR MODELS (3).** LEC. 3. Pr., STAT 7600. Exponential families and links functions, model fitting, likelihood methods, residual diagnostics, count data, estimating equations. Departmental approval.
- STAT 7780 SURVIVAL ANALYSIS (3).** LEC. 3. Pr., STAT 7000. Kaplan-Meier estimator, log-rank tests, Cox proportional hazard model, fully parametric models. Departmental approval.
- STAT 7800 LINEAR MODELS (3).** LEC. 3. Pr., STAT 7610 and MATH 2660, STAT 7610 and MATH 2660. Departmental approval. A rigorous development of some of the important topics of applied statistics: the multivariate normal distribution analysis of variance, regression, aspects of experimental design.
- STAT 7810/7816 MODERN STOCHASTIC PROCESSES I (3).** LEC. 3. Pr., (MATH 6670 or STAT 6670) and MATH 6210. Classical and Modern Topics in stochastic processes (Markov chains, Poisson process, Brownian motion). Applications and stochastic models (queues, stationary processes, population dynamics, finances). Credit will not be given for both STAT 7810 and MATH 7810.
- STAT 7820/7826 APPLIED STOCHASTIC PROCESSES I (3).** LEC. 3. Pr., MATH 7810 or STAT 7810. Classical and modern topics in stochastic processes (Markov processes, Random Walks, Martingales, Brownian motion.) Introduction to stochastic integrals and differential equations. Applications (queues, population dynamics, chaos finances). Credit will not be given for both STAT 7820 and MATH 7820.
- STAT 7830 APPLIED STOCHASTIC PROCESSES II (3).** LEC. 3. Pr., STAT 7810.
- STAT 7840 APPLIED MULTIVARIATE STATISTICAL ANALYSIS (3).** LEC. 3. Pr., STAT 7000. Multivariate normal distribution, Hotelling's T2, MANOVA, discriminate analysis, principal components.
- STAT 7850 THEORY OF STATISTICAL INFERENCE (3).** LEC. 3. Pr., STAT 7610. Bayesian methods, Markov Chain Monte Carlo methods, resampling techniques. Departmental approval.
- STAT 7860 APPLIED TIME SERIES ANALYSIS (3).** LEC. 3. Pr., STAT 3610. Autoregressive and moving average models, differencing, estimation and forecasting, spectral theory. Departmental approval.
- STAT 7960 SPECIAL PROBLEMS IN STATISTICS (1-10).** RES. Credit will not be given for both MATH 7960 and STAT 7960. Course may be repeated for a maximum of 10 credit hours.
- STAT 7970 SPECIAL TOPICS (1-3).** LEC. Special topics designed to meet the needs and interests of students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.
- STAT 7980 SPECIAL PROJECT (3).** LEC. 3. SU. Non-thesis project in statistics for master's degree in statistics (non-thesis option). Departmental approval.
- STAT 7990 RESEARCH AND THESIS (1-10).** DSR. Research for Master's thesis in Statistics. Course may be repeated with change in topic.
- STAT 8400 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT I (3).** LEC. 3. Pr., STAT 7000. Study of the application of linear regression analysis to business research. First advanced course in applied linear statistics models. STAT 7000 or approved equivalent.
- STAT 8410 ADVANCED QUANTITATIVE METHODS MANAGEMENT II (3).** LEC. 3. Pr., MNGT 8400. Introduction to multivariate techniques in business research. Study of the theory and applications of ANOVA, ANCOVA, MANOVA, MANCOVE,

## Theatre (THEA)

Discriminate Analysis & Polytomous Logistic Regression. MNGT 8400 or approved equivalent.

**STAT 8420 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT III (3).** LEC. 3. Pr., STAT 7100 and MNGT 8400 and MNGT 8410. Third course in statistical modeling. Emphasis on applications of Principal Components Analysis, and Structural Equation Modeling to management research. STAT 7100, MNGT 8400, MNGT 8410 or approved equivalent.

### Theatre (THEA)

Prof. Daniel Larocque - 844-4748

**THEA 1010 INTRODUCTION TO THEATRE FOR MAJORS I (3).** LEC. 3. Coreq., THEA 1011. Introduces theatre majors to the academic skills they will need to pursue the theatre major at Auburn University, and provides an overview of theatrical collaboration. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Departmental approval.

**THEA 1110 INTRODUCTION TO THEATRE FOR MAJORS II (4).** LEC. 3, LAB. 2. Pr., THEA 1010 and THEA 1011. Introduction to a variety of perspectives regarding theatrical practices, theories, and texts. Focus on productive working relationships and collaborative skills necessary for a successful life in the theatre. Course culminates in the creation of a new performance piece. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Departmental approval.

**THEA 1910 PRODUCTION PRACTICUM I (1).** STU. 4. Experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

**THEA 2010 INTRODUCTION TO THEATRE (3).** LEC. 3. Fine Arts Core. Appreciation of theatre arts including stage, television, and film. Development of sensitive and critical sophistication as articulate, discriminating theatre-goers. Play and film viewing, play-reading, critiques, and term projects.

**THEA 2017 HONORS INTRODUCTION TO THE THEATRE (3).** LEC. 3. Pr., Honors College. Fine Arts Core. Appreciation of theatre arts. Development of sensitivity and critical skills as theatre-goers. Play attendance, reading, critiques, and term projects.

**THEA 2080 PERFORMANCE TECHNIQUES FOR THE CAMERA (3).** LEC. 1, LST. 3. Theory and practice of specialized performance techniques for television and film. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2110 VOICE AND MOVEMENT FUNDAMENTALS (2).** STU. 3. Pr., P/C, THEA 2111. Exploration and study of fundamental issues in vocal production, articulation, and movement. Introduction to vocal anatomy, breathing/relaxation/alignment techniques, and integrated vocal and movement exercises applied in a variety of texts. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2111 VOICE AND MOVEMENT FUNDAMENTALS LAB (1).** LAB. 2. Pr., P/C, THEA 2110. Exploration and application of vocal and physical skills designed to enhance vocal production, physical flexibility and integrated execution of vocal and physical performance skills. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2120 ACTING I (3).** LEC. 2, LST. 2. Pr., THEA 2110. Introduction to basic acting techniques, literature, and performance through improvisation, contemporary scene study and attendance at theatre performances. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2310 THEATRE TECHNOLOGY I (3).** LEC. 2, LAB. 2. A comprehensive introduction to the study of technical theatre; theoretical and practical applications of equipment, materials, and techniques used in technical theatre. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2311 THEATRE TECHNOLOGY I LAB (1).** LAB. 2. Pr., P/C, THEA 2310. A comprehensive introduction to applied work in technical theatre; practical applications of equipment, materials, and techniques used in technical theatre. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Departmental approval.

**THEA 2400 DESIGN AESTHETICS (3).** LEC. 2. An exploration of the fundamental elements and principles of design, pictorial composition, and design theory, and their relationships and potential for application in scenic, costume, and lighting design. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2610 COSTUME CONSTRUCTION (3).** LEC. 1, LST. 3. Fundamentals of machine sewing techniques, pattern drafting and draping, fabric dyes, and craft-work as they relate to theatrical costuming. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2650 STAGE MAKEUP (3).** LEC. 1, LST. 3. Theories and techniques of stage makeup, practical design and execution of basic makeup techniques, special effects, and character makeups. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 2810 THEATRE PRODUCTION I (3-6).** STU. Coreq., THEA 2820. Intensive study of theatre arts through participation in the AU Summer Repertory Company,

focusing mainly on technical work and design. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**THEA 2820 SUMMER REPERTORY THEATRE COMPANY I (3-6).** STU. Coreq., THEA 2810. A concentrated workshop experience in all aspects of theatre production through participation in rehearsal and performance. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**THEA 2840 BEGINNING DANCE TECHNIQUES (3).** LEC. 1, LST. 3. Beginning level dance technique and theory, focusing on dance as an art form, including a survey of dance in different cultural and historical contexts. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

**THEA 2841 DANCE LAB I: BALLET (1).** STU. 1. Studio introduction to ballet technique. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

**THEA 2910 PRODUCTION PRACTICUM II (1).** STU. 4. Pr., THEA 1910. Experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 4 credit hours.

**THEA 2940 APPLIED THEATRE I: ACTING (1).** STU. 4. Intensive applied work for students cast in AU Theatre productions. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

**THEA 3110 VOICE FOR THE ACTOR II (3).** LEC. 2, LST. 2. Pr., THEA 2110. Departmental approval. Continuing study of vocal production and articulation techniques in tests of increasing complexity. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3120 ACTING II (3).** LEC. 2, LST. 2. Pr., THEA 2120. Departmental approval. Exploration of internal and external acting theory and techniques in modern and classical scene study. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3140 MUSIC THEATRE ACTING (3).** LEC. 2, LST. 2. Exploration of acting techniques and performance through music theatre scene and song study, analysis, and history of music theatre repertoire culminating in public performance. Or department approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3150 BFA PERFORMANCE STUDIO I (4).** LEC. 3, LST. 5. Intensive study and practice integrating advanced contemporary scene study, audition technique, and the Fitzmaurice Voicework system. Theatre majors who do not Theatre majors who do not re-audition for the BFA performance program and repeat the course. Departmental approval.

**THEA 3160 BFA PERFORMANCE STUDIO II (4).** LEC. 3, LST. 5. Pr., THEA 3150. Intensive study and practice integrating Shakespeare and scene study of poetic texts with continuing work in the Fitzmaurice Voicework system. Theatre students who do not earn a grade of "C" or higher must re-audition for the BFA Performance program and repeat THEA 3150 and THEA 3160.

**THEA 3190 SINGING PRACTICUM (1).** STU. 1. The course provides instruction in the primary principles of healthy vocal production, efficient breathing, projection, diction and interpretation. Or department approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3200 STAGE MANAGEMENT (3).** LEC. 3. Examination of the role and responsibilities of the stage manager in the producing organization: management, organization, auditions, rehearsal, and production procedures. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3320 THEATRE TECHNOLOGY II (3).** LEC. 2, LST. 2. Pr., THEA 2310. Theoretical and practical applications of equipment and techniques in technical theatre. Topics include light, sound mechanics, theatre rigging, equipment, special effects, and computer applications. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3330 SCENE PAINTING (3).** LEC. 2, LAB. 2. Pr., THEA 2400. Studio oriented course introducing the principles, techniques, and media of the scenic artist. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3350 TECHNICAL DIRECTION/PRODUCTION MANAGEMENT (3).** LEC. 3. Pr., THEA 2310 and THEA 3320. Exploration of the roles and responsibilities of the Technical Director and the Production Manager in the coordination and execution of technical elements for theatre productions. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3400 RENDERING FOR THE THEATRE (3).** LEC. 2, LAB. 2. Pr., THEA 2400. Traditional drawing and rendering techniques and medias that help the designer to communicate scenic, costume, and lighting designs. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3410 SCENE DESIGN I (3).** LEC. 2, LST. 2. Pr., THEA 2400. Discussion, research, and execution of theory and practices of designing scenery for the stage. Emphasis on traditional style and methods of design and presentation for the pro-

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scenium theatre. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3420 PROPERTY DESIGN AND TECHNOLOGY (3).** LEC. 2, LST. 2. Pr., THEA 3320. History, design, organization, application of materials, and techniques used in the design and construction of properties for the theatre, film, and television. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3450 DRAFTING FOR THE THEATRE I (3).** LEC. 2, LST. 2. Pr., THEA 2310. Departmental approval. Introduction to hand drafting techniques related to technical theatre. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3510 LIGHTING DESIGN (3).** LEC. 2, LST. 2. Pr., THEA 2310. Studio course that explores the theory, research, and practice of stage lighting, practical illumination, and effects lighting. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3520 SOUND DESIGN (3).** LEC. 2, LST. 2. Pr., THEA 3320. A course to develop an in-depth understanding of the equipment and techniques used in sound design, as both a design and technical medium. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3610 ADVANCED COSTUME CONSTRUCTION (3).** LEC. 2, LST. 2. Pr., THEA 2610. Historical pattern making and draping, millinery skills, and craft techniques, and their practical applications in theatre costuming. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3640 COSTUME DESIGN (3).** LEC. 2, LST. 2. Pr., THEA 2400. Costume design and rendering as it relates to historical and original design for the theatre. Exploration of design for television, commercials, and rock stars. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3700 THEATRE, HISTORY, THEORY AND CRITICISM I (3).** LEC. 3. An examination of the history and literature of the theatre from prehistory to the present with an emphasis on text as a broad category for understanding a variety of issues and topics relevant to contemporary theatre practice. Areas of exploration include such topics as genre studies, text-based theatrical movements, and script analysis techniques for theatre practitioners. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3710 THEATRE, HISTORY, THEORY AND CRITICISM II (3).** LEC. 2, LST. 2. An examination of the history, literature, and theory of the theatre from prehistory to the present with an emphasis on the human body as a broad category for understanding a variety of issues and topics of the social status of the actor's body as a medium of representation, and theatrical representation, and theatrical representations of gender and morality. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3720 THEATRE HISTORY, THEORY AND CRITICISM III (3).** LEC. 2, LST. 2. An examination of the history, literature, and theory of the theatre from prehistory to the present with an emphasis on theatrical space as a broad category for understanding a variety of issues and topics relevant to contemporary theatre practice. Areas of exploration include such topics as ritual landscapes as they pertain to the origin of drama, the development of the western playhouse, the avant-garde reconceptualization of theatre space, and the development of such spatially oriented American institutions such as Broadway and regional theatre. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3730 MUSIC THEATRE HISTORY (3).** LEC. 3. Exploration of music theatre literature, performances, historical, analytical and critical trends from the early 20th century to the present day. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3740 COSTUME HISTORY (3).** LEC. 3. History of Western costume and its uses in the theatre from ancient times to the present. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3840 INTERMEDIATE DANCE TECHNIQUES I (3).** LEC. 1, LST. 3. Pr., THEA 2850. Intermediate level dance technique and theory, with an emphasis on performance qualities including work on alignment, strength, flexibility, rhythm, musicality, and dynamics, as well as the study of select contemporary choreographers. Intermediate I and II need not be taken in sequence. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

**THEA 3841 DANCE LAB II: JAZZ (1).** STU. 3. Exploration of jazz technique. Department approval. Theatre majors who do not earn a grade of "C" or higher music repeat this course. Course may be repeated for a maximum of 2 credit hours.

**THEA 3850 INTERMEDIATE DANCE TECHNIQUES II (3).** LEC. 1, LST. 3. Pr., THEA 3840. Further exploration into intermediate level dance technique and theory, with emphasis on aesthetics and contemporary topics in dance. Intermediate I and II need not be taken in sequence. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

**THEA 3860 MOVEMENT FOR THE ACTOR (3).** STU. 4. Introduction to the basic concepts of movement as it relates to the actor. Students will find integrative ways of connecting the body to text and space. Department approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3910 PRODUCTION PRACTICUM III (1).** STU. 4. Or Departmental approval. Experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 8 credit hours.

**THEA 3940 APPLIED THEATRE II: ACTING (1).** STU. 4. Intensive applied work for students cast in AU Theatre productions. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

**THEA 3950 DIRECTING SEMINAR (3).** LEC. 2, LAB. 2. Pr., THEA 2120 and THEA 3700. Study of fundamental skills and collaborative processes needed to direct a piece of live theatre, including blocking, script analysis, research methods, approaches to casting, and rehearsal techniques. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 3960 DRAMATURGY SEMINAR (3).** LEC. 3. Study of fundamental skills and collaborative processes needed to dramaturgy a piece of live theatre including both production and new play dramaturgy, critical analysis, research, presentations, and performance. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 4150 BFA PERFORMANCE STUDIO III (4).** LEC. 3, LST. 5. Pr., THEA 4140. Professional preparation with particular focus on individual rehearsal and performance techniques covering a broad spectrum of periods and styles geared toward graduate acting program placement and professional employment. Theatre majors who do not earn a grade of "C" or higher must re-audition for the BFA performance program and repeat THEA 3150, 3160, and 4150.

**THEA 4160 BFA PERFORMANCE STUDIO IV (4).** LEC. 3, LST. 5. Pr., THEA 4150. Special problems and topics in performance. Intensive work integrating and applying acting, voice, and movement techniques in an ensemble capstone recital of work in an adjudicated public performance. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 4420 SCENE DESIGN II (3).** LEC. 2, LST. 2. Pr., THEA 3410. Advanced course in theory and practice of scenic and lighting design for theatre. Emphasis on experimental and non-traditional staging in a variety of space. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 4450 DRAFTING FOR THE THEATRE II (3).** LEC. 2, LST. 2. Pr., THEA 3450. Departmental approval. Introduction to computer-aided design in technical theatre drafting. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 4650 ADVANCED STAGE MAKEUP (3).** LEC. 1, LST. 3. Pr., THEA 2650. Comprehensive study of specialized makeup: film, television, mask making, prosthesis, facial hair design, and wig making. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 4750 PLAYWRITING (3).** LEC. 3. Cover the principles of play construction, assignment of playwriting exercises, and the completion of a one-act play.

**THEA 4810 THEATRE PRODUCTION II (3-6).** STU. A concentrated workshop experience in all aspects of theatre production through participation in rehearsal and performance. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**THEA 4820 SUMMER REPERTORY THEATRE COMPANY II (3-6).** STU. Intensive and concentrated study of production skills and techniques and studio/laboratory experiences. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

**THEA 4840 ADVANCED DANCE TECHNIQUES (3).** LEC. 1, LST. 3. Pr., THEA 3850. Intensive study of advanced dance techniques in theory and practice. Course often serves as a training and preparation for public performance. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 12 credit hours.

**THEA 4841 DANCE LAB III: TAP (1).** STU. 3. Introduction to traditional tap dance. Technical concepts, rhythm combinations, and improvisations designed to test and develop skills. Department approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 3 credit hours.

**THEA 4910 PRODUCTION PRACTICUM IV (1-4).** STU. Pr., THEA 3910. Departmental approval. Leadership experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Admission into the BFA program in Design/Technical or Management. Course may be repeated for a maximum of 4 credit hours.

**THEA 4920 PROFESSIONAL INTERNSHIP (1-8).** INT. Internship with professional or community theatre in the student's field of specialization. Each 10-hour work week equals one hour of credit. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

**THEA 4930 DIRECTED STUDIES (1-3).** IND. Directed readings, creative and tutorial projects of interest to the advanced student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**THEA 4940 THEATRE SPECIAL PROJECTS (3).** STU. 4. Departmental approval. Selected projects related to realizing a theatrical production in public performance.

## University Courses (UNIV)

Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 9 credit hours.

**THEA 4950 THEATRE LITERATURE AND THEORY SEMINAR (3).** LEC. 3. Thorough examination of dramatic literature and theory from a narrow perspective (such as genre, style, era, etc.) designed to give students extensive knowledge in one area of theatre. Department approval. Theatre students who do not earn a grade of "C" or higher must repeat this course.

**THEA 4967 HONORS SPECIAL PROBLEMS (1-3).** IND. Pr., Honors College. Subject areas to be determined between student and Theatre instructor. Course may be repeated for a maximum of 6 credit hours.

**THEA 4980 SENIOR CAPSTONE PROJECT (3).** LEC. 3. or higher must repeat this course. Capstone course to aid senior theatre majors in their transition to the professional world and/or graduate students. Department approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

**THEA 4997 HONORS THESIS (1-6).** IND. Pr., Honors College. Final projects of varying natures and in the theatre program. Course may be repeated for a maximum of 6 credit hours.

### Textile Management (TXMT)

Dr. Peter Schwartz - 844-4123

**TXMT 2120 YARN FORMATION II (3).** LEC. 2, LAB. 3. Pr., TXTN 2110. An extension of TXTN 2110 with emphasis on the management/ technology aspects of yarn manufacturing including yarn structures, fiber selection techniques, and fiber/machine interaction.

**TXMT 2410 INTRODUCTION TO DYEING AND FINISHING (4).** LEC. 3, LAB. 3. Pr., CHEM 1020 or CHEM 1027. Principles/techniques to modify textile materials by coloration, additives, surface treatment; bleaching, dyeing, finishing of textile structures.

**TXMT 3200 FABRIC DESIGN AND ANALYSIS (3).** LEC. 2, LAB. 3. Pr., TXTN 2210. Fundamentals of fabric designing including technological restrictions for formation, techniques for enhancing fabric performance and techniques to manage production for higher output.

**TXMT 3220 NONCONVENTIONAL FABRICS (2).** LEC. 2. Pr., TXTN 2210 and TXTN 3310. The manufacturing technology of non-woven and tufted textile textiles along with the properties and uses of those fabrics.

**TXMT 3520 TEXTILE QUALITY CONTROL (2).** LEC. 2. Pr., STAT 3010 and TXTN 3500. SPC and quality engineering aspects required for textile applications.

**TXMT 4800 PLANT OPERATIONS AND COST CONTROL (3).** LEC. 3. Pr., TXTN 2210. The principles of textile operations cost analysis based on labor cost, raw material cost, technological requirements and customer requirements. Strategies for improving competitive advantages.

**TXMT 4810 SENIOR RESEARCH I (1).** IND. 1. Undergraduate research sequence, initial semester.

**TXMT 4820 SENIOR RESEARCH I (1).** IND. 1. Conclusion of an undergraduate research sequence.

**TXMT 4970 SPECIAL TOPICS (1-10).** IND. Reading and special projects course for overview in specific areas of textile technology and management. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

### Textile Management (TXTN)

Dr. Peter Schwartz - 844-4123

**TXTN 2000 INTRODUCTION TO TEXTILE TECHNOLOGY (2).** LEC. 2. Survey of the technology dealing with the manufacture of textiles, including fiber, yarn, fabric, and coloration and finishing treatments.

**TXTN 2110 YARN FORMATION I (2).** LEC. 1, LAB. 3. Pr., TXTN 2000. Different yarn forming systems including: staple, filament and texturized yarns. Interaction between raw material and machinery that creates specially-designed yarns.

**TXTN 2210 FABRIC-FORMING SYSTEMS (3).** LEC. 2, LAB. 3. Pr., TXTN 2110. The principles of fabric formation technologies for the production of woven, knitted, non-woven and tufted structures. Solutions for managing production and problems in production.

**TXTN 2920 INDUSTRY INTERNSHIP (3).** IND. 3. A directed project in an industrial setting addressing current, significant problems selected by the sponsor and approved by the course coordinator. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

**TXTN 3310 STRUC AND PROPERTIES OF FIBERS (4).** LEC. 3, LAB. 3. Pr., CHEM 1020. The relationships between the chemical structure, fiber properties and use of textile fibers. Polymer synthesis and fiber manufacture.

**TXTN 3450 TECHNICAL TEXTILES (3).** LEC. 3. Pr., TXTN 2210. A survey of technical textiles used in applications other than apparel and home furnishings.

**TXTN 3500 TESTING OF TEXTILE MATERIALS (3).** LEC. 2, LAB. 3. Pr., TXTN 2110. Basic principles of measuring physical properties of textile fibers, yarns and fabrics. Application of testing methods and results to practical problem solving and standards evaluation.

**TXTN 4967 HONORS READINGS (1-3).** IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

**TXTN 4997 HONORS THESIS (3).** LEC. 3. Pr., Honors College. Individual student endeavor consisting of directed research and writing of honors thesis. May be substituted for TXCH 4990/TXCH 4910 or TXMT 4900/TXMT 4910.

## Sustainability Studies (SUST)

Dr. Lindy Biggs – 844-7777

**SUST 2000 INTRODUCTION TO SUSTAINABILITY (3).** LEC. 3. Introduction to the interdisciplinary study of sustainability.

**SUST 5000 SENIOR CAPSTONE IN SUSTAINABILITY (3).** LEC. 3. Pr., SUST 2000. Capstone research seminar for students completing the Minor in Sustainability Studies.

## University Courses (UNIV)

**UNIV 1000 THE AUBURN EXPERIENCE (1).** LEC. 1. Surveys the history of the University, current student resources, and academic programs.

**UNIV 1050 SUCCESS STRATEGIES (1).** LEC. 1. An introduction to essential academic and personal skills. Designed to familiarize students with university life and academic improvement skills. First-term student, 2.20 or below, Departmental approval.

**UNIV 1060 SUCCESS STRATEGIES II (2).** LEC. 2. SU. Designed for those in academic jeopardy, this course assists students in identifying issues impacting academic success and developing strategies to affect positive change. Must have below a 2.0 GPA.

**UNIV 1100 FIRST YEAR SEMINAR (1-2).** LEC/SEM. Introduce a topic of interest with contemporary importance to beginning college students. Course may be repeated for a maximum of 4 credit hours.

**UNIV 1150 SPECIAL TOPICS WITH LEARNING STRATEGIES (2).** LEC. 2. This course offers first-year students an opportunity to explore a topical area of interest while integrating related study skills.

**UNIV 2000 FOUNDATIONS OF LEADERSHIP (3).** LEC. 2, LAB. 1. Introductory course for students pursuing the Leadership Minor.

**UNIV 2190 FOUNDATIONS OF INTERDISCIPLINARY UNIVERSITY STUDIES (3).** LEC. 3. Pr., (P/C, ENGL 1120 or P/C, ENGL 1127). Introductory course to the theories and approaches for Interdisciplinary Degree seeking majors. Students will work alongside academic and career advisors to produce an approved plan of study for Interdisciplinary coursework to be completed.

**UNIV 2710 THE HUMAN ODYSSEY I (3).** LEC. 3. History Core. Examines the human endeavor from pre-history through the 17th century by exploring connections between the sciences and humanities.

**UNIV 2717 HONORS HUMAN ODYSSEY I (3).** LEC. 3. Pr., Honors College. History Core. Examines the human endeavor from prehistory through the 17th century by exploring connections between the sciences and humanities.

**UNIV 2720 THE HUMAN ODYSSEY II (3).** LEC. 3. History Core. Examines the human endeavor from the 18th century through the present by exploring connections between the sciences and humanities.

**UNIV 2727 HONORS HUMAN ODYSSEY II (3).** LEC. 3. Pr., Honors College. History Core. Examines the human endeavor from the 18th century through the present by exploring connections between the sciences and humanities.

**UNIV 2777 HONORS LYCEUM (1).** LEC. 1. SU. Pr., Honors College. Weekly academic lectures followed by a discussion and interaction. Course may be repeated for a maximum of 2 credit hours.

**UNIV 2940 AUBURN ABROAD (0).** AAB. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 2945 AUBURN ABROAD (0).** FLD. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 2960 SCHOOL OF RECORD TRANSIENT COURSE (0).** AAB/FLD. Must be Auburn transient student. Auburn University is the "School of Record" for transient students seeking academic credit for international programs provided by independent vendors. Course content will vary by individual program.

**UNIV 3510 EUROPEAN ODYSSEY (3).** FLD. 2. Summer study-abroad program in Rome, Florence, Paris, London, Edinburgh; through visits to churches, historic sites, contemporary buildings, museums, galleries, parks, piazzas, rivers, trains, restaurants, theatres and stores, students will research selected aspects of Western mythology and religion, Roman Empire, society and culture, art and architecture, Renaissance, Enlightenment and Reformation, and industrial and scientific revolutions.

**UNIV 3517 HONORS EUROPEAN ODYSSEY (3).** FLD. 2. Summer study-abroad program in Rome, Florence, Paris, London, Edinburgh; through visits to churches, historic sites, contemporary buildings, museums, galleries, parks, piazzas, rivers,



## Veterinary Medicine (VMED)

trains, restaurants, theatres and stores, students will research selected aspects of Western mythology and religion, Roman Empire, society and culture, art and architecture, Renaissance, Enlightenment and Reformation, and industrial and scientific revolutions.

**UNIV 4000 LEADERSHIP IN PRACTICE (3).** LEC. 3. Capstone course in interdisciplinary leadership minor.

**UNIV 4920 CURRICULAR PRACTICAL TRAINING (0).** PRA. For international students and scholars on U.S. OS EV approved Academic Training. Office of International Education authorized enrollments only.

**UNIV 4940 AUBURN ABROAD (0).** AAB. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 4945 AUBURN ABROAD (0).** AAB/FLD. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 4980 INTERDISCIPLINARY CAPSTONE EXPERIENCE (3).** LEC. 3. SU. Completion of UNIV 2190 with a grade of C or better and 90 credit hours. Capstone course designed to apply Interdisciplinary Degree Coursework to a service learning, internship or senior thesis project.

**UNIV 4AA0 UNIVERSITY GRADUATION (0).** LEC.

**UNIV 5940 AUBURN ABROAD (0).** AAB. Pr., 3 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 5945 AUBURN ABROAD (0).** AAB/FLD. Pr., 3 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 7010 RURAL STUDIO CERTIFICATE (0).** LEC. 3.

**UNIV 7020 RURAL STUDIO CERTIFICATE I (0).** LEC. 3.

**UNIV 7030 RURAL STUDIO CERTIFICATE II (0).** LEC. 3.

**UNIV 7940 AUBURN ABROAD (0).** AAB. Pr., 3 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

**UNIV 7945 AUBURN ABROAD (0).** AAB/FLD. Pr., 3 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

### Veterinary Medicine (VMED)

Dr. Frank Bartol - 844-3700

### BIOMEDICAL SCIENCES (VBMS)

**VBMS 3010 INTRODUCTION TO EPIDEMIOLOGY (3).** LEC. 3. Principles of epidemiology, with emphasis on approaches for prevention/control of diseases of humans and animals. Broad applications of studies of populations will be stressed.

**VBMS 4980 UNDERGRADUATE RESEARCH (1-3).** RES. Directed, supervised undergraduate research in veterinary biomedical sciences (VBMS). Course may be repeated for a maximum of 9 credit hours.

**VBMS 4987 HONORS RESEARCH (1-3).** RES. Supervised undergraduate research in veterinary biomedical science. May count either VBMS 4987 or VBMS 4997. Course may be repeated for a maximum of 9 credit hours.

**VBMS 4997 HONORS THESIS (1-3).** RES. Undergraduate honors thesis development in veterinary biomedical science. May Count either VBMS 4987 or VBMS 4997. Course may be repeated for a maximum of 9 credit hours.

**VBMS 6111 VETERINARY ANATOMY I (4).** LAB. 12. Gross anatomy of the dog and cat including skeletal and muscular systems, neck, thorax, limbs, abdomen, pelvis, head, and nervous system. Credit will not be given for both VMED 5111 and VBMS 6111. Departmental approval.

**VBMS 7000 NEUROANATOMY (5).** LEC. 3, LAB. 4. Functional morphology of nervous system from input/output through the long systems; limbic relations to endocrine and autonomic nervous system. Comparative among primates and domestic animals. Departmental approval.

**VBMS 7010 PATHWAYS TO SUCCESSFUL RESEARCH (1).** LEC. 1. An introduction to topics pertinent to performance of a successful graduate program and in the conduction of responsible research.

**VBMS 7020 MICROSCOPIC ANATOMY I (3).** LEC. 1, LAB. 4. A detailed study of and preparation of the basic tissues. Light microscopy and electron micrograph preparations are used to describe and interpret morphology. Departmental approval.

**VBMS 7030 MICROSCOPIC ANATOMY II (3).** LEC. 1, LAB. 4. Light microscopy and electron microscopy detailed study of the cardiovascular, hemopoietic, digestive, urinary and respiratory systems of domestic animals. Departmental approval.

**VBMS 7040 ADVANCED PHYSIOLOGY OF REPRODUCTION (3).** LEC. 3. Pr., ANSC 3600 and BIOL 6240 or VBMS 7150. Departmental approval. Developmental, physiological, endocrinological, cellular and molecular mechanisms regulating reproduction, with emphasis on mammalian systems.

**VBMS 7050 DEVELOPMENTAL NEUROBIOLOGY (3).** LEC. 3. Overview of the development of the nervous system. Emphasis will be directed towards understanding sensory systems, development, plasticity and function. Departmental approval.

**VBMS 7060 FUNGAL TOXINS (2).** LEC. 2. Biology and epidemiology of fungi involved with diseases caused by fungal toxins. Detection, adverse health effects in diverse animal species, regulatory aspects, and control strategies. Departmental approval.

**VBMS 7070 ENDOCRINOLOGY (4).** LEC. 4. Pr., BCHE 7200 and BCHE 7260 and BIOL 6600. Molecular and cellular endocrinology and physiological regulation of hormone synthesis, secretion, and action in mammalian species. Emphasis will be placed on metabolic regulatory hormones. Departmental approval.

**VBMS 7080 MOLECULAR ENDOCRINOLOGY (2).** LEC. 2. Pr., VBMS 7070. Examination of the literature of hormonal synthesis, secretion and mechanism of action with emphasis on receptors, second messenger systems, and gene regulation. Departmental approval.

**VBMS 7090 CLINICAL PHARMACOLOGY (3).** LEC. 3. The actions and effects of drugs on human beings. Acceptable courses in biochemistry and physiology; departmental approval.

**VBMS 7110 ADVANCED CARDIOVASCULAR PHYSIOLOGY (5).** LEC. 5. Cellular and molecular regulation of cardiovascular function. Departmental approval.

**VBMS 7120 MEMBRANE PHYSIOLOGY (3).** LEC. 2, LAB. 3. The classic and modern aspects of biological membranes. Labs include patch clamp, reconstruction of ion channels in bilayers, Langmuir-Blodgett techniques, and other methods. Departmental approval.

**VBMS 7130 VETERINARY MEDICINE DIAGNOSTIC ULTRASONOGRAPHY (3).** LEC. 3. Pr., VMED 5120 and VMED 5121. The principles and practice of veterinary medical diagnostic ultrasonography as they are utilized in evaluating normal and abnormal anatomy. All animals are used in this course. Veterinary anatomy and/or DVM degree.

**VBMS 7140 PHYSIOLOGY I (5).** LEC. 5. Cellular, Cardiovascular, Renal and Respiratory Physiology. Departmental approval.

**VBMS 7150 PHYSIOLOGY 2 (4).** LEC. 4. Pr., VBMS 7140. Gastrointestinal Physiology, Metabolism, Endocrinology, and Reproductive Physiology. Departmental approval.

**VBMS 7160 NEUROSCIENCE (3).** LEC. 3. An overview of neuroscience on the subcellular, cellular and system levels. Departmental approval.

**VBMS 7170 ANATOMY, PHYSIOLOGY, PHARMACOLOGY SEMINAR (1).** SEM. 1. Required of all graduate students in Anatomy, Physiology, and Pharmacology.

**VBMS 7180 RECEPTOROLOGY (4).** LEC. 4. Pr., VBMS 7070.

**VBMS 7210 RADIATION BIOLOGY (4).** LEC. 4. Exploration of biological, physical, and chemical basis of radiotherapy with emphasis on the biological effects of ionizing radiation at the cellular and molecular level. Effects of irradiation on the tumor, normal tissues, and the patient will be addressed. DVM degree; Residency in Radiation Oncology or Radiology or Small Animal Oncology and registered in the Graduate School.

**VBMS 7240 ADVANCED SCIENCE OF CANINE AND EQUINE LOCOMOTION (3).** LEC. 3. Attendees will learn about the science of biomechanics, muscle physiology and how they apply to locomotion or the athletics and working dog and horse

**VBMS 7250 NORMAL RADIOLOGICAL ANATOMY (3).** LEC. 3. A detailed study of the normal structure, size and position of the various organs of the cat, dog, horse, cow, and other veterinary species as they appear on plain and contrast radiographs. DVM Degree, acceptance in an established residency program.

**VBMS 7260 ADVANCED RADIOLOGY (3-5).** LEC. Detailed study of concepts and techniques of all imaging procedures. For graduate students and residents in DCS program or DVM or equivalent.

**VBMS 7270 RADIOLOGICAL INTERPRETATIONS (1-3).** LEC. The interpretation of various diagnostic imaging modalities used in veterinary medicine and their applications in the diagnostic work-up of clinical cases presenting to the College of Veterinary Medicine. DVM Degree.

**VBMS 7280 PHYSICS OF DIAGNOSTIC IMAGING (3).** LEC. 3. Principles of physics related to the imaging modalities of diagnostic radiology, ultrasonography, magnetic resonance imaging, scintigraphy, computed tomography, and radiation therapy. Students will study physics at the atomic level but must also develop an understanding of construction, function, and hazards of modern imaging equipment. DVM Degree.

**VBMS 7290 GRADUATE SEMINAR (1).** SEM. 1. A mandatory graded seminar presentation, held in conjunction with the VBMS seminar series, presenting the resident student's individual Master of Science degree research topic including pertinent

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review, hypothesis, materials, results, and discussion of findings. Departmental approval.

**VBMS 7340 LARGE ANIMAL SURGERY AND MEDICINE SEMINAR (1).** SEM. 1. Seminar required of all graduate students in large animal surgery and medicine. Meets at scheduled intervals each year. Departmental approval.

**VBMS 7350 ADVANCED LARGE ANIMAL UROGENITAL SURGERY (5).** LEC. 3, LAB. 6. Research in surgery. Advanced techniques for urogenital surgical procedures in large domestic animals. Departmental approval.

**VBMS 7360 ADVANCED LARGE ANIMAL SOFT TISSUE SURGERY (5).** LEC. 4, LAB. 2. Research in surgery. Advanced techniques for soft tissue surgical procedures in large domestic animals. Departmental approval.

**VBMS 7370 ADVANCED LARGE ANIMAL ORTHOPEDIC SURGERY (5).** LEC. 3, LAB. 2. Research and advanced techniques for orthopedic surgical procedures in large domestic animals.

**VBMS 7380 ADVANCED FOOD ANIMAL MEDICINE (3).** LEC. 3. In-depth study of food animal medical diseases of all body systems with emphasis on pathophysiologic mechanisms. Departmental approval; DVM degree.

**VBMS 7390 ADVANCED EQUINE MEDICINE (3).** LEC. 3. Detailed etiology, symptoms, pathogenesis, treatment, and prevention of the medical diseases affecting the various systems and organs of the equine, bovine, ovine, and porcine species. Departmental approval.

**VBMS 7400 GYNECOLOGY OF LARGE DOMESTIC ANIMALS (3).** LEC. 3. Diseases and problems of the reproductive system in the female domestic animals. Normal and abnormal conditions of various species are covered. Departmental approval; DVM degree.

**VBMS 7410 ANDROLOGY OF LARGE DOMESTIC ANIMALS (3).** LEC. 3. Diseases and problems of the reproductive system in male domestic animals. Departmental approval; DVM degree.

**VBMS 7420 ADVANCED VETERINARY ANESTHESIOLOGY (4).** LEC. 4. Departmental approval.

**VBMS 7430 HEALTH MAINTENANCE OF FOOD ANIMALS (3).** LEC. 5. Research in production medicine. Principles of production medicine to enhance animal health and productivity. Departmental approval.

**VBMS 7440 ADVANCED EQUINE ARTHROSCOPIC SURGERY (5).** LEC. 3, LAB. 6. Research in surgery. Advanced techniques for arthroscopic surgical procedures in the horse. Departmental approval; DVM degree.

**VBMS 7450 SELECTED TOPICS IN GRADUATE EDUCATION RESEARCH (1).** LEC. 1. SU. Overview of research funding strategies, grant preparation, transfer of research technology and patents, research ethics, etc. Departmental approval.

**VBMS 7460 BACTERIAL PATHOGENESIS (3).** LEC. 3. Pr., VBMS 7510 or BIOL 4520. Molecular and cellular basis of virulence of bacterial pathogens of animals. Departmental approval.

**VBMS 7470 ADVANCED EPIDEMIOLOGY (3).** LEC. 3. Advanced epidemiological techniques and their application to disease research, clinical retrospective and prospective studies, and disease outbreak investigation. Introductory statistics course Departmental approval.

**VBMS 7480 METHODS IN IMMUNOLOGY (5).** LEC. 1, LAB. 8. Theoretical concepts underlying immunological methods combined with practical hands-on immunological experimentation focused on application to research in the biological sciences. Departmental approval.

**VBMS 7490 DIAGNOSTIC TECHNIQUES IN VETERINARY MICROBIOLOGY (4).** LEC. 1, LAB. 9. Techniques used in modern diagnostic microbiology laboratories. Departmental approval.

**VBMS 7500 CELLULAR AND MOLECULAR IMMUNOLOGY (3).** LEC. Pr., BIOL 6500. Current literature in immunobiology, emphasis on cellular/ biochemical/ genetic basis of immune response. Departmental approval.

**VBMS 7510 QUALITY SYSTEMS IN HEALTH SCIENCES (3).** LEC. 3. Overview of regulations, standards, and foundational principles for quality systems and processes illuminating the application to health sciences.

**VBMS 7520 EUKARYOTIC MOLECULAR BIOLOGY (3).** LEC. 3. Genetic mechanisms by which eukaryotic cells replicate, communicate and differentiate. Current literature will be used extensively.

**VBMS 7530 EXPERIMENTAL TECHNIQUES IN MOLECULAR AND CELL BIOLOGY (3).** LEC. 2, LAB. 6. Nucleic acid detection/amplification/sequencing, protein/ antibody chemistry, flow cytometry, photo/electron microscopy fluorochromes, radioisotopes, centrifugation, cell/embryo culture.

**VBMS 7540 CURRENT TOPICS IN MOLECULAR VIROLOGY (3).** LEC. 3. Pr., VBMS 7520 and BIOL 6260. Viral gene expression and evasion of host defense mechanisms. Departmental approval.

**VBMS 7550 PATHOLOGY (1-3).** LEC. SU. Diagnostic interpretation of lesions and test results. Special topics or current issues in pathology to meet the particular needs of students. DVM degree or equivalent; Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**VBMS 7560 GENERAL PATHOLOGY (4).** LEC. 3, LAB. 3. Fundamental alterations of disease. Departmental approval; Satisfactory courses in histology and physiology,

**VBMS 7570 DIAGNOSTIC PATHOLOGY (1-3).** LEC. SU. Diagnosis of animal diseases using necropsy procedures and histopathology. Required every semester of all graduate students and residents in pathology. DVM degree. Course may be repeated for a maximum of 3 credit hours.

**VBMS 7580 SURGICAL PATHOLOGY (1-3).** LEC. SU. Histopathologic diagnosis of surgical biopsy specimens. Required every semester for all graduate students and residents in pathology. DVM degree. Course may be repeated for a maximum of 3 credit hours.

**VBMS 7590 AVIAN PATHOLOGY (4).** LEC. 4. Comparative avian pathology emphasizing cause, pathogenesis and lesions associated with diseases; differential diagnosis and diagnostic procedures to confirm a diagnosis. Departmental approval.

**VBMS 7600 ADVANCED CLINICAL PATHOLOGY I (3).** LEC. 3. Pr., VMED 5230. The lymphohematopoietic system. Normal components and evaluation of disease states. Departmental approval.

**VBMS 7610 ADVANCED CLINICAL PATHOLOGY II (3).** LEC. 3. Pr., VBMS 5230. Laboratory evaluation of organ function; disease pattern recognition. Departmental approval.

**VBMS 7620 DIAGNOSTIC ONCOLOGY (3).** LEC. 3. Pr., VMED 5220. Principles of gross and microscopic interpretation of animal neoplasms using basic and specialized techniques. Departmental approval.

**VBMS 7630 BASIC AND CLINICAL ONCOLOGY (3).** LEC. 3. Comparative aspects of the etiology, pathophysiology, diagnosis and treatment of cancer.

**VBMS 7640 MECHANISMS OF DISEASE (3).** LEC. 3. Pr., VMED 5220 VMED 5220 or equivalent, departmental approval. Disease lesions, processes, disorders; morphologic, molecular and genetic aspects of disease processes. Departmental approval.

**VBMS 7650 VETERINARY PROTOZOLOGY AND ENTOMOLOGY (3).** LEC. 3. Current topics in immunology, physiology, molecular biology, pathogenicity, etc. of selected protozoal and arthropod parasites. Departmental approval.

**VBMS 7660 VETERINARY HELMINTHOLOGY (3).** LEC. 3. Current topics in immunology, physiology, biochemistry, molecular biology, epidemiology, and pathogenicity of selected helminth parasites. Departmental approval.

**VBMS 7670 PATHOLOGY PARASITIC DISEASES (3).** LEC. 2, LAB. 2. Pr., VBMS 7560. Gross and microscopic pathology of parasitic diseases of veterinary importance. Departmental approval.

**VBMS 7680 PATHOLOGY SEMINAR (1).** LEC. 1. Pr., VMED 5220. Weekly conference to discuss gross and histologic pathology in animal tissues. Departmental approval.

**VBMS 7690 READINGS IN IMMUNOLOGY AND INFECTIOUS DISEASE (1).** LEC. 1. SU. Pr., BIOL 6500 or VBMS 7500. To familiarize students with current scientific literature in immunology and the methods employed. Or equivalent.

**VBMS 7700 COMBINATORIAL BIOCHEMISTRY AND PHAGE DISPLAY (4).** LEC. 1, LAB. 6. In-depth study of combinatorial biochemistry and phage display as a tool for development of new drugs, vaccines and diagnostics for veterinary medicine.

**VBMS 7710 ADVANCED EUKARYOTIC MOLECULAR BIOLOGY (3).** LEC. 3. Pr., VBMS 7520. Current literature in molecular mechanisms of information transfer and regulation in eukaryotes.

**VBMS 7720 DEVELOPMENTAL MOLECULAR BIOLOGY (3).** LEC. 3. Pr., VBMS 7520. Genetic mechanisms by which eukaryotes differentiate from single cells to complex multicellular organisms will be covered. Important examples of biomedical dysfunction will be used to illustrate developmental pathways. Current literature will be used extensively.

**VBMS 7740 CLINICAL VETERINARY MICROBIOLOGY (1).** LEC. 1. SU. Directed discussion group reviewing the current, clinical scientific literature in veterinary microbiology and veterinary infectious disease research. Course may be repeated for a maximum of 5 credit hours.

**VBMS 7750 GRADUATE COLLOQUIUM IN VETERINARY CLINICAL SCIENCE (1) CLN. 1.** Forum to present topics relevant to the students clinical and research interests. This a mandatory seminar for graduate students in the Department of Clinical Science. DVM degree Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**VBMS 7760 ADVANCED NEUROSURGERY (4).** LEC. 2, LAB. 6. Applied anatomy, physiology, physical and radiographic diagnosis and surgical correction of lesions affecting the nervous system of small pet animals.

**VBMS 7770 ADVANCED SMALL ANIMAL GENERAL SURGERY (3).** LEC. 2, LAB. 3. Application of critical thinking skills to perioperative plans and tasks. DVM or VMD degree, or equivalent.

**VBMS 7780 VETERINARY WOUND MANAGEMENT AND RECONSTRUCTIVE SURGERY (4).** LEC. 2, LAB. 2. Techniques in veterinary wound management and reconstructive surgery in large and small animals. DVM degree or equivalent.

## Veterinary Medicine (VMED)

**VBMS 7790 SMALL ANIMAL ORTHOPEDICS (3).** LEC. 3. Review of orthopedic diseases in small animals, interactive review of recent literature and advanced laboratory sessions intended for residents in small animal surgery. DVM degree or equivalent.

**VBMS 7800 ADVANCED SMALL ANIMAL NEUROLOGY (3).** LEC. 3. Advanced study of neurodiagnostics and non-surgical therapy of neurological disorders in small domestic animals.

**VBMS 7810 ADVANCED SMALL ANIMAL MEDICINE I (3-5).** LEC. Special study of the causes, methods of diagnosis, treatment and control of non-surgical urogenital diseases of small animals. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**VBMS 7820 ADVANCED SMALL ANIMAL MEDICINE II (3-5).** LEC. 3. Special study of the causes, methods of diagnosis, treatment and control of non-surgical gastrointestinal diseases of small animals. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**VBMS 7830 ADVANCED SMALL ANIMAL MEDICINE III (3-5).** LEC. 3. Special study of the causes, methods of diagnosis, treatment and control of non-surgical cardiovascular and respiratory diseases of small animals. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**VBMS 7840 ADVANCED SMALL ANIMAL MEDICINE IV (3-5).** LEC. Molecular biology lectures and techniques related to diagnostic and research application to clinical problems in small animal veterinary medicine. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

**VBMS 7850 ADVANCED VETERINARY MEDICAL SPECIALTY TRAINING (1-4).** LEC. 1, LAB. 2. SU. Course may be repeated for a maximum of 4 credit hours.

**VBMS 7870 ADVANCED VETERINARY OPHTHALMOLOGY: OPHTHALMIC MEDICINE (3).** LEC. 3. Advanced ophthalmology with emphasis on diagnosis, pathophysiology and treatment of ocular diseases of domestic animals. DVM degree or equivalent.

**VBMS 7880 ADVANCED VETERINARY OPHTHALMOLOGY: OPHTHALMIC MEDICINE (3).** LEC. 1, LAB. 6. Pr., VBMS 7870. Advanced ophthalmology with emphasis on ophthalmic surgery.

**VBMS 7890 ADVANCED VETERINARY OPHTHALMOLOGY: OPHTHALMIC BASIC SCIENCES (3).** LEC. 3. Advanced ophthalmology with emphasis on diagnosis, pathophysiology and treatment of ocular diseases of domestic animals. DVM degree or equivalent.

**VBMS 7910 ADVANCED EQUINE CRITICAL CARE I (2).** LEC. 2. Introduce students to the mechanisms of disease, state of the art knowledge/procedures & treatment of conditions relevant to the critical equine patient.

**VBMS 7920 ADVANCED EQUINE CRITICAL CARE II (2).** LEC. 2. Introduce students to the mechanisms of disease, state of the art knowledge/procedures & treatment of conditions relevant to the critical equine patient.

**VBMS 7950 GRADUATE SEMINARS IN VETERINARY CLINICAL SCIENCES (1).** SEM. 1. SU. Presentation of thesis research. DVM degree Departmental approval.

**VBMS 7970 RESEARCH PROBLEMS IN BIOMEDICAL SCIENCES (1-5).** RES. Research problems for graduate students, under supervision of faculty, in variety of specialized disciplines related to the biomedical sciences. Faculty approval. Course may be repeated for a maximum of 15 credit hours.

**VBMS 7980 NON-THESIS PROJECT (1-3).** LEC. 3. SU. Non-thesis project, to be determined by faculty advisor and student's graduate advisory committee. DVM degree Departmental approval.

**VBMS 7990 RESEARCH AND THESIS IN BIOMEDICAL SCIENCES (1-10).** MST. Credit to be arranged. Course may be repeated with change in topics.

**VBMS 8950 BIOMEDICAL SCIENCES SEMINAR (1).** SEM. 1. SU. Recent advances in biochemistry, cell biology and molecular biology will be critically presented and discussed by graduate faculty and students.

**VBMS 8990 RESEARCH AND DISSERTATION (1-10).** DSR. Course may be repeated with change in topics.

### VETERINARY MEDICINE (VMED)

**VMED 5000 ORIENTATION TO VETERINARY MEDICINE (0).** SEM. 1. SU. Overview of organized veterinary medicine, history of the profession, professional responsibilities and privileges, and career opportunities within the profession.

**VMED 5010 VETERINARY MEDICAL ETHICS (1).** LEC. 1. Ethical issues confronting veterinarians in every phase of the profession.

**VMED 5012 PROBLEM-SOLVING IN VETERINARY MEDICINE I (1).** LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

**VMED 5020 VETERINARY MEDICINE AND THE LAW (1).** LEC. 1. Laws relating to the veterinary profession, public policies, and government regulations.

**VMED 5022 PROBLEM-SOLVING IN VETERINARY MEDICINE II (1).** LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

**VMED 5030 VETERINARY PUBLIC HEALTH (4).** LEC. 4. Zoonoses, principles of epidemiology and food hygiene, role of veterinarian in public health.

**VMED 5032 PROBLEM SOLVING IN VETERINARY MEDICINE III (1).** LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

**VMED 5042 PROBLEM SOLVING IN VETERINARY MEDICINE IV (1).** LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

**VMED 5052 PROBLEM SOLVING IN VETERINARY MEDICINE V (1).** LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

**VMED 5110 PHYSIOLOGY I (5).** LEC. 5. Cellular, Cardiovascular, Renal, and Respiratory Physiology.

**VMED 5111 VETERINARY ANATOMY I (SMALL ANIMAL) (4).** LAB. 12. Basic concepts of body structure and small animal gross anatomy with veterinary medical applications. Credit will not be given for both VMED 5111 and VBMS 6111.

**VMED 5120 PHYSIOLOGY II (4).** LEC. 4. Gastrointestinal Physiology, Metabolism, Endocrinology, and Reproductive Physiology.

**VMED 5121 VETERINARY ANATOMY II (3).** LAB. 9. In-depth study of the gross anatomy of the ox, horse, and minor species with inclusion of clinical relevance.

**VMED 5130 CELL PHYSIOLOGY AND MOLECULAR GENETICS (2).** LEC. 2. Introduction to advanced concepts in the mechanisms regulating cell function and molecular biology and genetics.

**VMED 5131 BASIC MICROANATOMY/DOMESTICS ANIMALS (3).** LEC. 1, LAB. 4. Functional comparative microstructure of cells, basic tissues, cardiovascular system, urinary system, skeleton and osteogenesis, respiratory system, and blood of domestic animals.

**VMED 5141 ORGANANOLOGY OF DOMESTIC ANIMALS (2).** LAB. 4. Comparative microstructure of the digestive system, lymphoid system, endocrine system, integumentary system, reproductive system, and placentation of domestic animals.

**VMED 5150 DIAGNOSTIC IMAGING (2).** LEC. 1, LAB. 1. Basic radiographic and ultrasonographic physics; introduction to computed tomography, magnetic resonance imaging, and nuclear imaging.

**VMED 5151 VETERINARY NEUROSCIENCES (5).** LEC. 4, LAB. 2. Gross and microscopic morphology and physiology of the peripheral and central nervous systems.

**VMED 5180 VETERINARY ETHOLOGY (1).** LEC. 1. Basic concepts of ethology and other approaches to animal behavior, introduce diagnostic and treatment methods, discuss relevant cases.

**VMED 5200 VETERINARY PARASITOLOGY I (3).** LEC. 2, LAB. 2. Platyhelminthes, trematodes, and nematodes of domestic animals.

**VMED 5210 VETERINARY PARASITOLOGY II (2).** LEC. 2, LAB. 2. Arthropods, protozoa, helminths, and acanthocephalans of domestic animals. Parasiticides.

**VMED 5220 PRINCIPLES OF VETERINARY PATHOLOGY (3).** LEC. 2, LAB. 2. General principles of pathology and mechanisms of disease processes affecting animals.

**VMED 5230 VETERINARY CLINICAL PATHOLOGY (3).** LEC. 3. Laboratory test principles and results interpretations in evaluation of hematopoietic, coagulation, hepatic, renal, gastrointestinal, acid/base and fluid status of animals.

**VMED 5240 PRINCIPLES OF VETERINARY IMMUNOLOGY (3).** LEC. 3. Principles underlying the immune system's ability to protect animals from disease and mechanisms by which immune responses contribute to disease.

**VMED 5250 PRINCIPLES OF VETERINARY INFECTIOUS DISEASE (4).** LEC. 3, LAB. 2. Principles of infectious agents and their pathogenic attributes, infectious diseases of animals, and mechanisms of antimicrobial agents.

**VMED 5260 VETERINARY PHARMACOLOGY (3).** LEC. 3. Overview of drugs relevant to veterinary practice; pharmacodynamics, pharmacokinetics, clinical application.

**VMED 5301 PHYSICAL DIAGNOSES OF LARGE AND SMALL ANIMALS (2).** LEC. 1, LAB. 2. Basic approach to physical examination of large and small animals.

**VMED 5310 INTRODUCTION TO SURGERY (1).** LAB. 1. Basics of surgical instruments, aseptic technique, wound healing, approaches and management of surgery of abdomen and thorax, fluid and nutritional needs of perioperative patients.

**VMED 5311 SURGICAL PRACTICUM (2).** PRA. 4. Aseptic technique, instrument handling, suture patterns, surgical ties, anesthetic administration/monitoring, surgical incision/tissue handling, wound closure, postoperative patient management.

## Veterinary Medicine (VMED)

**VMED 5320 CLINICAL VETERINARY NUTRITION (2).** LEC. 2. Nutritional requirements and feeding programs of cats, dogs, horses, cows, sheep, goats, llamas and some exotic pets.

**VMED 5330 MULTISPECIES MEDICINE (3).** LEC. 3. Cause, pathology, diagnosis, and control of common diseases of poultry, companion birds, small mammal, fish, amphibian, and reptile pets.

**VMED 5340 EMERGENCY MEDICINE AND CRITICAL CARE (2).** LEC. 2. Emergency presentations, critical care management.

**VMED 5350 VETERINARY TOXICOLOGY (3).** LEC. 2, LAB. 2. Poisons and poisonous plants affecting large and small animals, chemical properties, signs, lesions, diagnosis, treatment.

**VMED 5360 PRODUCTION PREVENTATIVE MEDICINE (3).** LEC. 3. Principles of disease prevention and maximization of production application of food safety principles.

**VMED 5370 ONCOLOGY (1).** LEC. 1. Diagnostic and therapeutic measures used to manage animals with oncologic diseases.

**VMED 5502 CURRENT TOPICS IN VETERINARY MEDICINE (1).** LEC. 1. SU. Emerging topics in veterinary medicine, current literature. Course may be repeated for a maximum of 15 credit hours.

**VMED 5510 HEMOLYMPH/INTEGUMENTARY SYSTEM (4).** LEC. 4. Diagnosis, treatment and prevention of diseases affecting the integumentary and hemolymphatic systems.

**VMED 5520 CARDIOVASCULAR SYSTEM (2).** LEC. 2. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment and prevention of diseases affecting the cardiovascular system.

**VMED 5530 RESPIRATORY SYSTEM (3).** LEC. 3. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment and prevention of diseases affecting the respiratory system.

**VMED 5540 ALIMENTARY SYSTEM (5).** LEC. 5. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment and prevention of diseases affecting the alimentary system.

**VMED 5550 URINARY SYSTEM (2).** LEC. 2. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment, and prevention of disease affecting the urinary system.

**VMED 5560 ENDOCRINE SYSTEM (2).** LEC. 2. Pathophysiology, pathologic lesions, diagnosis, treatment and prevention of diseases of the endocrine system.

**VMED 5570 REPRODUCTIVE SYSTEM (5).** LEC. 5. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment; and prevention of diseases of the reproductive system.

**VMED 5580 NERVOUS SYSTEM (2).** LEC. 2. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment, and prevention of diseases affecting the nervous system.

**VMED 5590 MUSCULOSKELETAL SYSTEM (3).** LEC. 3. Pathophysiology; pathologic, radiographic and ultrasonographic lesions; diagnosis; treatment; and prevention of diseases affecting the musculoskeletal system.

**VMED 5601 VETERINARY CLINICAL ROTATIONS (3).** LEC. 3. Clinical experiences through various specialty services in the Veterinary Medical Teaching Hospital. Course may be repeated with change in topics.

**VMED 5602 RESEARCH PROBLEMS IN BIOMEDICAL SCIENCE (1-10).** RES. SU. Research problems in a variety of specialized disciplines for veterinary students and advanced undergraduates. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

**VMED 5611 VETERINARY CLINICAL ROTATIONS-ELECTIVES (3).** CLN. 3. SU. Clinical experiences through various specialty services in the Veterinary Medical Teaching Hospital. Course may be repeated for a maximum of 9 credit hours.

**VMED 5650 CANINE SPORTS MEDICINE AND REHABILITATION (1).** LEC. 1. SU. Activities, requirements, and disorders encountered in canine athletes; role of veterinarian in care and rehabilitation; current research.

**VMED 5660 LABORATORY ANIMAL MEDICINE (1).** LEC. 1. Husbandry, nutrition, handling, and diseases of common laboratory animals.

**VMED 5680 POCKET PET MEDICINE (1).** LEC. 1. SU. Diseases, treatment, restraint, examination, sample collection in rabbits, Guinea pigs, hamsters, rats, mice, and ferrets.

**VMED 5690 REPTILE AND AMPHIBIAN MEDICINE (1).** LEC. 1. SU. Diseases, treatment, husbandry, handling, restraint, examination, sample collection in reptiles and amphibians.

**VMED 5702 WRITING REINFORCEMENT FOR THE HEALTH PROFESSIONAL (1).** LEC. 1. SU. Written and oral presentation of project emphasizing health promotion and disease prevention in the 21st century. Departmental approval.

**VMED 5710 PRACTICE MANAGEMENT (1).** LEC. 1. SU. Fundamental principles of effective client, personnel, practice and business management for the veterinarian.

**VMED 5720 DISASTER MEDICINE FOR VETERINARIANS (2).** LEC. 2. SU. Role of the veterinarian in responding to natural and man-made disasters.

**VMED 5721 APPLIED ANATOMY I (1).** LAB. 3. Pr., VMED 5111. Detailed anatomical basis for small animal surgical approaches.

**VMED 5730 AVIAN AND EXOTIC ANIMAL PHYSIOLOGY (1).** LEC. 1. Pr., VMED 5110 and VMED 5120. Homeostatic physiologic mechanisms of birds, reptiles, fish, and other species, differences from mammals emphasized.

**VMED 5731 APPLIED ANATOMY II (1).** LAB. 3. Pr., VMED 5111. Detailed anatomical basis for small animal diagnostics and therapeutics.

**VMED 5740 APPLIED COMPANION ANIMAL BEHAVIOR (2).** LEC. 2. Pr., VMED 5300 and VMED 5180. Diagnosis, treatment and client education on selected behavior problems in companion animals.

**VMED 5741 EQUINE LIMB JOINTS AND FOOT (1).** LAB. 3. SU. Pr., VMED 5121. A study of the functional anatomy of the joints and foot of the horse fore and hind limbs.

**VMED 5750 DIAGNOSTIC VETERINARY ULTRASONOGRAPHY (2).** LEC. 1, LAB. 2. Pr., VMED 5121 and VMED 5150. Basic physics, instrumentation, and scanning techniques of ultrasonography. Normal sonographic anatomy correlated with the cross-sectional anatomy of body structures and organs.

**VMED 5760 ADVANCED CLINICAL OPHTHALMOLOGY (1).** LEC. 1. SU. Pr., VMED 5590 and VMED 5311 and VMED 5900. Strategies and methods of diagnosis, treatment and prevention of diseases of the eye in large and small animals.

**VMED 5770 ADVANCED VETERINARY DERMATOLOGY (1).** LEC. 1. SU. Pr., VMED 5510. Clinical dermatology in a case-based format.

**VMED 5780 ADVANCED SMALL ANIMAL ONCOLOGY (1).** LEC. Pr., VMED 5370. Current diagnostic and therapeutic methods used in small animal oncology.

**VMED 5790 SMALL ANIMAL WOUND MANAGEMENT AND SURGERY (1).** LEC. 1. SU. Pr., VMED 5510 and VMED 5310. Wound management, reconstructive/salvage surgery.

**VMED 5800 APPLIED SMALL ANIMAL NEUROLOGY (1).** LEC. 1. SU. Pr., VMED 5580. Clinical management of commonly occurring neurologic diseases of small domestic animals.

**VMED 5801 PRECEPTORSHIP (3).** LAB. 20. SU. Training in a practice situation under the direct supervision of a veterinarian or, under certain conditions, in specialized programs. Approval of Preceptorship Committee.

**VMED 5820 ADVANCED REPRODUCTIVE TECHNIQUES (2).** LEC. 2. Pr., VMED 5120. Techniques associated with embryo transfer, fetal sexing, in-vitro fertilization, applied and experimental techniques in cattle emphasized.

**VMED 5830 VETERINARY MEDICINE AND THE PUBLIC (1).** LEC. 1. SU. News events related to veterinary medicine and the role of the veterinarian in public education and public policy.

**VMED 5840 WILDLIFE DISEASES (2).** LEC. 2. SU. Control and role of veterinarian in prevention of disease in wild animals, specifically wildlife indigenous to U.S.

**VMED 5850 CAGE BIRD PRACTICE (1).** LEC. 1. SU. Techniques for handling, examination, sample collection, diseases, and nutrition of cage birds.

**VMED 5860 ADVANCED TECHNIQUES IN POPULATION MEDICINE (1).** LEC. 1. SU. Techniques for investigation of disease problems in populations with emphasis on computer software specialized for outbreak investigation and disease mapping.

**VMED 5870 AQUARIUM FISH MEDICINE (1).** LEC. 1. Prevention, diagnosis, and treatment of freshwater and marine aquarium fish diseases.

**VMED 5880 EQUINE REPRODUCTION (1).** LEC. 1. Reproductive physiology, endocrinology, breeding soundness evaluation, breeding management and advanced technologies.

**VMED 5890 BEEF PRODUCTION/COMPUTER RECORD SYSTEM (1).** LAB. 1. Pr., VMED 5243 and VMED 5360. Hands-on experience with computerized record systems for beef cattle operations.

**VMED 5930 SPECIAL SENSES (1).** LEC. 1. Pathophysiology, pathologic lesions, diagnosis, treatment and prevention of diseases affecting eyes, ears and nose.

**VMED 5940 INTRODUCTION TO ANESTHESIA (3).** LEC. 2, LAB. 2. Principles and practices of veterinary anesthesia in large and small animals.

**VMED 5950 CLINICOPATHOLOGIC CONFERENCE (0).** SEM. 1. SU. Oral presentation of veterinary clinical case or case material.

**VMED 5960 SPECIAL PROBLEMS (1).** LEC. 1. SU. Introduction to veterinary literature, evaluation of recent articles, references, reports on veterinary medicine.

**VMED 5995 VETERINARY CLINICAL ROTATIONS - EXTERNSHIPS (0).** CLN. SU. Successful completion of didactic veterinary curriculum. Students will participate in clinical rotations including specialty rotations.

**Women's Studies (WMST)**

Dr. Ruth Crocker - 844-6647

**WMST 2100 INTRODUCTION TO WOMEN'S STUDIES (3).** LEC. 3. Interdisciplinary examination of the definitions of gender and impact of culture on the construction of gender. Diversity of representation, reflecting upon the histories of woman from a local and global perspective will be the keynote of the course.

**WMST 3900 DIRECTED READINGS IN WOMEN STUDIES (1-3).** LEC. Directed study in an area of special interest. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

**WMST 5980 FEMINIST THEORY (3).** LEC. 3. Pr., WMST 2100. Perspectives on feminist theory, with emphasis on intersections of race, class, sexual orientation, and gender as they affect women's position in culture.

**WMST 6980 FEMINIST THEORY (3).** LEC. 3. Pr., WMST 2100. Perspectives on feminist theory, with emphasis on intersections of race, class, sexual orientation, and gender as they affect women's position in culture.

**WMST 7910 TEACHING PRACTICUM (1).** LEC. 1. Pr., (WMST 5980 or WMST 6980). Intended women's studies minor. Feminist pedagogical theory and practice. Course may be repeated for a maximum of 2 credit hours.

# Faculty

The following is a list of full-time teaching faculty at Auburn University by department. The asterisk before the name indicates the individual is a member of the Graduate Faculty. The date indicates the year of first appointment to any position in the institution.

## ACCOUNTING

- \* **ALDERMAN, CHARLES W.**, Torchmark Professor, 1977. DBA, Tennessee; MBA, BS, Auburn
- \* **BRANDON, DUANE M.**, Assistant Professor, 2003. PhD, Virginia Tech; MAc, Virginia Tech; BS, Christopher Newport
- MURPHY, AMY BETH**, Director of Graduate Programs, 1992. MAc, BSBA, Auburn
- \* **CLARK, RONALD L.**, Professor, 1995. PhD, Alabama; MBA, Tennessee-Nashville; BS, Western Kentucky
- COCHRAN, ROBERT H.**, Instructor, 2008. JD, Cumberland; MA, Webster College; BSBA, Auburn
- COOK, JAMES P.**, Assistant Dean and Instructor, 1988. MAc, BSBA, Auburn
- \* **GDWIN, NORMAN H.**, Associate Professor & Director, 1996. PhD, Michigan State; BS, Auburn
- \* **JONES, JEFFERSON P.**, Associate Professor, 1997. PhD, Florida State; MAc; BS, Auburn
- \* **KEY, KIMBERLY G.**, Associate Professor, 1999. PhD, Michigan State; MS, Wisconsin-Milwaukee; BBA, Iowa
- \* **LONG, JAMES H.**, Assistant Professor, 2009. PhD, Virginia Tech; Mac, BSBA, Auburn
- \* **LORAAS, TINA M.**, Assistant Professor, 2004. PhD, Texas A & M; MAc, BSBA, Auburn
- \* **MCCLAIN, GUY**, Assistant Professor, 2007. PhD, Arkansas; MAcc, Mississippi; BS, Louisiana Tech
- \* **MCLELLAND, ANDREW J.**, Assistant Professor, 2002. PhD, Texas A&M; MBA, Florida State; BBA, Florida Atlantic
- \* **MUELLER, JENNIFER M.**, Associate Professor, 2000. PhD, MAc Virginia Tech; BS, Jacksonville State
- \* **SEARCY, DEWAYNE L.**, Assistant Professor, 1992. PhD, Tennessee; M.Ac, BS, Alabama-Birmingham
- \* **STANLEY, JONATHAN D.**, Assistant Professor, 2009. PhD, MTA, BSBA, Alabama
- \* **STANWICK, SARAH D.**, Associate Professor, 1992. PhD, Florida State; MAc, North Carolina; BS, North Carolina-Greensboro

## AEROSPACE ENGINEERING

- \* **AHMED, ANWAR**, Professor, 1998. PhD, MS, Wichita State; BS, Peshawar
- \* **CICCI, DAVID A.**, Professor, 1987. PhD, Texas; MS, Carnegie Mellon; BS, West Virginia
- \* **COCHRAN JR, JOHN E.**, Professor and Head, 1969. JD, Jones Law; PhD, Texas; MS, BAE, Auburn
- CROUSE, GILBERT L.**, Associate Professor, 2005. PhD, MS, Maryland; BS, Wheaton
- \* **FOSTER JR, WINFRED A.**, Professor, 1974. PhD, MS, BAE, Auburn
- \* **GROSS, ROBERT S.**, Associate Professor, 1988. PhD, MS, Clemson; BS, Virginia Tech
- \* **HARTFIELD, ROY J.**, Associate Professor, 1990. PhD, MS, Virginia; BS, Southern Mississippi
- SHELTON, ANDREW B.**, Assistant Professor, 2008. PhD, Georgia Tech; MS, BAE, Auburn
- SINCLAIR, ANDREW J.**, Assistant Professor, 2005. PhD, Texas A&M; MS, BS Florida
- THUROW, BRIAN S.**, Associate Professor, 2005. PhD, MS, BS, Ohio State

## AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

- \* **ADRIAN JR, JOHN L.**, Professor, 1974. PhD, Tennessee; MS, BAA, Auburn
- \* **BAILEY JR, L. CONNER**, Professor, 1985. PhD, Cornell; MA, Ohio; BS, Southern Oregon

- \* **DUFFY, PATRICIA A.**, Professor, 1985. MA, Auburn; PhD, Texas A&M; BA, Boston College
- \* **FIELDS, DEACUE**, Associate Professor and Extension Specialist, 2002. PhD, LSU; MS, Missouri; BS, Southern
- FOWLER, SAMUEL R.**, Associate Professor and Extension Associate Director, Mississippi State 1980
- \* **GOODMAN, W. ROBERT**, Associate Professor and Extension Specialist, 1990. PhD, Tennessee; MS, BS, Auburn
- EVANS, DENNIS A.**, Professor and Extension Specialist, Ed.D., Louisiana State
- \* **HARDY JR, WILLIAM E.**, Professor, 1972. JD, Jones Law; PhD, MS, BS, Virginia Tech
- \* **HARTARSKA, VALENTINA**, Associate Professor, 2002. PhD, MA, Ohio St.; BA, U. of Natl. & Internatl. Economy
- \* **HITE, DIANE**, Professor, 2002. PhD, MA, Ohio State; BFA, Rhode Island School of Design
- \* **JOLLY, CURTIS M.**, Alumni Professor and Chair, 1980. PhD, LSU; MS, Auburn; BS, Tuskegee
- \* **KINNUCAN, HENRY W.**, Professor, 1983. PhD, Minnesota; MS, Minnesota-St. Paul; BS, Illinois
- \* **MOLNAR, JOSEPH J.**, Professor, 1976. PhD, Iowa State; MA, BA, Kent State
- \* **NADOLNYAK, DENIS**, Assistant Professor, 2003. Ohio State
- \* **NELSON, ROBERT G.**, Professor, 1989. PhD Texas A&M; MS, Auburn; BS, Oregon State
- \* **NOVAK, JAMES L.**, Professor and Extension Specialist, 1985. PhD, Clemson; MS, BS, New Hampshire
- \* **PATTERSON, PAUL M.**, Professor & Associate Dean for Instruction, 2009. PhD, MS, Purdue; BS Auburn
- \* **PREVATT, JAMES W.**, Professor and Extension Specialist, 1991. PhD, Clemson; MS, BS, Florida
- RUNGE, MAX W.**, Extension Program Associate, 1995. MBA, BS, Auburn; MS, Troy State
- \* **SIMPSON III, EUGENE H.**, Professor and Extension Specialist, 1983. PhD, BS, Mississippi State
- \* **TAYLOR, C. ROBERT**, Alfa Eminent Scholar and Professor, 1988. PhD, Missouri; MS, Kansas State; BS, Oklahoma State
- \* **THOMPSON, HENRY**, Professor, 1987. PhD, Houston
- \* **WILSON, NORBERT L.**, Associate Professor, 1999. PhD, California-Davis; MS, London; BSA, Georgia
- \* **WOROSZ, MICHELLE**, Assistant Professor, Michigan State, 2006

## AGRICULTURE - ADMINISTRATION

- BATCHELOR, WILLIAM D.**, Dean and Professor, 2010. PhD, Florida; MS, BS, Georgia
- \* **PATTERSON, PAUL M.**, Professor & Associate Dean for Instruction, 2009. PhD, MS, Purdue; BS Auburn
- \* **LIU, ZHANJIANG**, Professor & Associate Dean for Research, 2008. PhD, MS, Minnesota; BS, Northwestern Agricultural
- \* **MOLNAR, JOSEPH J.**, Professor and Coordinator, International Agriculture, 2006. PhD, Iowa State; MA, BA, Kent State

## AGRONOMY & SOILS

- BALL, DONALD M.**, Professor and Extension Specialist, 1976. PhD, MS, Auburn; BS, Western Kentucky
- \* **BRANSBY, DAVID I.**, Professor, 1987. PhD, Natal; MS, South Africa; MS, Missouri
- \* **BRANTLEY, EVE F.**, Assistant Professor and Extension Specialist, 2009. PhD, Auburn; MS Clemson; BS Berry College
- BURMESTER, CHARLES H.**, Agronomist, 1980. MS, BS, Auburn
- DELANEY, DENNIS P.**, Extension Specialist, 1980. PhD, Auburn; MS, Clemson; BS, Michigan State

## Faculty

- \* **ENLOE, STEPHEN F.**, Assistant Professor and Extension Specialist, 2008. BS, NC State; MS, Colorado State; PhD, California
- \* **FENG, YUCHENG**, Professor, 1998. PhD, MS, Penn State; BS, Beijing Agricultural
- \* **GUERTAL, ELIZABETH A.**, Professor, 1993. PhD, Oklahoma St.; MS, BS, Ohio St.
- \* **HAN, DAVID Y.**, Associate Professor and Extension Specialist, 2000. PhD, Ohio State; MS, AB, Cornell
- \* **HOWE, JULIE A.**, Assistant Professor, 2007. PhD, Wisconsin-Madison; MS, BS Texas A&M
- \* **HULUKA, GOBENA**, Associate Professor, 2002. PhD, MS, Auburn; BS, Ethiopia
- \* **MASK, PAUL L.**, Professor, 1982. PhD, Ohio State; MS, Georgia; BS, Georgia State
- \* **MITCHELL JR, CHARLES C.**, Professor and Extension Specialist, 1984. PhD, Florida; MS, Auburn; BS, Birmingham Southern
- \* **MCELROY, J. SCOTT**, Associate Professor, 2008. PhD NC State; MS, BS Auburn
- \* **MONKS, CHARLES D.**, Professor and Extension Specialist, 1993. PhD Georgia; MS Arkansas; BS Middle Tennessee State
- \* **MOSJIDIS, JORGE A.**, Professor, 1985. PhD, California-Riverside; BAg, Chile
- \* **ODOM, JOHN W.**, Associate Professor, 1977. PhD, Purdue; MS, BS, Tennessee
- \* **ORTIZ, BRENDA**, Assistant Professor and Extension Specialist, 2008. PhD Georgia; BS Universidad Nacional de Colombia-Universidad del Valle
- \* **PATTERSON, MICHAEL G.**, Professor and Extension Specialist, 1980. PhD, MS, BS, Auburn
- \* **SHANNON, DENNIS A.**, Professor, 1990; PhD, MS, Cornell; BS, McGill
- \* **SHAW, JOEY N.**, Alumni Professor, 1998. PhD, Georgia; MS, Maryland; BS, James Madison
- \* **TOUCHTON, JOSEPH T.**, Professor and Head, 1980. PhD, Illinois; MS, BSA, Georgia
- \* **TWARAKAVI, NAVIN K.C.**, Assistant Professor, 2008. PhD, MS Utah State; B Tech S.V. University, India
- \* **VAN SANTEN, EDZARD**, Professor, 1988. PhD, MSc, Wisconsin
- \* **WALKER, ROBERT H.**, Professor, 1974. PhD, MS, BS, Mississippi State
- \* **WEAVER, DAVID B.**, Professor, 1981. PhD, Purdue; MS, BSA, Georgia
- \* **WEHTJE, GLENN R.**, Professor, 1981. PhD, Nebraska, MS, N. Dakota St; BS Washington State
- \* **WOOD, C. WESLEY**, Professor, 1990. PhD, Colorado State; MS, BS, Mississippi State

### ANATOMY, PHYSIOLOGY & PHARMACOLOGY

- \* **AKINGBEMI, BENSON**, Associate Professor, 2004. PhD, MSc, DVM, Ibadan
- \* **BARTOL, FRANK F.**, Associate Dean and Professor, 1983. PhD, MS, Florida; BS Virginia Tech
- \* **BOOTHE, DAWN**, Professor, 2003. D.V.M, MS, PhD, Texas A&M
- \* **BRADEN, TIMOTHY D.**, Associate Professor, 1994. PhD, Colorado State; BS, Oklahoma State
- \* **COLEMAN, ELAINE.**, Associate Professor, 2001. PhD, MS, Auburn; DVM, Ohio State
- \* **FOR ADORI, CHAD D.**, Assistant Professor, 2010. PhD, Cincinnati; BS, Muskingum
- \* **GILLETTE, ROBERT L.**, Associate Research Professor and Director, 1997. MSE, Kansas; DVM, BS, Kansas State
- \* **JOSEPHSON, ELEANOR M.**, Associate Professor, 2000. PhD, DVM, Auburn; BS, Louisville
- \* **JUDD, ROBERT L.**, Associate Professor, 1998. PhD, Northeast Louisiana; BA, Hendrix
- \* **KEMPPAINEN, BARBARA W.**, Professor, 1986. PhD, Georgia; MS, Ohio State; BS, Ashland

- \* **KEMPPAINEN, ROBERT J.**, Professor, 1982. PhD, Georgia; DVM, Michigan State
- \* **MANSOUR, MAHMOUD**, Associate Professor, 2006. PhD. Liverpool (UK), DVM, Khartoum
- \* **MARTIN, DOUGLAS**, Associate Professor, 2004. PhD, BS, Auburn
- \* **MORRISON, EDWARD E.**, Professor and Head, 1990. PhD, MS, Kansas State; BS, Massachusetts
- \* **MYERS III, LAWRENCE J.**, Associate Professor, 1982; PhD, Oklahoma St., DVM, Mississippi St.
- \* **SARTIN JR, JAMES L.**, Professor, 1982. PhD, Oklahoma State; MA, MS, Auburn
- \* **SCHWARTZ, DEAN D.**, Associate Professor, 1993. PhD, Houston; BS, Stonehill
- \* **SOROKVLOVA, IRYNA B.**, Research Professor, 2007. PhD, Ukrainian Academy Sciences, BS, MS, Kiev State
- \* **STEISS, JANET E.**, Professor, 2004. MSPT, UAB, PhD Georgia; DVM, Guelph
- \* **TAO, YA-XIONG**, Associate Professor, 2004. PhD, Chinese Acad Science; MSc, Zhongshan
- \* **VODYANOY, VITALY**, Professor, 1989. PhD, Physical Tech, Agro Physical Research Institute
- \* **WILHITE, DEWEY R.**, Laboratory Coordinator, 2007. PhD, Louisiana State, MS, Brigham Young, BA, Alabama
- \* **ZHONG, JUMING**, Associate Professor, 2001. PhD, Missouri; DVM, Southwest Chengdu, P.R.China

### ANIMAL SCIENCES

- \* **BERGEN, WERNER G.**, Professor, 1995. MS, BS, PhD, Ohio State
- \* **BRANDEBOURG, TERRY**, Assistant Professor, 2008 BS, Purdue; PhD Oregon State
- \* **BRATCHER, CHRISTY**, Assistant Professor, 2008. BS, MS Florida; PhD Missouri
- \* **CHIBA, LEE M.**, Associate Professor, 1990. MS, BS, PhD, U Nebraska
- \* **COLEMAN, DALE A.**, Associate Professor, 1984. PhD, MS, West Virginia; BS, Colorado State
- \* **CUMMINS, KEITH A.**, Professor, 1980. PhD, Virginia Tech; MS, BS, Washington State
- \* **EBERT, ROBERT A.**, Extension Specialist, 1985. MEd, Auburn; BS, Kansas State
- \* **GREENE, L. WAYNE**, Professor and Head, 2005, PhD, Virginia Tech; MS, BS, North Carolina State
- \* **KRIESE-ANDERSON, LISA ANN**, Associate Professor and Extension Specialist, 1993. BS, Cornell; PhD, Georgia; MS, Kansas State
- \* **KUHLERS, DARYL L.**, Professor, 1978. BS, Iowa State; PhD, MS, Wisconsin
- \* **MCCALL, CYNTHIA ANN**, Professor and Extension Specialist, 1989. BS, Tennessee; PhD, MS, Texas A&M
- \* **MCCASKEY, THOMAS**, Professor, 1967. PhD, MS, Purdue; BS, Ohio
- \* **MULVANEY, DONALD R.**, Associate Professor, 1983. PhD, MS, Michigan State; BS, Illinois
- \* **MUNTIFERING, RUSSELL B.**, Professor, 1990. PhD, Arizona; MS, BS, California-Davis
- \* **OWSLEY, W. FRANK**, Associate Professor and Extension Specialist, 1990. PhD, Texas Tech; MS, BS, Texas A&M
- \* **RANKINS JR, DARRELL L.**, Professor, 1989. PhD, MS, New Mexico State; BS, Illinois
- \* **RODNING, SOREN P.**, Assistant Professor and Extension Specialist, 2006. MS, DVM, BS, Auburn
- \* **SCHMIDT, STEPHEN P.**, Professor, 1976. PhD, MS, Wisconsin; BSA, Idaho
- \* **WAGNER, ELIZABETH L.**, Assistant Professor, 2006. PhD, MS, Texas A&M; BS, Wisconsin-River Falls
- \* **WOWER, JACEK**, Professor, 1997. MS, PhD, Mickiewicz

## ARCHITECTURE

- \* **BARNETT, ROD**, Associate Professor, 2006. MS, PhD, Auckland; BS, Waikato
- BARTHEL, ELENA**, Assistant Professor, 2010. Ph.D, Florence (Italy); Diploma Laureate Arch, Florence (Italy)
- BURLESON, JAMES D.**, Associate Professor, 1986. MTheo, Austin Seminary; MArch, Rice; BED, Texas A&M
- DAGG, CHRISTIAN**, Associate Professor, 2000. MArch, Harvard; BS, Northeastern
- EMIG, JOSHUA**, Visiting Assistant Professor, 2009. MArch, Rensselaer; BA, Wyoaming College
- FAUST, ROBERT L.**, Professor, 1968. BArch, Oklahoma
- \* **FINN, J. SCOTT**, Associate Professor, 1987. MArch, Yale; AB Princeton.
- FREEAR, ANDREW**, Professor, 1999. AA Diploma, Arch. Assoc, London; BArch, Westminster,
- GARMAZ, MAGDALENA**, Associate Professor, 1990. Dipl., Zagreb; MArch, Cincinnati
- \* **HILL, DAVID**, Assistant Professor, 2005, MLA, Virginia; MArch, Virginia; BS, Georgia Tech
- \* **HINSON, DAVID**, Associate Professor and School Head, 1997; MArch, Pennsylvania; BArch, BS, Auburn
- HUDGENS, RICHARD**, Visiting Instructor, 1994. BArch, Auburn
- KEYVANIAN, CARLA**, Assistant Professor, 2009. PhD, MS Arch Studies, MIT; BArch, IUAC (Italy)
- KRUMDIECK, ALEX**, Visiting Instructor, 2010. MArch, Georgia Tech; BArch, Auburn
- \* **LEBLEU, CHARLENE**, Associate Professor, 2003. MLA, MCP Auburn, BS Florida
- LEAVELL, MATT**, Visiting Instructor, 2010. MS Urban Planning, Columbia; BArch, Auburn
- MARGETTS, JAQUELINE**, Visiting Instructor, 2010. M Philosophy in Planning, Auckland (NZ); BHort Massey (NZ)
- MILLER, JUSTIN**, Assistant Professor, 2008. March, Harvard; BArch, BIA, Auburn
- \* **MORGAN, CHERYL E.**, Professor, 1992. MArch, Illinois, BArch, BA Auburn; AS Kennesaw
- MOORE, KEVIN**, Visiting Assistant Professor, 2010. MArch, Texas; BArch, Tulane
- \* **NAKHJAVAN, BEHZAD B.**, Professor, 1988. MArch, Washington-St. Louis; BArch, Mississippi State
- NORMAN, FREDERICK**, Visiting Instructor, 2003. MArch, Columbia
- \* **O'NEAL DAGG, REBECCA**, Interim Dean, Associate Dean for Academic Affairs and Research, Associate Professor, 1999. MArch, Harvard; BID, Auburn
- ORGEN, A. TARIK.**, Professor, 1981. MArch, Virginia; BArch, Academy Fine Arts, Istanbul
- \* **PITTARI JR, JOHN J.**, Associate Professor, 1996. PhD, Washington; MUP, CCNY; BLA, Florida
- \* **RETZLAFF, REBECCA**, Assistant Professor, 2006, PhD, Illinois; MS, Chicago Art Inst.; BS, Michigan State
- \* **ROGERS, KAREN L.**, Associate Dean for Graduate Studies and External Affairs, Associate Professor, 2007. MA, PhD Binghamton; BA, Yale
- \* **ROBINSON, P. MICHAEL**, Professor, 1996. MLA, Harvard; BArch, Kentucky
- SALVAS, RYAN**, Visiting Assistant Professor, 2010. MS Built Ecologies, BArch, Rensselaer
- SCHUMACHER, SHERI L**, Associate Professor, 1986. MFA, Cranbrook; BID, Auburn
- \* **SMITH, JAMES E.**, Associate Professor, 1997. MFA, Chicago Art Inst.; BID, Auburn
- SPROULL, ROBERT**, Visiting Assistant Professor, 2010. MArch, Rice; BArch, BCE, Auburn
- \* **ZANZOT, JOCELYN**, Assistant Professor, 1989. March, MLA, Pennsylvania; BS, SUNY
- \* **ZORR JR, PAUL A.**, Professor, 1980. MArch, BArch, Illinois Inst

## ARCHITECTURE DESIGN CONSTRUCTION - ADMINISTRATION

- \* **O'NEAL DAGG, REBECCA**, Interim Dean, Associate Dean for Academic Affairs and Research, Associate Professor, 1999. MArch, Harvard; BID, Auburn
- \* **ROGERS, KAREN L.**, Associate Dean for Graduate Studies and External Affairs, Associate Professor, 2007. MA, PhD Binghamton; BA, Yale

## ART

- BONDY, BARBARA**, Associate Professor, 2003. MFA, So. Illinois; BFA, Windsor
- COMSTOCK, ALLYSON G.**, Professor, 1988, MFA, Arizona State; BA, Occidental
- DESCHENE, WENDY**, Assistant Professor, 2006. MFA Temple; BFA, Concordia
- DE VRIES, JOYCE**, Associate Professor, 2003, PhD, MA, Illinois, BA, Calvin
- FLEMING, BARRY**, Associate Professor and Interim Chair, 1988, MFA, Tennessee; BFA, W. Kentucky
- FLOYD, KATHRYN**, Assistant Professor, 2008. PhD, Iowa; MA, Georgia; BA, Vanderbilt
- GRAHAM, MARK M.**, Professor, 1990. PhD, UCLA; MA, Penn State; BA, Penn State
- HEMARD, CHARLES J.**, Assistant Professor, 2008. MFA, Georgia; BA, Southern Mississippi
- KRTIC, ZDENKO**, Associate Professor, 1992. MFA, Cincinnati; BFA, Zagreb
- LAROUX, LEONARD**, Professor, 1985. MA, SUNY-Albany; MFA, BA, Southern Illinois
- LEWIS, JEFFREY**, Professor, 1988. MFA, MA, Iowa; BA, SUNY
- \* **LOVETT, GARNETTA L.**, Assistant Professor, 1993. MS, Long Island; BFA, Beaver
- MCNULTY, CHRISTOPHER L.**, Associate Professor. 2002. MFA, Wisconsin; BA, Lawrence
- WAGONER, GARY**, Associate Professor, 1980. MFA, Alfred, New York; BFA, Wichita State

## AVIATION AND SUPPLY CHAIN MANAGEMENT

- BOBROWSKI, PAUL M.**, Associate Professor, 2004. PhD, Indiana; MS, Purdue; BS, U.S. Air Force Academy
- DEFEE, CLIFF**, Assistant Professor, 2007, PhD. Tennessee, MBA and BBA Texas A&M
- GIBSON, BRIAN J.**, Professor, 1999. PhD, Tennessee; MBA, Wayne State; BS, Central Michigan
- \* **HAMILTON II, RAYMOND A.**, Associate Professor, 2000. DPA, Alabama; MS, LSU; BS, Air Force Academy
- HANNA, JOSEPH B.**, Professor and Chair, 1999. PhD; MA, BA, NewMexico State
- JOHNSON, RANDALL**, Assistant Professor, 2003. PhD, Ohio; MBA, BS Embry Riddle
- RANDALL, WESLEY**, Assistant Professor, 2007, PhD. North Texas, MPA Valdosta State, BS U.S. Air Force Academy
- SWAMIDASS, PAUL M.**, Professor, 1992. PhD, MBA, Washington, BE, Osmania
- UZUMERI, MUSTAFA V.**, Associate Professor, 1991. PhD, Rensselaer; MBA, York; BA, Toronto

## BIOLOGICAL SCIENCES

- \* **ARMBRUSTER, JONATHAN W.**, Alumni Associate Professor, 1998. PhD, BS, Illinois
- \* **BARBAREE, JAMES M.**, Scharnagel Professor, 1991. PhD, Georgia; MS, BS, Southern Mississippi
- \* **BEST, TROY L.**, Professor, 1996. PhD, MS, Oklahoma; BS, E. New Mexico
- BOWLING, SCOTT**, Lab Coordinator, 2003. PhD, Duke; MS, Auburn; BS, Tennessee



## Faculty

- \* **BOYD, ROBERT S.**, Professor, 1988. PhD, California-Davis; MS, BS, Cal State Poly Technic
- CHADWICK, NANETTE E.**, Associate Professor, 2004. PhD, UC Berkeley; BA, UC Santa Barbara
- COBINE, PAUL A.**, Assistant Professor, 2002. PhD, BS, Queensland
- \* **DOBSON, F. STEPHEN**, Professor, 1988. PhD, Michigan; MA, AB, UC Berkeley
- \* **DUTE, ROLAND R.**, Professor, 1982. MS, BS, Ohio State; PhD, Wisconsin
- FARRINGTON, KIRBY, J.**, Lab Coordinator, 2009. PhD, Auburn; MS, Clemson; BS, LaGrange
- \* **FEMINELLA, JOHN W.**, Professor and Chair, 1991. PhD, UC Berkeley; MS, North Texas; BS, SUNY
- FIELMAN, KEVIN**, Assistant Professor, 2006. PhD, S.Carolina; MS Delaware; BS, S.Carolina
- \* **FOLKERTS, DEBBIE R.**, Assistant Professor, 1986. PhD, Georgia; MS, BS, Auburn
- GOERTZEN, LESLIE R.**, Assistant Professor, 2004. PhD, Texas-Austin; MS, British Columbia; BS Ottawa
- \* **GUYER, CRAIG**, Professor, 1987. PhD, Miami; MS, Idaho State; BS, Humboldt State
- HALANYCH, KENNETH**, Alumni Professor, 2003. PhD, Texas; BS, North Carolina
- HANSEN, CURTIS**, Curator, 2008. MS, Brigham Young; BS, Utah
- HELMS, BRIAN S.**, Collections Manager, 2008. PhD, Auburn; MS, Appalachian State; BS, North Carolina State
- HERMANN, SHARON M.**, Visiting Assistant Professor, 2001. PhD, Illinois-Chicago; MA, BA Iowa
- \* **HENRY, RAYMOND P.**, Professor, 1983. PhD, Texas; MS, BS, William & Mary
- \* **HILL, GEOFFREY**, Professor, 1993. PhD, Michigan; MS, New Mexico; BS, Indiana
- HOOD, WENDY R.**, Assistant Research Professor, 2007. PhD, MA, Boston; BA, UC Santa Cruz
- KEARLEY, MATTHEW**, Lab Coordinator, 2003. MS, BS, Auburn
- \* **KEMPF, STEPHEN C.**, Associate Professor, 1985. PhD, Hawaii; BS, Case Institute of Technology
- LILES, MARK R.**, Assistant Professor, 2005. PhD, Northwestern; BS, Tulane
- \* **LISHAK, ROBERT S.**, Associate Professor, 1976. PhD, Ohio State; BA, Seton Hall
- \* **LOCY, ROBERT D.**, Professor, 1991. PhD, Purdue; AB, Defiance
- MCVAY, CATHERINE**, Lab Coordinator, 2004. PhD Texas Tech; MS, BS Auburn
- \* **MENDONCA, MARY T.**, Professor, 1997. PhD, U.C.-Berkeley; MS, Central Florida; BA, Rutgers
- \* **MILLER, MICHAEL E.**, Assistant Research Professor, 1997. PhD, Florida; MA, BA, Texas
- \* **MOSS, ANTHONY G.**, Associate Professor, 1992. PhD, Boston; BA, Johns Hopkins
- PERSON, DAVONYA**, Lab Coordinator, 2003. MS, Auburn; BS, Tuskegee
- RASHOTTE, AARON M.**, Assistant Professor, 2007. PhD, Arizona; BS, Florida State
- \* **ROBERTS, SHARON R.**, Associate Professor, 1996. PhD, UC Davis; MPH, UCLA; BA UC San Diego
- SANTOS, SCOTT R.**, Associate Professor, 2004. PhD, New York-Buffalo; BS, Hawaii
- \* **SINGH, NARENDRA**, Professor, 1989. PhD, Bombay; MS, BS, Patna
- SMITH, DANITA**, Curator, 2007. MS, BS, Auburn
- SUH, SANG-JIN**, Associate Professor, 2002. PhD, MS, Wisconsin; BA, Chicago.
- SUNDERMANN, CHRISTINE A.**, Professor, 2002. PhD, MS, Georgia, BS Iowa State
- WERENKE, DAVID**, Collections Manager, 2005. MS, BS, Auburn
- \* **WIT, LAWRENCE C.**, Associate Dean and Professor, 1975. PhD, Missouri; MS, Western Illinois; BS, Wheaton
- \* **WOOTEN, MICHAEL C.**, Professor, 1986. PhD, North Texas State; MS, BS, Memphis State
- WYSOCKA-DILLER, JOANNA**, Associate Professor, 2000. PhD, MA, Columbia, BS Hunter

## BIOSYSTEMS ENGINEERING

- \* **ADHIKARI, SUSHIL**, Assistant Professor, 2008. PhD, Mississippi State; MS, Asian Institute of Technology; BS, Tribhuvan
- DONALD JR, JAMES O.**, Professor and Extension Specialist, 1976. MS, BS, Georgia
- \* **DOUGHERTY, MARK**, Associate Professor, 2004. PhD, MS, Virginia Tech; BS, Texas Tech
- \* **FASINA, OLADIRAN O.**, Associate Professor, 2002. PhD, Saskatchewan; MSAE, BSAE, Obafemi Awolowo
- \* **FULTON, JOHN P.**, Associate Professor and Extension Specialist, 2004. PhD, MS, Kentucky; BS, Wittenberg
- \* **MCDONALD, TIMOTHY P.**, Associate Professor, 2002. PhD, Purdue; MSAE, BSAE, Clemson
- \* **SRIVASTAVA, PUNEET**, Associate Professor, 2004. PhD, Penn State; MS, Arkansas; BS, Allahabad
- \* **TAYLOR, STEVEN E.**, Professor and Head, 1989. PhD, Texas A&M; ME, BSE, Florida
- TYSON, TED W.**, Professor and Extension Specialist, 1985. MS, BSAE, Georgia
- \* **WANG, YIFEN**, Associate Professor, 2004. PhD, MBA, Washington State; MS, Washington; BS, Shanghai
- \* **YOO, KYUNG HAK**, Professor, 1983. PhD, MS, Idaho; BS, Seoul National

## BUILDING SCIENCE

- AZHAR, SALMAN**, Assistant Professor, 2006. JD, Alabama; PhD, Texas A&M; MBC, Florida; BS, Auburn
- \* **BURT, RICHARD**, Professor and School Head, 2000. PhD, Texas A&M; MS, Texas A&M
- FARROW, CHARLES B.**, Assistant Professor 2006, BSE, Duke; MSCE, Texas; MBA, Vanderbilt
- \* **HEIN, MICHAEL F.**, William A. Hunt Endowed Professor, 1987. MS, Princeton; BS, Tulane
- \* **HOLLEY, PAUL**, Bob Aderholdt Endowed Professor, 2002. MBA, Alabama; BS, Auburn
- KILLINGSWORTH JR, ROGER A.**, Associate Professor, 1985. MS, BS, Texas A&M
- \* **KRAMER, SCOTT W.**, Associate Professor, 1993. PhD, Purdue; MSCE, BCE, Auburn
- LIU, JUNSHAN**, Assistant Professor, 2003, MBC Auburn; BS, Shanghai Jiatong
- OLSEN, DARREN**, Assistant Professor, 2003. Juris Doctor, Mississippi; BS, Florida
- \* **MOUTON, JOHN C.**, John Edward Wilborn Chair, 1992. M.B.C, Florida; BS NE Louisiana
- \* **RUTH, LINDA C.**, Associate Professor, 1999. MS Auburn; BA, Tennessee
- \* **SATTINENI, ANOOP**, Associate Professor, 1996. MS, Auburn; BSE, Osmania
- SMITH, BRUCE W.**, Assistant Professor, 2004, MS, Indiana State; BS Kennesaw State
- TATUM, MARK**, Assistant Professor, 1981. BS, MS, Auburn
- TAYLOR, JAMES M.**, Associate Professor, 2006, PhD, Florida International; ME, Asian Inst. Tech; BSCE, Engr. & Tech.
- THOMPSON, MICHAEL K.**, Visiting Industry Professor, 2009, BS, Auburn
- WEISS, PETER M.**, Associate Professor, 1983. MA, Cornell; BS, Arizona; BA, Iowa State
- \* **WILLIAMS, JAMES S.**, Professor, 1982. MS, Clemson; BS, Toledo
- ZABEL, WILLIAM H.**, Visiting Assistant Professor, 2010, MS, Florida, BS, Wisconsin-Platteville

## BUSINESS - ADMINISTRATION

- HARDGRAVE, BILL C.**, Dean, 2010. PhD, Oklahoma State; MBA, Missouri State; BS, Arkansas Tech
- COOK, JAMES P.**, Assistant Dean, 1988. MAc, BS, Auburn
- \* **MITRA, AMITAVA**, Associate Dean and Professor (Management), 1979. PhD, Clemson; MS, Kentucky; BT, DIIT, Indian Inst. Tech

## CHEMICAL ENGINEERING

- \* **ASHURST, WILLIAM ROBERT**, Associate Professor, 2004. PhD, California, Berkeley; BS, Auburn
- \* **BYRNE, MARK E.**, Daniel F. and Josephine Breeden Associate Professor, 2003. PhD, MS, Purdue; BS Carnegie Mellon
- \* **CHAMBERS, ROBERT P.**, Professor, 1976. PhD, California-Berkeley; MS, BS, California Tech
- \* **DAVIS, VIRGINIA A.**, Associate Professor, 2005. PhD, Rice, MS, BS, Tulane
- \* **DUKE, STEVE R.**, Alumni Associate Professor, 1996. PhD, MS, Illinois; BCHE, Georgia Tech
- \* **EDEN, MARIO R.**, Joe T. and Billie Carole McMillan Associate Professor, 2004. PhD, MS, Technical Denmark
- \* **GUPTA, RAM B. WALT AND VIRGINIA WOLTOSZ PROFESSOR**, 1995. PhD, Texas; MS, Calgary; BE, Roorkee
- \* **HANLEY, THOMAS R.**, Professor, 2003. PhD, MS, BS, Virginia Polytechnic Institute; MBA, Wright State
- JOSEPHSON, BILL**, Visiting Assistant Professor, 2004. PhD, MS, Auburn; BS, Clarkson
- \* **LEE, YOON Y.**, Uthlaut Family Professor and Alumni Professor; 1974. PhD, Iowa State; MS, South Carolina; BS, Seoul National
- LIPKE, ELIZABETH A.**, Assistant Professor, 2005. PhD, Rice; BS, Johns Hopkins
- MAPLES, GLENNON**, Professor, 1966, 1976. PhD, Oklahoma State; MS, BS, Mississippi State
- MILLS, DAVID R.**, Lab Manager, 1998. MS, Washington State; BS, California-Davis
- \* **NEUMAN, RONALD D.**, Professor, 1985. PhD, MS, The Institute of Paper Chemistry; BS, Washington
- \* **PLACEK, TIMOTHY D.**, Assistant Professor, 1978. PhD, Kentucky; MS, BS, Cleveland State
- \* **ROBERTS, CHRISTOPHER B.**, Uthlaut Professor and Chair, 1994. PhD, MS, Notre Dame; BS, Missouri
- \* **TATARCHUK, BRUCE J.**, Charles E. Gavin III Professor and Director (Center for Microfibrous Materials Manufacturing), 1981. PhD, Wisconsin; BS, Illinois
- \* **WANG, JIN**, Assistant Professor, 2006. PhD, MS, U Texas - Austin, BS, Tsinghua

## CHEMISTRY AND BIOCHEMISTRY

- \* **ACEVEDO, ORLANDO**, Assistant Professor, 2006. PhD, Duquesne; BS, Florida International
- \* **ALBRECHT-SCHMITT, THOMAS E.**, Professor, 2002. PhD, MS, Northwestern; BS, Southwest State RESIGNED
- \* **BLUMENTHAL, RIK**, Associate Professor, 1992. PhD, Penn State; BS, UCLA
- \* **CAMMARATA, VINCENZO**, Associate Professor, 1991. BS, Cal Tech; PhD, MIT
- \* **DONNELLY, ROBERT A.**, Associate Professor, 1979. PhD, North Carolina; MS, BS, LSU-New Orleans RETIRED
- \* **DUIN, EDUARDUS C.**, Associate Professor, 2002. PhD, Universiteit Van Amsterdam
- \* **EASLEY, CHRISTOPHER**, Assistant Professor, 2008. PhD, Virginia, BS Mississippi St.
- \* **ELLIS, HOLLY R.**, Associate Professor, 2001. PhD, Wake Forest, BS Central Florida
- \* **GOLDSMITH, CHRISTIAN**, Assistant Professor, 2007. PhD Stanford, AB Harvard
- \* **GOODWIN, DOUGLAS C.**, Associate Professor, 1999. PhD, Utah State; BA, Northern Colorado

- \* **GORDEN, ANNE E.V.**, Assistant Professor, 2005. PhD, MS, Texas, BS Emory
- \* **ILLIES, ANDREAS J.**, Professor, 1984. BA, New Hampshire; PhD, Nebraska; MS, Rochester Inst. Tech DELETE
- \* **LIVANT, PETER D.**, Associate Professor, 1977. BS, CCNY; PhD, Brown
- \* **MCKEE, MICHAEL L.**, Professor, 1981. PhD, Texas; BS, Lamar
- \* **MILLS, GERMAN**, Associate Professor, 1989. PhD, West Berlin; Lic, Chile
- \* **NEELY, WILLIAM C.**, Professor, 1966. PhD, LSU; MS, LSU; BS, Mississippi State RETIRED
- \* **MOHANTY, SMITA**, Associate Professor, 2005. PhD, MS Delhi
- \* **ORTIZ, J. V.**, Chairman and Ruth W. Molette Professor, 2006. PhD, Florida; BS Florida
- \* **PARISH, EDWARD J.**, Professor, 1981. PhD, Mississippi State; MA, Sam Houston State; BS, Southwest Texas State
- \* **SCHNELLER, STEWART W.**, Professor, 1994. PhD, Indiana; MS, BS, Louisville
- \* **SHANNON, CURTIS G.**, Professor, 1991. PhD, Texas; BS, Cal State-Fullerton
- \* **SQUILLACOTE, MICHAEL E.**, Associate Professor, 1987. PhD, California-Los Angeles; BS, Chicago
- \* **STRIEGLER, SUSANNE**, Associate Professor, 2004. PhD, MS, BS, Ulm
- \* **STANBURY, DAVID M.**, Professor, 1987. PhD, Southern California; BA, Duke
- WEST, KATHRYN M.**, Academic Program Associate II, 1989. MS, BS, Auburn
- \* **ZHAN, WEI**, Assistant Professor, 2006. PhD, Texas A&M; MS, Chinese Academy of Sciences; BS, Lanzhou, China

## CIVIL ENGINEERING

- ABBAS, HASSAN H.**, Assistant Professor, 2007. PhD, MSCE, Lehigh; MS, Ecole Nationale des Ponts et Chaussees; BSCE, Cairo
- ANDERSON, JEREMY B.**, Associate Professor, 2010. PhD, ME, Florida; BSCW, North Carolina State
- \* **BARNES, ROBERT W.**, Mallett Associate Professor, 1999. PhD, MSE, Texas; BCE, Georgia Tech
- \* **BARNETT, MARK O.**, Malcolm Pirnie Professor, 1999. PhD, North Carolina; MS, BS, Tennessee
- \* **BENEFIELD, LARRY O.**, Dean and Professor, 1979. PhD, Virginia Tech; MS, BCE, Auburn
- \* **CLEMENT, PRABHAKAR T.**, Feagin Professor, 2002. PhD, Auburn; M. Tech, Indian Inst of Tech; MSc, BSc, Madras.
- \* **CROWLEY, LARRY G.**, Associate Professor, 1992. PhD, BCSE, Texas A&M; MBA, Texas Christian
- DAVIDSON, JAMES S.**, Associate Professor, 2007. BCE, MS, PhD, Auburn
- DESHPANDE, ABHIJEET S.**, Assistant Professor, 2009. PhD, Cincinnati; MCM, Nicmar, Pune, India; BE, Mumbai
- \* **ELTON, DAVID J.**, Professor, 1985. PhD, Purdue; MS, Utah State; BS, Clarkson
- FANG, XING**, Associate Professor, 2007. BS, Tsinghua, MS, PhD, Minnesota
- LAMONDIA, JEFFREY J.**, Assistant Professor, 2010. PhD, MSE, Texas at Austin; BSE, Connecticut
- \* **LANGE, CLIFFORD R.**, Associate Professor, 1993. PhD, MS, BS, BA, SUNY Buffalo
- MARSHALL, JUSTIN D.**, Assistant Professor, 2009. PhD, Virginia Tech, MS, BS, Brigham Young
- \* **MORGAN, JOE M.**, Associate Dean and Associate Professor, 1971. PhD, MSSE, Virginia Tech; BSCE, Tennessee Tech
- \* **SCHINDLER, ANTON K.**, HRC Director and Associate Professor, 2002. PhD, MSE, Texas; BSE, Pretoria
- SON, AHJEONG**, Assistant Professor, 2008. PhD, Delaware; MS, GIST; BS, Ewha
- \* **STALLINGS, J. MICHAEL**, Professor and Head, 1988. PhD, Texas; MS, Auburn; BCE, Auburn

## Faculty

- \* **TIMM, DAVID H.**, Gottlieb Associate Professor, 2001. PhD, MS, BCE, Minnesota
- \* **TUROCHY, ROD E.**, Associate Professor, 2001. PhD, Virginia; MS, BS, Virginia Tech.
- VASCONCELOS, JOSE G.**, Assistant Professor, 2010. PhD, Michigan; MS, BS, Brasilia
- \* **VECELLIO, ROBERT L.**, Associate Professor, 1973. PhD, MSCE, BSCE, Ohio State
- \* **ZECH, WESLEY C.**, Gottlieb Associate Professor, 2004. PhD, MCE, BSCE, SUNY Buffalo
- \* **ZHAO, DONGYE**, Huff Associate Professor, 2001. PhD, Lehigh; MS, BS, Taiyuan Tech.

### CLINICAL SCIENCES

- ALMOND, GREGORY T.**, Assistant Clinical Professor 2007. DVM, Tennessee
- \* **ANGARANO, DONNA W.**, Associate Dean and Professor, 1986. DVM, BS, Missouri
- \* **BEHREND, ELLEN N.**, Joezy Griffin Endowed Professor, 1996. PhD, Auburn; MS Colorado State; VMD, Pennsylvania
- BELLAH, JAMIE R.**, Professor and Head, 2003. DVM, Colorado State
- BELLHORN, THEODORE**, Associate Clinical Professor, 2008 DVM, Auburn
- BOOTHE, HARRY W.**, Professor, 2003. MS, Texas A&M; DVM, Michigan State
- \* **BRAWNER JR, WILLIAM R.**, Ware Distinguished Professor, 1975. PhD, DVM, Auburn; MS, Florida
- CALDWELL, FRED J.**, Assistant Professor, 2005. DVM, Auburn; MS, BS, Kentucky
- \* **CARSON JR, ROBERT L.**, Professor, 1978. MS, Georgia; DVM, Auburn
- CIVCO, TANYA**, Assistant Professor, 2009. DVM, Tufts, BS, Connecticut
- \* **DILLON, ALLEN R.**, Rash Professor, 1973. MBA, MS, Auburn; DVM, Texas A&M
- DURAN, SUE H.**, Professor, 1975. PhD, MS, BS, Auburn
- EDMONDSON, MISTY S.**, Assistant Professor, 2006. MS, DVM, Auburn
- GARD, JULIE**, Associate Professor, 2003. PhD, DVM, Auburn
- GROOVER, ERIN S.**, Visiting Clinical Assistant Professor, 2007. DVM, Georgia
- \* **HANSON JR, RUSSELL R.**, Professor, 1992. DVM, Georgia
- \* **HATHCOCK, JOHN T.**, Professor, 1984. MS, DVM, Auburn
- \* **HENDERSON JR, RALPH A.**, Lowder Distinguished Professor, 1972. MS, Auburn; DVM, Missouri
- HOLLAND, MERRILEE.**, Associate Professor, 1999. MS, Mississippi State; DVM, Auburn; BS, Kentucky
- \* **HUDSON, JUDITH A.**, Professor, 1983. PhD, Auburn; DVM, Guelph
- IRIZARRY, RICARDO**, Clinical Instructor, 2010. DVM, Cornell
- JOHNSON, AIME K.**, Assistant Professor, 2007. DVM, North Carolina State
- JOHNSON, JACOB A.**, Assistant Professor, 2007. DVM, North Carolina State
- KENNIS, ROBERT A.**, Associate Professor, 2005. MS, Texas A&M; DVM, BS, Michigan State
- \* **LIN, HUI-CHU.**, Professor, 1990. MS, Illinois; DVM, Ping-Tong
- \* **MACDONALD, JOHN M.**, Professor, 1980. DVM, Cornell, MEd, BEd, Plymouth State
- \* **MACINTIRE, DOUGLASS K.**, P.B. Griffin Distinguished Professor, 1990. MS, Auburn; DVM, BS, Texas A&M
- MARTIN, LINDA G.**, Associate Professor, 2008. DVM, MS, Colorado State
- MAXWELL, HERRIS**, Associate Clinical Professor, 2005. DVM, Auburn; BS Mississippi State
- \* **MONTGOMERY, RONALD D.**, Bruce Pratt Professor, 1990. MS, DVM, Auburn

- MUNSTERMAN, AMELIA S.**, Instructor, 2007. MS, Ohio State, DVM, Missouri
- NEWCOMER, BENJAMIN**, Clinical Instructor, 2008. DVM, Florida; BA, Anderson
- ODUNAYO, ADESOLA**, Clinical Instructor, 2010. Oklahoma State
- PASSLER, THOMAS**, Clinical Instructor, 2008. DVM, Free University Berlin
- SCHLEIS, STEPHANIE**, Assistant Clinical Professor, 2008. DVM, Louisiana State
- \* **SCHUMACHER, JOHN**, Professor 1982. DVM, Kansas State; MS, Texas A&M
- SELLERS, GLEN**, Clinical Instructor, 2007. MS, Auburn
- SHORES, ANDREW**, Clinical Professor, 2007. PhD, Auburn, MS, Purdue, DVM, Auburn
- \* **SMITH, ANNETTE N.**, Associate Professor, 1995. MS, Auburn; DVM, BS, Texas A&M
- \* **SMITH-CARR, SARALYN**, Associate Professor, 1994. PhD, MS, Washington State, DVM, Tuskegee
- STEWART, ALLISON J.**, Associate Professor, 2002. MS Ohio State; B.V.Sc. Melbourne
- TAINTOR, JENNIFER S.**, Assistant Professor, 2007. MS, DVM, Auburn
- TAYLOR, DEBRA C.**, Associate Professor, 1995. M.S, DVM, Auburn
- \* **TILLSON, D. MICHAEL**, Arthur and Louse Oriolo Endowed Professor, 1995. MS, Kansas State; DVM, BS, North Carolina State
- WAGUESPACK JR., RICHARD WAYNE**, Associate Professor, 2007. DVM, Tuskegee, MS, Auburn
- \* **WALZ, PAUL H.**, Associate Professor, 2004. PhD, MS, DVM, Michigan State
- \* **WENZEL, JAMES G.W.**, Professor, 1990. PhD, Minnesota; MS, Georgia; DVM, Auburn
- WILBORN, ROBYN**, Assistant Professor, 2008. DVM, MS, BS, Auburn
- \* **WOHL, JAMES S.**, Professor, 1996. DVM, Purdue; BA, SUNY-Albany
- \* **WOLFE, DWIGHT F.**, Professor, 1980. MS, DVM, Auburn; BS, Tennessee
- WOOLDRIDGE, ANNE A.**, Assistant Professor, 2007. PhD, Duke; DVM, Texas A&M; MS, Louisiana State

### COMMUNICATION AND JOURNALISM

- \* **ADAMS, JENNIFER W.**, Associate Professor, 2005. PhD, MA, South Carolina, BS, Ball State
- \* **AGNE, ROBERT**, Assistant Professor, 2004. PhD, Colorado; MA, BS, Dayton
- \* **BRINSON, SUSAN L.**, Professor, 1990. PhD, MA, Missouri; BA, Cameron
- \* **BROWN, MARY HELEN**, Associate Professor, 1983. PhD, Texas; MA, Kentucky; BA, Centenary
- \* **BRUNNER, BRIGITTA R.**, Associate Professor, 2002. PhD, Florida; MA, Auburn, BA, Juniata
- \* **CARVALHO, JOHN P.**, Associate Professor, 2003. PhD, North Carolina; MA Cal State Fullerton; BA Auburn
- FAIRLEY, L. NAN**, Associate Professor, 1992. MA, Alabama; BA, Mississippi U. for Women
- \* **FITCH-HAUSER, MARGARET E.**, Associate Professor and Chair, 1987. PhD, Oklahoma; MA, BA, Stephen F. Austin
- \* **FULHAGE, MICHAEL J.**, Assistant Professor, 2010. PhD, North Carolina; MA, Missouri; BSJ, Kansas
- \* **JOHNSON, JENNIFER MCCULLARS**, Instructor, 2008. MA, BA, Auburn
- \* **LAVENSTEIN, HOLLIE**, Associate Professor, 2005. MFA Art Institute of Chicago, BA Brigham Young
- \* **MILFORD, MICHAEL S.**, Assistant Professor, 2010. PhD, Kansas; MA, Abilene Christian; BA, Hardin-Simmons
- \* **OVERPECK, DERON**, Assistant Professor, 2008. PhD, California-Los Angeles; MA, Arizona; BA, Indiana

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- \* **PLASKETES, GEORGE M.**, Professor, 1985. PhD, Bowling Green State; MA, BA, Mississippi
- \* **SHEPPARD, JUDITH E.**, Associate Professor, 1993. MA, BS, Auburn
- \* **SMITH, KEVIN**, Assistant Professor, 2008. MFA, Louisiana Tech; BFA, Auburn
- \* **SMITH, LAUREN REICHART**, Assistant Professor, 2010. PhD, Alabama; MA, Alabama Birmingham
- SMITH, RICHARD W.**, Advisor, 1992. BA, South Carolina; MEd, MComm, Auburn
- \* **SUTTON, DAVID L.**, Associate Professor, 1993. PhD, Georgia; MA, Auburn; BA, Baylor
- TEEL, JANE B.**, Advisor, 2005. MA, BS, Auburn
- VOYNICH, MELISSA**, Instructor, 2008. MA, Auburn; BA, Mercer
- WALDEN, JEREMY**, Instructor, 2008. MA, Auburn; BA, Faulkner
- \* **WALKER, CHRIS**, Assistant Professor, 2007. MFA, Southern Illinois; BAA Central Michigan
- WATER, SUSAN**, Assistant Professor, 2009. PhD, Kansas; MA, Pittsburg State; BA, Missouri Southern
- WILLIAMS JR, KING E.**, Professor, 1983. MA, BA, Alabama
- \* **WINN, J. EMMETT**, Associate Provost & Professor, 1992. PhD, South Florida; MA, BA, Auburn
- \* **WORTHINGTON, DEBRA L.**, Associate Professor, 1999. PhD, Kansas; MA, Wichita State; BA, Auburn
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- \* **CROSS II, JAMES H.**, Professor, 1986. PhD, Texas A&M; MS, Sam Houston State; BS, Houston
- \* **HAMILTON, JOHN A. JR.**, Alumni Professor, 2001. PhD, Texas A&M; MS, Vanderbilt, MSSM, Southern California; BA, Texas Tech, AA, New Mexico Military Institute
- \* **HENDRIX, T. DEAN**, Associate Professor, 1996. PhD, Auburn; MS, Georgia Tech; BS, Jacksonville State
- HUNDLEY, JACQUELINE H.**, INSTRUCTOR, 2010. MS, BS, AUBURN
- KU, WEI-SHINN**, Assistant Professor, 2007. PhD, MS, Southern California, BS, Nat. Taiwan Normal
- \* **LIM, ALVIN S.**, Associate Professor, 1997. PhD, Wisconsin; MS, Indiana; BS, U. Malaya
- MARGHITU, DANIELA**, COMP 1000 Coordinator, 1996. PhD, Craiova; MS, BS, Bucharest
- \* **NARAYANAN, N. HARI**, Professor, 1996. PhD, Ohio State; MS, Rochester; ME, Indian Inst. of Science
- QIN, XIAO**, Associate Professor, 2004. PhD, Nebraska, MS, BS, Huazhong Univ. Science and Technology
- SEALS, CHERYL**, Associate Professor, 2003. PhD, MS, Virginia Tech; BS, Grambling State
- \* **UMPHRESS, DAVID A.**, Associate Professor, 1999. PhD, MCS, Texas A&M; BS, Angelo State
- YILMAZ, LEVENT**, Associate Professor, 2003. PhD, MS, Virginia Tech; BS, Bilkent, Turkey
- YU, WEIKUAN**, Assistant Professor, 2009. PhD, MS, Ohio State; BS, Wuhan

## COMMUNICATION DISORDERS

- \* **BLUMSACK, JUDITH T.**, Assistant Professor, 2004. PhD, Florida State.
- BURRUS, EMBRY A.**, Associate Clinical Professor, 2002. MCD, Auburn
- \* **HAAK, NANCY J.**, Associate Professor, 1989. PhD, Florida; MS, Purdue; BA, Auburn
- \* **JOHNSON, CAROLE**, Professor, 1992. PhD, MA, Tennessee; BA, UC-Santa Barbara
- \* **KLUESONG, MARSHA**, Assistant Clinical Professor, 2010. AuD, Florida; MS, BS, Florida State
- \* **KRISHNAMURTI, SRIDHAR**, Associate Professor, 1996. PhD, Kent State; MSc, BSc, All India Institute for Hearing
- \* **MOLT, LAWRENCE F.**, Associate Professor, 1995. PhD, Tennessee; MS, South Florida
- \* **MORAN, MICHAEL J.**, Professor, 1983. PhD, Penn State; MA, Wichita State; BS, E. Stroudsburg State
- \* **PHILLIPS, DANIEL**, Assistant Professor, 2008. EdD, Samford
- \* **PINDZOLA, REBEKAH H.**, Professor, 1979. PhD, Tennessee; MS, BS, East Carolina
- \* **PLEXICO, LAURA**, Assistant Professor, 2006. PhD, MA, Memphis; BS, Montevallo
- \* **PLUMB, ALLISON**, Assistant Professor, 2008. PhD, Florida State
- \* **WILLIS, LAURA G.**, Assistant Clinical Professor, 2008. MCD, Auburn
- \* **WILSON, MARTHA W.**, Clinical Professor, 1990. AuD, Penn. School of Optometry; MA, Kent State; BS, Miami
- \* **ZYLLA-JONES, ELIZABETH**, Clinical Professor, 1991. MS, Purdue; BA, Pacific

## COMPUTER SCIENCE AND SOFTWARE ENGINEERING

- \* **BASKIYAR, SANJEEV**, Associate Professor, 1999. PhD, MSEE, Minnesota; BE, Indian Inst. of Science
- BIAZ, SAAD**, Associate Professor, 2001. PhD, Texas A&M; PhD, MS, BS, Henri Poincare
- \* **CARLISLE III, W. HOMER**, Associate Professor, 1988. PhD, MS, BA, Emory
- \* **CHANG, KAI-HSIUNG**, Professor and Chair, 1986. PhD, MS, Cincinnati; Dipl, Taipei Institute of Technology
- \* **CHAPMAN, RICHARD O.**, Associate Professor, 1993. PhD, MS, Cornell; BA, Oxford

## CONSUMER AFFAIRS

- \* **BYUN, SANG-EUN**, Assistant Professor, 2006. PhD, Michigan State; MS, Kyung-Hee; BA, Andong National-South Korea.
- \* **CENTRALLO, CAROL B.**, Associate Professor, 1992. PhD, Minnesota; BS, North Alabama
- \* **CHATTARAMAN, VEENA**, Assistant Professor, 2006. PhD, Ohio State; Master of Design, Cincinnati; BBA, Madras
- \* **CONNELL, LENDA JO**, Under Armour Professor, 1980. EdD, Auburn; MS, LSU; BS, Louisiana Tech
- \* **FORSYTHE, SANDRA M.**, Wrangler Professor, 1991. PhD, Tennessee; MS, Virginia Tech; BS, East Tennessee State
- \* **KIM, HYEJEONG**, Assistant Professor, 2008. PhD, Iowa State; MS, Ohio State; A.S. Fashion institute Tech; BS, Catholic Univ of Korea
- \* **KWON, WI-SUK**, Associate Professor, 2005. PhD, Ohio State; MS, Iowa State, BS, Seoul National
- \* **PARK-GATES, SHARI**, Assistant Professor, 2007. PhD, Virginia Tech; MS, MBA, Charleston; BID Interior Design Institute; BA, West Virginia
- \* **PEEK, PAULA FRANCES MILLER**, Associate Professor, 2002. MFA, Auburn; BFA, Barton
- \* **PRESLEY, ANN B.J.**, Associate Professor, 1992. PhD, Maryland; MS, Ohio State; BS, Western Kentucky
- \* **SIMMONS, KARLA P.**, Assistant Professor, 2002. PhD, North Carolina State; MS, BS, Auburn.
- \* **ULRICH, PAMELA V.**, Professor, 1992. PhD, Oregon; MS, Auburn; BS, Oregon State
- \* **WARFIELD, CAROL L.**, Professor and Head, 1977. PhD, MS, Illinois; BS, South Dakota State

## CURRICULUM AND TEACHING

- \* **ASH, BARBARA H.**, Associate Professor, 1990. PhD, Florida State; MA, SUNY; BA, Marshall
- \* **BARRY, NANCY H.**, Professor and Head, 2007. PhD, MME, Florida State; BM, Middle Tennessee State
- \* **BARRY, MARY S.**, Associate Professor, 1993. PhD, Purdue; MA, Northeast Missouri State; BSEd, Southeast Missouri State
- \* **BOYD, PAMELA C.**, Associate Professor, 1991. EdD, Mississippi State; MEd, BS, Georgia State
- \* **BRABHAM, EDNA G.**, Associate Professor, 1997. PhD, MS, BA, Florida State

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- \* **EICK, CHARLES J.**, Associate Professor, 1999. PhD, Auburn; MEd, Georgia State; BS, Clemson
- \* **KOHLMEIER, JADA**, Associate Professor, 2003. PhD, Kansas; MAT, Washington; BA, Kansas State
- \* **KUEHNE, JANE M.**, Assistant Professor, 2005. PhD, Florida State; MEd, BS, Texas, San Antonio
- \* **LEIER, ROBERT**, Assistant Professor, 2006. PhD, Penn State; MA, Massachusetts-Boston; BS, Ball State
- \* **LOVE, ANGELA**, Assistant Professor, 2008. PhD, Georgia State; MA, Tulane; BA, Eckerd
- \* **MARTIN, W. GARY**, Emily R. and Gerald R. Leischuck Professor, 2000. EdD, Georgia; BS, Mennoite
- \* **MCCORMICK, THERESA M.**, Associate Professor, 2004. PhD, EdS, MEd, Alabama; BS, Jacksonville State
- \* **MOROWSKI, DEBORAH L.**, Assistant Professor, 2008. PhD, MEd, BA, Texas
- \* **MURRAY, BRUCE A.**, Associate Professor, 1996. PhD, Georgia; MEd, Southwest Missouri State; BA, Quincy
- \* **PARR, BRIAN A.**, Assistant Professor, 2008. PhD, Oklahoma State; MS, BS, Tennessee
- \* **PATTERSON SR, GORDON D.**, Assistant Professor, 1971. PhD, Maryland; MEd, BS, Auburn
- \* **RUSSELL, MELODY L.**, Associate Professor, 2002. PhD, Georgia; MS, Nebraska; BS, North Carolina Agricultural and Technical State
- \* **SAYE JR, JOHN W.**, Alumni Professor, 1994. EdD, MA, AB, Georgia
- \* **SKINNER, LEANE B.**, Associate Professor, 2002. EdD, Auburn; EdS, MS, BS, Troy State
- \* **STRUTCHENS, MARILYN E.**, Mildred Cheshire Fraley Distinguished Professor, 2000. PhD, MEd, BS, Georgia
- \* **TRIPP, L. OCTAVIA**, Associate Professor, 2002. Ed.D, MS, Oklahoma State; BS, Wesleyan
- \* **VILLAUME, SUSAN K.**, Professor and Associate Dean, 1988. PhD, Ohio State; MS, Tennessee; BA, Carson Newman
- \* **WALLACE, CAROLYN S.**, Associate Professor, 2009. EdD, Michigan; MS, Arizona State; BS, California, Irvine
- \* **WALLS, KIMBERLY C.**, Professor, 1997. PhD, Florida State; MEd, BS, Auburn
- \* **WHYTE, ALYSON I.**, Associate Professor, 2001. PhD, BA, Stanford

## ECONOMICS

- \* **AULT, RICHARD W.**, Associate Professor, 1983. PhD, Virginia; AB, W. Virginia
- \* **BEARD, THOMAS R.**, Professor, 1988. PhD, Vanderbilt; BA, Tulane
- \* **BEIL JR, RICHARD O.**, Associate Professor, 1988. PhD, Texas A&M; MS, North Texas State; BBA, Texas Tech
- \* **GARRISON, ROGER W.**, Professor, 1978. PhD, Virginia; MA, Missouri-Kansas; BSEE, Missouri State
- \* **JACKSON, JOHN D.**, Professor, 1984. PhD, Claremont; BA, MA, Texas-Arlington
- \* **KIM, HEYONGWOO**, Assistant Professor, 2006. PhD, Ohio State, MA, BA, Seoul National
- \* **SABA, RICHARD P.**, Associate Professor, 1974. PhD, Texas A&M; MBA, BA, Dallas
- \* **SEALS, RICHARD A.**, Assistant Professor, 2010. PhD, MA, BS, Middle Tennessee State
- \* **STERN, LILIANA**, Assistant Professor, 2006. PhD, MA, Indiana; MA, EERC, BS, Ternopil State
- \* **STERN, MICHAEL L.**, Assistant Professor, 2004. PhD, MA, Indiana; BS, Purdue

## EDUCATION - ADMINISTRATION

- \* **WHITFORD, BETTY LOU**, Dean and Wayne T. Smith Distinguished Professor, 2010. PhD, MAT, AB, North Carolina, Chapel Hill
- \* **VILLAUME, SUSAN K.**, Associate Dean and Professor, 1989. PhD, Ohio State; MS, Tennessee; BA, Carson Newman

## EDUCATIONAL FOUNDATIONS, LEADERSHIP AND TECHNOLOGY

- \* **ADAMS III, OLIN L.**, Associate Professor, 2000. PhD, Ohio; MBA, Mount St. Mary's; AB, Centre
- \* **ANDRZEJEWSKI, CAREY E.**, Assistant Professor, 2008. PhD, MA, Ohio State; MA, Texas Woman's; BS, Berry
- \* **BANNON, SUSAN**, Associate Professor and Director, Learning Resources Center, 1985. EdD, Louisiana State; MEd, BS, Auburn
- \* **DIRAMIO, DAVID**, Associate Professor, 2005. PhD, Nevada; MBA, BS, New York, Buffalo
- \* **DOWNER, SHERIDA**, Associate Professor and Head, 2007. MALS, Rosary College; BA George Williams
- \* **FORBES, SEAN A.**, Associate Professor, 1999. PhD, MA, BA, Florida
- \* **GROCCIA, JAMES E.**, Associate Professor, 2003. EdD, Tennessee, MEd, Hofstra; BA Hartwick
- \* **HENRY, DANIEL J.**, Assistant Professor, 2007. PhD, Indiana; BS, Indiana
- \* **HUR, JUNG WON**, Assistant Professor, 2007. PhD, Indiana; MEd, BS, Seoul National
- \* **KAMINSKY, JAMES S.**, Mildred Cheshire Fraley Distinguished Professor, 1989. PhD, MA, Michigan State; BA, Minnesota
- \* **KENSLER, LISA A.**, Assistant Professor, 2008. EdD, Lehigh; MS, Old Dominion; BS, George Mason
- \* **KOCHAN, FRANCES K.**, Wayne T. Smith Distinguished Professor and Dean, 1994. PhD, Florida State; MEd, Guam; BS, SUNY-Fredonia
- \* **KRASKA, MARIE F.**, Mildred Cheshire Fraley Distinguished Professor, 1988. PhD, Missouri; MS, Wisconsin-Stout; BS, Wisconsin-Stevens
- \* **LLANES, JOSE R.**, Professor, 2006. PhD, BA Havana
- \* **PATRICK, R. LYNNE**, Clinical Associate Professor, 2007. EdD, BS, Auburn; EdS, MA, North Alabama
- \* **REAMES, ELLEN H.**, Assistant Professor, 2007. EdD, Auburn; EdS, Columbus College; MEd, BS, Georgia
- \* **REED, CYNTHIA J.**, Professor and Director, Truman Pierce Institute, 1997. EdD, Pittsburgh; MS, BS, SUNY, Oswego
- \* **ROSS, MARGARET E.**, Associate Professor, 1997. PhD, Kansas; MA, Missouri-Kansas City; BSEd, Northeast Missouri State
- \* **SALISBURY-GLENNON, JILL D.**, Associate Professor, 1997. PhD, MS, Penn State; BS, Suny-Oswego
- \* **SHANNON, DAVID M.**, Humana-Germany-Sherman Distinguished Professor, 1990. PhD, Virginia; BS, Kutztown
- \* **STROM, PARIS S.**, Associate Professor, 2001. PhD, MA, BFA Arizona State
- \* **WATTS, IVAN E.**, Associate Professor, 1999. EdD, Cincinnati; MS, SUNY-Buffalo; BA, Ohio State
- \* **WITTE, JAMES E.**, Associate Professor, 1999. PhD, South Florida; MEd, William & Mary; BS, Nebraska
- \* **WITTE, MARIA M.**, Associate Professor, 1999. EdD, South Florida; MPA, Oklahoma; BS, Maryland
- \* **WOLF, SARA E.**, Associate Professor, 2000. PhD, Arizona State; MEd, Wright State; BSEd, Ohio

## ELECTRICAL AND COMPUTER ENGINEERING

- \* **AGRAWAL, VISHWANI**, James J. Danaher Professor, 2003. PhD, Illinois-Urbana-Champaign; ME, Indian Institute of Science; BE, Roorkee
- \* **BAGINSKI, MICHAEL E.**, Associate Professor, 1985. PhD, MS, BS, Penn State
- \* **BAGINSKI, THOMAS A.**, Professor, 1984. PhD, MSEE, BSEE, Penn State
- \* **DAI, FA**, Professor, 2002. PhD, Penn State, Auburn; MS, BS, Elec. Sci. & Tech of China
- \* **DEAN JR., ROBERT, N.**, Assistant Professor, 2007. PhD, MS, BEE, Auburn

## Faculty

- \* **DENNEY JR, THOMAS S.**, Ed and Peggy Reynolds Family Professor and Director, AU MRI Research Center, 1994. PhD, Johns Hopkins; MS, BS, Auburn
- DESPANDE, GOPIKRISHNA**, Assistant Professor, 2010. PhD, Georgia Tech; MS, Indian Inst., Bangalore; BTech, Nat. Inst, Warangal
- \* **HALPIN, STEVEN MARK.**, Alabama Power Distinguished Professor, 2002. PhD, MS, BEE, Auburn
- HAMILTON, MICHAEL C.**, Assistant Professor, 2010. PhD, MSEE, Michigan; BSEE, Auburn
- \* **HUNG, JOHN Y.**, Professor, 1989. PhD, Illinois; MSE, Princeton; BSEE, Tennessee
- IRWIN, J. DAVID**, Williams Eminent Scholar, 1969. PhD, MS, Tennessee; BEE, Auburn
- \* **JOHNSON, ROBERT W.**, Professor and Director of Information Technology Peak of Excellence 1987. PhD, Auburn; MS, BE, Vanderbilt
- \* **KIRKICI, HULYA**, Associate Professor, 1991. PhD, PolyTechnic; MS, BS, Middle East Tech
- \* **LEE, SOO-YOUNG**, Professor, 1995. PhD, Texas; MS, Korea Advanced Inst.; BS, Seoul National
- \* **MAO, SHIWEN**, Assistant Professor, 2006. PhD, MS, Polytechnic-New York; MS, BS, Tsinghua
- \* **NELMS, ROBERT M.**, Professor and Chair, 1984. PhD, Virginia Tech; MS, BEE, Auburn
- \* **NELSON, VICTOR P.**, Professor, 1978. PhD; MS, Ohio State; BSEE, Kentucky
- \* **NIU, GUOFU**, Professor, 1997. PhD, MS, BS, Fudan
- \* **REEVES JR, STANLEY J.**, Professor, 1990. PhD, Georgia Tech; MS, BS, Clemson
- \* **RIGGS, LLOYD S.**, Professor, 1983. PhD, MS, BS, Auburn
- \* **ROPPEL, THADDEUS A.**, Associate Professor, 1986. PhD, MSEE, BSEE, Michigan State
- \* **SINGH, ADIT D.**, James B. Davis Professor, 1991. PhD, MS, Virginia Tech; BTech, Indian Inst.
- \* **STROUD, CHARLES E.**, Professor, 2003. PhD, Illinois; MS, BS, Kentucky
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- \* **WENTWORTH, STUART M.**, Associate Professor, 1990. PhD, MSE, Texas; BCH.E, Auburn
- \* **WILAMOWSKI, BOGDAN D.**, Alumni Professor and AMNSTC Director, 2003. D.Sc., PhD, MSc, Technical U. of Gdansk
- \* **WU, CHWAN-HWA**, Professor, 1987. PhD, MS, PolyTechnic-New York; BS, National Chiao Tung
- BRODIE, MARK**, Instructor, 2006. MA, Bowling Green State; MA, Clemson; BA, Virginia Commonwealth
- BRUNSON, REBECCA**, Instructor, 2007. MA, BSE Emporia
- CAMPION, AMY**, Instructor, 2008. MA, Boston; BA, Dartmouth
- \* **CAMPION, PETER**, Assistant Professor, 2008. MA, Boston; BA, Dartmouth
- \* **CARROLL, ALICIA J.**, Associate Professor, 1998. PhD, CUNY; MA, Columbia; BS, Skidmore
- CARTER, WILLIAM**, Instructor, 2007. PhD, Oklahoma State; MA, Western Virginia; BSN, North Carolina
- \* **CLARK, JAMES A.**, Associate Professor and Director of Assessment, 1982. PhD, Yale; MA, BA, North Carolina
- \* **CLARK, MIRIAM M.**, Associate Professor, 1989. PhD, MA, North Carolina; AB, Missouri
- COLLINS, JENNIFER**, Instructor, 2008. PhD, MA, BA, Wisconsin-Milwaukee
- \* **CRANDELL, GEORGE W.**, Professor and Associate Dean, 1988. PhD, MA, Texas; BA, North Carolina
- \* **DOWNES, JEREMY M.**, Professor, 1991. PhD, MA, Wisconsin; BA, Chicago
- FARMER, ANGELA**, Instructor, 2008. PhD, Auburn; MA, BA, Saint Xavier
- FASHBAUGH, MARTIN**, Instructor, 2008. MA, Northwestern Louisiana State; BS, Iowa State
- GEORGE, COURTNEY**, Instructor, 2008. PhD, Louisiana State; AB, Georgia
- \* **GOLDSTEIN, R. JAMES**, Hargis Professor, 1991. PhD, MA, Virginia; BA, Rochester
- HAYES, TIMOTHY**, Instructor, 2008. PhD, MA, North Carolina; BA, Rhodes
- HEINSOHN, MARY FRANCES**, Instructor, 2005. MA, Texas Tech; BA Western Connecticut State
- HIMMELWRIGHT, CATHERINE**, Instructor, 2004. PhD, MA, Mississippi; BA, Auburn
- JACK, KIMBERLY**, Instructor, 2008. MA, Loyola Marymount; BA, Kalamazoo
- \* **KEIRSTEAD, CHRISTOPHER M.**, Associate Professor, 1999. PhD, MA, Delaware; BA, William & Mary
- \* **LATIMER, DAN R.**, Professor, 1972. PhD, MA, Michigan; BA, Texas
- \* **MACKIEWICZ, JO**, Associate Professor, 2008. PhD, Georgetown
- \* **MARSHALL, MARGARET**, Professor, 2010. PhD, Michigan; MA, Colorado; BA, Northern Colorado.
- MAUNEY, JANET**, Instructor, 2008. PhD, MA, MFA, BA, Florida State
- MCKELLY, JAMES**, Associate Professor, 1990. PhD, MA, Indiana; BA, Wabash
- \* **MELANCON, TRIMIKO**, Assistant Professor, 2007. PhD, MA, Massachusetts; BA, Xavier
- \* **MORRIS, SUSANA**, Assistant Professor, 2007. PhD, Emory; BA, Mount Holyoke
- NEVINS, GRETCHEN**, Instructor, 2008. MA, Connecticut; BA, Williams
- OLSEN, KATHRYN**, Instructor, 2007. MA, Oregon; BA, Winthrop
- POWERS, RHONDA**, Instructor, 2005. MA, BA, Southwest Missouri State
- PRIVETT, KATHARYN**, Instructor, 2008. PhD, MA, BA, Auburn
- PULLING, SHARYN**, Instructor, 2006. MA, Auburn; BA, Southeastern Louisiana
- \* **RELIHAN, CONSTANCE C.**, Senior Associate Dean and Professor, 1990; PhD, MA, Minnesota; AB, Illinois
- \* **RIEHL, ANNA**, Assistant Professor, 2007. PhD, MA, BA, Illinois
- \* **ROOZEN, KEVIN**, Associate Professor, 2005. PhD, Illinois; MA, BA, Alabama-Birmingham
- \* **RYAN, JAMES EMMETT**, Associate Professor, 2000. PhD, MA, North Carolina; BA, Pennsylvania
- \* **SABINO, ROBIN**, Associate Professor, 1991. PhD, Pennsylvania; MA, Virgin Islands; BA, Adelphi

## ENGINEERING - ADMINISTRATION

- \* **BENEFIELD, LARRY D.**, Dean, 1979. PhD, Virginia Tech; MS, Auburn; BCE, Auburn
- KINGSLEY, OLIVER D., JR.**, Associate Dean, 2008. BS, Auburn
- \* **MADSEN, NELS**, Associate Dean, 1978. PhD, MS, BA, Iowa
- \* **MORGAN, JOE M.**, Associate Dean, 1971. PhD, MSSE, Virginia Tech; BSCE, Tennessee Tech
- \* **ZEE, RALPH H.**, Associate Dean, 1986. PhD, MS, BS, Wisconsin

## ENGLISH

- \* **ACEVEDO, CHANTEL**, Assistant Professor, 2006. MFA, BA, Miami
- \* **BACKSCHEIDER, PAULA R.**, Philpott-Stevens Eminent Scholar, 1992. PhD, BA, Purdue; MS, Southern Connecticut State
- BEARD, PHILLIP**, Instructor, 2004. PhD, Maryland; MA, Virginia; BA, Hampden-Sydney
- BELL, MONITA**, Instructor, 2009. MA, Auburn; BA, Alabama State
- \* **BERTOLET, CRAIG E.**, Associate Professor, 1997. PhD, MA, Pennsylvania State; BA, Millersville
- \* **BOLTON, JONATHAN W.**, Professor, 1996. PhD, Maryland; MA, CUNY-Brooklyn; BA, Miami
- BREWER, KATHERINE**, Instructor, 2006. MA, BA, Auburn

- SALERNO, ALLEN**, Instructor, 2008. PhD, MA; Indiana; BA, Southwestern
- SANDLIN, WILLIAM**, Instructor, 2008. PhD, Texas Tech; BA, Austin Peay State
- \* **SERVISS, TRICIA. ASSISTANT PROFESSOR**, 2010. PhD, Syracuse; MA, Loyola Marymount; BA, San Diego
- \* **SIDLER, MICHELLE A.**, Associate Professor, 2000. PhD, MA, Purdue; BA, Oglethorpe
- \* **SILVERSTEIN, MARC R.**, Hollifield Professor, 1989. PhD, MA, Brown; BA, Bowdoin
- SPELL, CARRIE**, Instructor, 2008. PhD, MA, Southern Mississippi; BA, Cornell
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- \* **TROY, JUDY R.**, Professor and Alumni Writer-In-Residence, 1992. MA, Indiana; BA, Illinois
- WALTERS, FRANKLIN D.**, Associate Professor, 1991. PhD, Northern Illinois; MA, BS, Duquesne
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- \* **WYSS, HILARY E.**, Hargis Associate Professor, 1998. PhD, MA, North Carolina; BA, Hamilton
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## ENTOMOLOGY AND PLANT PATHOLOGY

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- \* **FLANDERS, KATHY L.**, Associate Professor, 1995. PhD, MS, Minnesota; BS, Cornell
- \* **HAGAN, AUSTIN K.**, Professor, 1980. PhD, MS, Ohio State; BS, Indiana-Pennsylvania
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- \* **LIU, NANNAN**, Professor, 1997. PhD, Cornell; BS, China Agricultural
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- \* **RODRIGUEZ-KABANA, RODRIGO**, Distinguished University Professor, 1965. PhD, MS, BS, LSU
- \* **SIKORA, EDWARD J.**, Professor and Extension Specialist, 1992. PhD, MS, Illinois; BS, Eastern Illinois
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## FINANCE

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- \* **SWIDLER, STEVEN M.**, J. Stanley Mackin Professor, 2001. PhD, MS, Brown; BA, Oberlin
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## FISHERIES &amp; ALLIED AQUACULTURES

- \* **ARIAS, COVADONGA R.**, Associate Professor, 2002. PhD, BS, Valencia, Spain
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- \* **DUNHAM, REX A.**, Professor, 1980. PhD, Auburn; MS, BS, Illinois
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- \* **LIU, ZHANJIANG**, Professor and Assoc Dean for Research, 1995. PhD, MS, Minnesota; BS, Northwestern Agri.
- \* **PEATMAN, ERIC J.**, Assistant Professor, 2009. BS MS, PhD Auburn
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## FOREIGN LANGUAGES &amp; LITERATURES

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- \* **GRAMBERG, ANNE-KATRIN**, Dean and Professor, 1992. PhD, Michigan State; MA, Georg August, Germany
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## FORESTRY &amp; WILDLIFE SCIENCES - ADMINISTRATION

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- \* **DITCHKOFF, STEPHEN S.**, Associate Professor, 2001. PhD, Oklahoma State; MS, Maine; BS, Michigan State
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- \* **ENEBAK, SCOTT A.**, Professor, 1995. PhD, West Virginia; MS, BS, Minnesota
- \* **FLYNN, KATHRYN M.**, Mosley Associate Professor, 1992. PhD, MS, Louisiana State; BS, Auburn
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- \* **MORSE, WAYDE**, Assistant Professor, 2007. PhD, Idaho; MS, Colorado State; BS, New Mexico
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- \* **SOUTH, DAVID B.**, Professor, 1975. PhD, Auburn; MS, BS, North Carolina State
- \* **TEETER, LAWRENCE D.**, Professor, 1985. PhD, Colorado State; AB, Michigan
- \* **TIAN, HANQIN**, Solon Dixon Professor, 2003. PhD, SUNY; MS, Chinese Academy of Agric. Sciences, Beijing; BS, Zhejiang
- \* **TUFTS, ROBERT A.**, Associate Professor, 1979. JD, Jones; PhD, Virginia Tech; MS, BS, Louisiana State
- \* **ZHANG, DAOWEI**, Professor, 1994. PhD, British Columbia; MS, Beijing Forestry; BS, South-Central Forestry
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- JACKSON, PAUL**, Research Fellow, 2010. PhD, Auburn; MS Louisiana Tech, BS Northwestern State
- LOEWENSTEIN, NANCY**, Research Fellow, 2005. PhD, Missouri, MS, Virginia Tech, BS, Auburn
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## GEOLOGY AND GEOGRAPHY

- ALEXANDER, TONI**, Assistant Professor, 2004. PhD, MA, Louisiana State; BA Cal State-Stanislaus



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- \* **STELTENPOHL, MARK G.**, Professor, 1989. PhD, North Carolina; MS, BS, Alabama
- \* **UDDIN, ASHRAF**, Associate Professor, 1999. PhD, Florida State; MS,Hawaii; MS, Dhaka
- \* **WOLF, LORRAINE W.**, Professor, 1993.PhD, Alaska; MA, BA, SUNY Binghamton
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## HISTORY

- \* **BECKWITH, GUY V.**, Associate Professor, 1980. PhD, California-Santa Barbara; BA, California-Santa Cruz
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- \* **BOHANAN, DONNA J.**, Professor, 1982. PhD, MA, Emory; BA, Hendrix
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- \* **BROOKS, JENNIFER E.**, Associate Professor, 2006. PhD, Tennessee; BA, Massachusetts-Boston
- \* **CARTER, DAVID C.**, Associate Professor, 2000. PhD, Duke; BA, North Carolina
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- \* **FERGUSON, CHRISTOPHER, J.**, Assistant Professor, 2008. PhD, MA, Indiana; BA, St. Olaf
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- \* **ISRAEL, CHARLES A.**, Associate Professor, 2005. PhD, MA, Rice; BA, University of the South
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- \* **KINGSTON, RALPH**, Assistant Professor, 2007. PhD, University College London; BA, Trinity College Dublin

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- \* **NOE, KENNETH W**, Draughton and Alumni Professor, 2000. PhD, Illinois; MSLS, Kentucky; MA, Virginia Tech
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## HORTICULTURE

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- \* **GILLIAM, CHARLES H.**, Professor, 1980. PhD, MS Virginia Tech; BS, Tennessee-Martin
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- \* **KEEVER, GARY J.**, Professor, 1982. PhD, MS, Cornell; BS, Clemson
- \* **KEMBLE, JOSEPH M.**, Professor and Extension Specialist, 1993. PhD, MS, North Carolina State; BS, Delaware
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- \* **SIBLEY, JEFFREY L.**, Professor, 1994. PhD, Georgia; MS, BS, Auburn
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- \* **TILT, KENNETH M.**, Professor and Extension Specialist, 1989. PhD, BS, North Carolina State; MS, East Carolina
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- \* **WOODS, FLOYD M.**, Associate Professor, 1990. PhD, Mississippi State; MS, Cornell; BS, Tuskegee
- \* **WRIGHT, AMY NOELLE**, Associate Professor, 2002. PhD, North Carolina State; MS, BS, Virginia Tech.

## HUMAN DEVELOPMENT AND FAMILY STUDIES

- \* **ABELL, ELLEN E.**, Associate Professor, 1993. PhD, MA, Washington State; BA, Illinois
- \* **ADLER-BAEDER, FRANCESCA**, Professor, 2001. PhD, MS, North Carolina-Greensboro, BA, Pembroke
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## Faculty

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- CULPEPPER, SUSAN E.**, Assistant Professor, 2005. PhD, Alabama Birmingham; MS, Florida State; BS, Montevallo
- \* **EL-SHEIKH, MONA M.**, Leonard Peterson Professor, 1990. PhD, MA, West Virginia; BA, American-Cairo
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- HENTON, JUNE**, Dean and Professor, 1985. PhD, Minnesota; MS, Nebraska; BS, Oklahoma State
- KEILEY, MARGARET K.**, Professor, 2004, EdD, EdM, Harvard; MEd, Massachusetts; BS, Denison
- \* **KERPELMAN, JENNIFER L.**, Professor, 1999. PhD, Auburn; MS, BS, Old Dominion
- \* **KETRING, SCOTT A.**, Associate Professor, 1999. PhD, Kansas State; MS, BS, Brigham Young
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- \* **MIZE, JACQUELYN**, Professor, 1984. PhD, Purdue; MS, BA, Georgia
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- \* **PITTMAN JR, JOE F.**, Professor and Head, 1989. PhD, MA, BS, Georgia
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- \* **VAZSONYI, ALEXANDER T.**, Professor, 1996. PhD, MS, Arizona; BS, Grand Valley State
- \* **WICKRAMA, THULITHA**, Assistant Professor, 2007. PhD, Penn State; MS, Minnesota State, Mankato; BS, Iowa State

### HUMAN SCIENCES - ADMINISTRATION

- AVERY, ARTHUR**, Associate Dean and Professor, 1985. PhD, MS, BA, Penn State
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### INDUSTRIAL AND SYSTEMS ENGINEERING

- \* **DAVIS, GERALD A.**, Assistant Professor, 2001. PhD, MEd, MS, Auburn; BSME, South Carolina
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### INDUSTRIAL AND GRAPIC DESIGN

- \* **ARNOLD, CHRISTOPHER**, Associate Professor, 2003. MCP, Auburn; BInd, Auburn
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### KINESIOLOGY

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- \* **WEIMAR, WENDI H.**, Associate Professor, 1996. PhD, Auburn; MEd, Virginia; BS, Castleton State

### LIBERAL ARTS-ADMINISTRATION

- \* **GRAMBERG, ANNE-KATRIN**, Dean and Professor, 1992. PhD, Michigan State; MA, Georg August, Germany
- \* **RELIHAN, CONSTANCE C.**, Senior Associate Dean and Hargis Professor, 1990; PhD, MA, Minnesota; AB, Illinois

## Faculty

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### LIBRARY

**BEALL, LISA S.**, Librarian III, 1993. MLS, Rutgers; BS, Montana State

**BISHOP, BARBARA A.**, Librarian III, 1988. MALS, BA, South Florida

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### MANAGEMENT

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\* **SAUSER, WILLIAM, I.**, Professor, 1977. PhD, MS, BS, Georgia Tech

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**SVYANTEK, FRANCES**, Instructor, 2007. MS, Houston; BS, Houston Baptist

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### MARKETING

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### MATHEMATICS AND STATISTICS

\* **ABEBE-GEBREKIDAN, ASHEBER**, Associate Professor, 2007. PhD, Western Michigan; BS, Addis Ababa

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\* **BALDWIN, STEWART L.**, Professor 1997. PhD, BA, Colorado

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  - \* **CAO, YANZHAO**, Associate Professor, 2008. PhD, Virginia Tech; MS, BS, Julin
  - \* **CARPENTER, DAVID M.**, Professor, 2010. PhD, Louisiana-Lafayette; MS, BS, South Alabama
  - \* **DESOUZA, GERALDO S.**, Professor, 1993. PhD, SUNY-Albany.; MA, Rochester; BS, Brazil
  - \* **GLOTOV, DMITRY**, Assistant Professor, 2007, PhD, MS, Purdue, BS, Missouri
  - \* **GOETERS, HERMAN P.**, Professor, 1997. BA, Southern Connecticut State; PhD, MA, Connecticut
  - \* **GOVIL, NARENDRA K.**, Professor, 1986. MS, Aligarh; BS, Agra; PhD, Montreal
  - \* **GRUENHAGE, GARY F.**, Professor, 1983. PhD, MA, California; BS, Nebraska
  - \* **HAN, XIAOYING**, Assistant Professor, 2007. PhD, MS, Buffalo, NY, BS, Univ. Science & Technology of China
  - \* **HAN, YONGSHENG**, Professor 1997. PhD, Washington (St. Louis); MA, BA, Peking.
  - \* **HANKERSON, DARRELL R.**, Professor, 1992. PhD, MA, Nebraska; MS, BS, Mankato State
  - \* **HARRIS, GREG A.**, Associate Professor 1992. PhD, Utah; MS, Montana St.; BA, California-Fullerton
  - \* **HETZER, GEORG**, Professor 1987. DSc, MS, BS, Technical-Aachen
  - \* **HOFFMAN, DEAN G.**, 1977. PhD, Waterloo; BA, Union
  - \* **HOLMES, RANDALL R**, Professor, 2007. PhD, Illinois; MA, BSEd, Missouri
  - \* **HUANG, HUAJUN**, Associate Professor, 2010. PhD Yale
  - \* **JENDA, OVERTOUN M.**, Associate Provost and Professor, 1988. PhD, MA, Kentucky; BS, Malawi
  - \* **JOHNSON JR, PETER D.**, Professor, 1980. PhD, Michigan; BS, Brown
  - \* **KALLENBERG, OLAV H.**, Professor, 1986. DTech, Chalmers; MTech, BCE, Royal Tech
  - \* **KILGORE, THEODORE ALBERT**, Professor 1994. PhD, Texas; AB, Michigan
  - \* **KUPERBERG, KRYSZYNA M.**, Professor, 1984. PhD, Rice; MS, Warsaw
  - \* **KUPERBERG, WLODZIMIERZ**, Professor, 1996. PhD, MS, Warsaw
  - \* **LEONARD, DOUGLAS A.**, Professor, 1981. PhD, Ohio State; BS, Michigan
  - \* **LIAO, MING**, Professor, 1997. PhD, Stanford
  - \* **LINDNER, CHARLES C.**, Distinguished Professor, 1969. PhD, MS, Emory; BS, Presbyterian
  - \* **MEIR, AMNON J.**, Professor, 2001. PhD, Carnegie Mellon; BS, Technion
  - \* **MINC, PIOTR**, Professor, 1989. PhD, MS, Warsaw
  - \* **NANE, ERKAN**, Assistant Professor, 2008. PhD, Purdue; MS, BS, Bogazici
  - \* **NYLEN, PETER M.**, Professor, 2001. PhD, MS, Clemson; BS, Stetson.
  - \* **PATE, THOMAS H.**, Professor 1988. PhD, Emory
  - \* **PHELPS, KEVIN T.**, Professor, 1987. PhD, MS, Auburn; BA, Brown
  - \* **RODGER, CHRIS**, Scharnagel Professor, 1982. PhD, Reading; MS, BS, Sydney
  - \* **SAMPSON, GARY M.**, Professor 1991. PhD, Syracuse; MA, BA, Temple
  - \* **SCHMIDT, PAUL G.**, Professor, 2006. MS, PhD, Aachen Tech
  - \* **SHEN, WENXIAN**, Professor, 1997. BS, Zhejiang; PhD, Georgia Tech; MS, Beijing
  - \* **SHIN, HYEJIN**, Assistant Professor, 2005. PhD, Texas A&M; BS Chonnam National; MS, Seoul National
  - \* **SLAMINKA, EDWARD E.**, Associate Professor, 1991. PhD, MS, Michigan; BS, Case Western
  - \* **SMITH, MICHEL**, Professor and Chair, 2002. PhD, Emory; BA, Texas
  - \* **STUCKWISCH, STEPHEN E.**, Assistant Professor, 1982. PhD, MA, Arizona St.; BA, SUN-Binghamton
  - \* **SZULGA, JERZY**, Professor, 1993. PhD, MS, Wroclaw
  - \* **TAM, TIN YAU**, Professor, 1998. PhD, BS, Hong Kong
  - \* **TEIRLINCK, LUC M.**, Professor, 1982. PhD, BS Vrije
  - \* **UHLIG, FRANK**, Professor, 1971/72, PhD, MA, California Inst. of Tech.
  - \* **ULLERY, WILLIAM D.**, Professor, 1997. PhD, MS, Arizona; BA, Harvard
  - \* **ZALIK, RICHARD A.**, Professor, 1985. DS, Technion; Lic, Buenos Aires
  - \* **ZENG, PENG**, Associate Professor, 2010, PhD, MS, BS, Purdue
  - \* **ZINNER, BERTRAM**, Associate Professor, 1989. PhD, Utah; BS, Darmstadt
- ### MECHANICAL ENGINEERING
- \* **BEALE, DAVID G.**, Professor, 1989. BS, Michigan Tech; PhD, MSE, Michigan
  - \* **BEVLY, DAVID M.**, Philpott-Westpoint Stevens Professor, 2001. PhD, MS, MIT, Stanford; BS, Texas A&M
  - \* **BHAVNANI, SUSHIL H.**, Professor, 1987. PhD, Iowa State; MS, Indian Inst.; BS, Bangalore
  - \* **BURCH, THOMAS E.**, Visiting Assistant Professor, 1992. PhD Louisiana State; MS, BS, Auburn
  - \* **CHENG, ZHONG YANG**, Associate Professor, 2002. PhD, MS, B.A, Xian Jiaotong
  - \* **CHIN, BRYAN A.**, Professor and Director MREC, 1981. PhD, MS, Stanford; BS, Auburn
  - \* **CHOE, SONG YUL**, Associate Professor, 1991, PhD, Tech. Univ.-Berlin; BS, Hanyang
  - \* **CROCKER, MALCOLM J.**, Distinguished University Professor, 1983. MS, BS, Southampton; PhD, Liverpool
  - \* **DYER, DAVID F.**, Professor, 1965; BME, Tennessee; PhD, MME, Georgia Tech
  - \* **FERGUS, JEFFREY W.**, Professor, 1992. PhD, Pennsylvania; BS, Illinois
  - \* **FLOWERS, GEORGE T.**, Dean, Graduate School, and Professor, 1990. PhD, MS, Georgia Tech; B.M.E., Auburn
  - \* **HARRIS, DANIEL K.**, Associate Professor, 1997. MS, Johns Hopkins; BS, Maryland; PhD, Purdue
  - \* **HONG, JONG WOOK**, Associate Professor, 2004. PhD, Tokyo; MS, BS, Pukyong
  - \* **JACKSON, ROBERT L.**, Assistant Professor, 2004. PhD, MS, BS, Georgia Tech
  - \* **JONES, PETER D.**, Woltosz WEMS Professor, 1990. BS, California-Berkeley; PhD, Rice; OE, MIT
  - \* **KHODADADI, JEYHOON M.**, Professor, 1987. PhD, MS, BS, Illinois
  - \* **KIM, DONG-JOO**, Associate Professor, 2003. PhD, North Carolina State; MS, BS, Yonsei
  - \* **KNIGHT, ROY W.**, Assistant Professor, 1986. PhD, Texas; MS, B.M.E. Maryland
  - \* **LALL, PRADEEP**, Thomas Walter Professor and Director CAVE, 2002. PhD, MS Maryland; BEME, Delhi
  - \* **MACKOWSKI, DANIEL W.**, Associate Professor, 1990. PhD, MS, Kentucky; BS, Centre-Kentucky
  - \* **MADSEN, NELS**, Professor and Associate Dean, 1978. PhD, MS, BA, Iowa
  - \* **MARGHITU, DAN B.**, Professor, 1994. PhD, Southern Methodist; DEA, Toulouse; DE, Craiova
  - \* **OVERFELT, RUEL A.**, Professor, 1991. PhD, MS, Vanderbilt; BS, Tennessee Tech
  - \* **PROROK, BART**, Associate Professor, 2002. PhD, MS, Illinois-Chicago; MS, Pittsburgh; BS, Penn State.
  - \* **RAJU, POLAPRAGADA K.**, Professor, 1984. PhD, Indian Inst.; MS, Madras; BS, Sri Venkateswara
  - \* **SIMONIAN, ALEKSANDR L.**, Professor, 2003. DSc, Inst. Of Applied Biochemistry, Moscow; PhD, Acad. Sci. Armenia; MS, Yerevan St.

## Faculty

- \* **SINHA, SUBHASH C.**, Professor, 1987. PhD, Wayne State; MS, Indian Inst.; BS, Bihar
- \* **SUHLING, JEFFREY C.**, Professor and Chair, 1985. PhD, MS, BS, Wisconsin
- \* **THAKUR, MRINAL**, Professor, 1990. PhD, MS, Case Western Reserve; BS, Visua/Bharat
- \* **TIPPUR, HAREESH V.**, Professor, 1990. PhD, SUNY; ME, Indian Inst; BE, Bangalore
- \* **ZEE, RALPH H.**, Associate Dean and Professor, 1986. PhD, MS, BS, Wisconsin
- \* **POPE, WILLIAM S.**, Assistant Professor, 2008. DNP, MSN, Samford; BSN, Auburn-Montgomery
- \* **RAINES, KIMBERLY H.**, Instructor, 2007. MSN, Georgia State; BSN, West Georgia
- \* **SANDERSON, BONNIE K.**, 2009. PhD, MA, Alabama-Birmingham; BSN, Central Florida
- \* **SCHUESSLER, JENNIFER B.**, Associate Dean and Professor, 1990. DS, MSN, Alabama-Birmingham; BSN, Jacksonville State
- \* **WILDER, BARBARA F.**, Associate Professor, 1996. MSN, DS, Alabama-Birmingham; MSN, Troy State

## MUSIC

- \* **BAIRD, SARA LYNN**, Professor, 2009. PhD, Florida State; MM, Cincinnati; BM, Florida State
- \* **DEGOTI, MARK D.**, Assistant Professor, 2010. DM, MM, Indiana; BM, Michigan
- \* **DUNN-POWELL, ROSEPHANYE**, Professor, 2001. DM, Florida State; MM, Westminster; BME, Alabama State
- \* **GARRISON, KAREN H.**, Professor, 1983. DM, Florida State; MM, South Carolina; BME, North Carolina
- \* **GOLDSTEIN, HOWARD A.**, Associate Professor, 1992. DM, MM, Peabody; BA, UCLA
- \* **GOOD, RICHARD D.**, Professor, 1995. DMA, Arizona State; MM, LSU; BME, Mansfield
- \* **KNIPSCHILD, ANN K.**, Professor, 1985. DMA, SUNY-Stony Brook; MM, Yale; BM, BS, Missouri
- \* **KOON, J. MICHAEL**, Assistant Professor, 2008. DMA, Wisconsin; MM, Cincinnati; BA Peabody Inst Johns Hopkins
- \* **ODOM, DAVID**, Assistant Professor, 2007. DM, Florida State; MM, Colorado; BM, Stetson
- \* **POWELL, WILLIAM C.**, Associate Professor, 2001. PhD, Florida State; MM, Westminster; BME, Alabama State
- \* **ROSENER, DOUGLAS B.**, Associate Professor, 2005. DMA, Colorado; MM, North Texas; BS, Penn State
- \* **SCHAFFER, WILLIAM R.**, Associate Professor, 1998. DMA, North Carolina-Greensboro; MM, Illinois; BME, Indiana
- \* **SAMOLESKY, JEREMY**, Assistant Professor, 2007. DMA, Eastman School; MM, Washington; BM, Manitoaba
- \* **SPURLIN, ADAM C.**, Assistant Professor, 2007. DMA, Louisiana State; MA, BS, Alabama
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## NURSING

- \* **ALL, ANITA**, Professor & Director of Graduate Program, MS, PhD. Northern Colorado, BSN, Wyoming
- \* **BYRD, LINDA**, Clinical Assistant Professor, 2002. PhD, Auburn; MSN, UAB; BSN, Florida State
- \* **DUBOIS, EVA JEAN**, Associate Clinical Professor 2000. EdD, Auburn, FNP, Mississippi Women's; MSN, Mississippi Medical; BSN Pittsburgh State
- \* **ELLISON, KATHY JO**, Associate Professor, 2001. DS, MSN, Alabama-Birmingham; BSN, Tennessee
- \* **GORE, TERESA**, Clinical Assistant Professor, 2005. DNP Alabama-Birmingham; MSN, Phoenix; BSN, Jacksonville State
- \* **HENDRICKS, CONSTANCE S.**, Professor, 2007. PhD, Boston College; BSN, MSN, Alabama-Birmingham
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- \* **NEWSCHWANDER, GREGG**, Dean and Professor, 2010. PhD, Marquette; MSN, Colorado; BSN, Rutgers
- \* **PARKER, FRANCINE**, Associate Professor, 2006. EdD, Auburn; MSN, Alabama - Birmingham; BSN, Troy Montgomery
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## NUTRITION, DIETETICS, AND HOSPITALITY MANAGEMENT

- \* **AYOUN, BAKER M.**, Assistant Professor, 2007. PhD, Oklahoma State; MBA, Yarmouk, Jordan; BBA, Mu'tah, Jordan
- \* **CRAIG-SCHMIDT, MARGARET C.**, Professor, 1977. PhD, Wisconsin; AB, Duke
- \* **CRAYTON, EVELYN F.**, Professor, 1977. EdD, Auburn; MS, St. Louis
- \* **DOUGLAS, ALECIA**, Assistant Professor, 2008. PhD, Perdue; MS, Delaware; BS, West Indies, Jamaica
- \* **FELLERS, ROBIN B.**, Associate Professor, 1988. PhD, Florida; MS, Kansas State; Dipl H Sc, New Zealand
- \* **GROPPER, SAREEN S.**, Professor, 1988. PhD, MS, Florida State; BS, Maryland
- \* **HUBBARD, SUSAN S.**, Associate Dean and Professor, 1993. EdD, MEd, BS, Auburn
- \* **HUGGINS, KEVIN W.**, Associate Professor, 2003. PhD, Wake Forest; BS, North Florida
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- \* **KIM, KYANGMI**, Assistant Professor, 2008. PhD, VPI; MS, Purdue; BS, Korea
- \* **MARTIN, DAVID**, Assistant Professor, 2010. PhD, MS, BS, Auburn
- \* **MATHEWS, SURESH T.**, Associate Professor, 2005. PhD, BS, Madras-India, MS, Bharathia
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## PATHOBIOLOGY

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- \* **BOUDREAUX, MARY K.**, Professor, 1986. PhD, Cornell; DVM, LSU
- \* **BROCK, KENNY V.**, Professor, 1997. PhD, Tennessee; MS, DVM, Auburn
- \* **CHRISTOPHERSON, PETER W.**, Assistant Professor, 2008. PhD, Auburn; DVM, BS, Wisconsin
- \* **COX, NANCY R.**, Professor and Interim Director, 1985. PhD, Alabama-Birmingham; MS, Auburn, DVM, BS, Texas A&M
- \* **GIVENS, MAURICE D.**, Alumni Professor, 1996. DVM, PhD, Auburn
- \* **HENDRIX, CHARLES M.**, Professor, 1981. PhD, MS, Minnesota; DVM, Georgia
- \* **HOERR, FREDERIC J.**, Professor, 1987. PhD, MS, DVM, Purdue
- \* **IRWIN, MICHAEL H.**, Research Associate Professor, 2006. PhD, Alabama-Birmingham
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- \* **JOINER, KELLYE S.**, Assistant Professor, 2007. PhD, DVM, Auburn

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- \* **NEWTON, JOSEPH C.**, Associate Professor, 1993. DVM, PhD, MS, Auburn
- \* **NUSBAUM, KENNETH E.**, Professor, 1982. PhD, MS, Georgia; DVM, Cornell
- \* **PETRENKO, VALERY A.**, Professor, 2000. PhD, DS, MS, Moscow State
- \* **PINKERT, CARL A.**, Associate Vice President for Research and Professor, 2006. PhD, MS, Georgia
- \* **PRICE JR, STUART B.**, Associate Professor, 1990. PhD, Oklahoma Health Ctr; BS, Oklahoma State
- \* **SARTIN, EVA A.**, Professor, 1982. PhD, Auburn; DVM, MS, Oklahoma State
- \* **SMITH, BRUCE F.**, Professor, 1993. PhD, VMD, Pennsylvania; BA, Haverford
- SPANGLER, ELIZABETH A.**, Assistant Professor, 2005. PhD, California-Berkeley; DVM, California-Davis; BA, Northwestern
- SPENCER, JENNIFER A.**, Instructor, 1998. PhD, Southern Africa; BS, Natal
- \* **TORO, HAROLDO E.**, Professor, 2002. PhD, Giessen; DVM, Chile
- \* **VAN GINKEL, FREDERIK**, Associate Professor, 2004. PhD, Mississippi; MS, BS, Agricultural U.- Wageningen
- \* **VAN SANTEN, VICKY L.**, Professor, 1988. PhD, Chicago; AB, McPherson
- \* **WEISS, RICHARD C.**, Associate Professor, 1985. PhD, Cornell; VMD, Pennsylvania; BS, Rutgers
- \* **WELLES, ELIZABETH G.**, Professor, 1990. BS, North Carolina State; PhD, Georgia; DVM, Auburn
- \* **WRIGHT, JAMES C.**, Professor, 1985. PhD, MS, Missouri; DVM, Georgia; BS, Virginia Tech

## PHARMACAL SCIENCES

- AMIN, RAJESH H.**, Assistant Professor, 2009. PhD, MS, BS, Wayne State
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- \* **CLARK, C. RANDALL**, Professor, 1973. PhD, Mississippi; BS, Berry
- \* **DERUITER, JACK**, Professor, 1983. PhD, Virginia; MS, Michigan; BA, Hope
- DHANASEKARAN, MURALIKRISHNAN**, Assistant Professor, 2005. PhD, MPharm, Jadavpur; BPharm, Annamali
- MCQUEEN, CHARLENE A.**, Professor and Head, 2007. PhD, Michigan; MS, New York Univ; BS, Marywood
- \* **PARSONS, DANIEL L.**, Professor, 1982. PhD, BSPHarm, Georgia
- RAMAPURAM, JAYACHANDRA**, Assistant Professor, 2005. PhD, MPharm, Banaras Hindu; BPharm, Madras
- \* **RAVIS, WILLIAM R.**, Professor, 1977. BSPHarm, Temple; PhD, Houston
- SHEN, JIANZHONG**, Assistant Professor, 2008. PhD, Missouri; MMed, DiplPharm, Madras
- \* **SMITH, FORREST T.**, Associate Professor, 1987. PhD, Virginia Commonwealth; BS, Virginia Tech
- \* **SUPPIRAMANIAM, VISHNU**, Associate Professor, 2001. PhD, MS, Auburn; DVM, Madras Veterinary

## PHARMACY - ADMINISTRATION

- EVANS, R. LEE**, Dean and Professor, 1994. PharmD, Tennessee; BSPHarm., Georgia
- JUNGNICHEL, PAUL W.**, Professor and Associate Dean, 1997. PhD, Nebraska; MS, Kansas; BSPHarm, Oregon State
- MARLOWE, KAREN F.**, Associate Professor and Assistant Dean, 2000. PharmD, BSPHarm, Auburn

## PHARMACY CARE SYSTEMS

- \* **FLYNN, ELIZABETH A.**, Associate Research Professor, 1986. BS, Florida; PhD, Auburn; MS, North Carolina

- FOX, BRENT I.**, Assistant Professor, 2006. PhD, PharmD, BSPHarm, Auburn
- KAVOOKJIAN, JAN**, Assistant Professor, 2006. PhD, MBA, BS, Auburn
- \* **VILLAUME, WILLIAM A.**, Associate Professor, 1983. PhD, Ohio State; MDiv, Luthern Theo; BA, Waterloo
- WESTRICK, SALISA C.**, Assistant Professor, 2005. PhD, Wisconsin-Madison; MS, Illinois State; BS, Chulalongkorn

## PHARMACY PRACTICE

- ADAMS, MOLLY E.**, Assistant Clinical Professor, 2008. PharmD, BS, Oklahoma
- ANDRUS, MIRANDA R.**, Associate Clinical Professor, 2000. Pharm.D, Samford
- \* **BRAXTON-LLOYD, KIMBERLY**, Associate Professor, 1998. PharmD, BSPHarm, Auburn
- CAIN, LAURA SUSAN**, Assistant Clinical Professor, 2008. PharmD, Georgia
- CARROLL, DANA G.**, Associate Clinical Professor, 2006. PharmD, BSPHarm, Auburn
- CHUNG, ALLISON M.**, Associate Clinical Professor, 2002. PharmD, Missouri-Kansas City; BS, California-San Diego
- DONALDSON, AMY R.**, Associate Clinical Professor, 2001. PharmD, BS, Pharm, Auburn
- DUCHARME, M. MICHELLE**, Assistant Clinical Professor, 2006. PharmD, Auburn; BS, Salisbury; BA, Iowa
- EILAND, LEA C.**, Associate Clinical Professor, 2002. PharmD, Texas
- EVANS, R. LEE**, Professor and Dean, 1994. PharmD, Tennessee; BSPHarm, Georgia
- HAMILTON, LESLIE A.**, Assistant Clinical Professor, 2009. PharmD, BS, Tennessee
- HELMS, KRISTEN**, Associate Clinical Professor, 2003. PharmD, North Carolina; BS North Carolina State
- HESTER, E. KELLY**, Associate Clinical Professor, 2002. PharmD, BSPHarm, Auburn
- HORNSBY, LORI B.**, Assistant Clinical Professor, 2006. PharmD, BSPHarm, Auburn
- JACKSON, CHERRY W.**, Professor, 2007. PharmD, BSPHarm, South Carolina; BS Winthrop
- JOHNSON, JARED K.**, Assistant Clinical Professor, 2005. PharmD, Auburn
- JUNGNICHEL, PAUL W.**, Professor and Associate Dean, 1997. PhD, Nebraska; MS, Kansas; BSPHarm, Oregon State
- KARWA, RAKHI**, Assistant Clinical Professor, 2007. PharmD, California-SanFrancisco; BS, Ohio State
- KELLEY, KRISTI W.**, Associate Clinical Professor, 2001. PharmD, BSPHarm., Auburn
- KLEPPINGER, ERIKA L.**, Associate Clinical Professor, 2003. PharmD, BSPHarm, Philadelphia Coll of Pharm
- LEOS, CARA L.**, Assistant Clinical Professor, 2005. PharmD, New Mexico
- LILES, ANNE MARIE**, Assistant Clinical Professor, 2006. PharmD, Auburn; BS, Queens
- LINDSEY, WESLEY T.**, Assistant Clinical Professor, 2006. PharmD, Campbell
- LORENZ, RAYMOND A.**, Assistant Clinical Professor, 2007. PharmD, Albany Coll Pharm
- MARLOWE, KAREN F.**, Associate Professor and Assistant Dean, 2000. PharmD, BSPHarm, Auburn
- NOVELL, MARILYN J.**, Assistant Clinical Professor, 2009. PharmD, Rutgers
- OLIN, BERNIE R. III**, Associate Clinical Professor, 2002. PharmD, BSPHarm., Missouri-Kansas City
- PHILLIPPE, HALEY M.**, Assistant Clinical Professor, 2007. PharmD, Auburn
- PINNER, NATHAN A.**, Assistant Clinical Professor, 2009. PharmD, Tennessee; BS Mississippi State

## Faculty

**SACKS, GORDON S.**, Professor and Head, 2009. PharmD, Texas; BSPHarm, Auburn

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**STARR, JESSICA A.**, Assistant Clinical Professor, 2006. PharmD, Auburn

**THOMAS, SELBY G.**, Assistant Professor, 1989. PharmD, BSPHarm., Auburn

**VINTI, ANGELA R.**, Assistant Clinical Professor, 2007. PharmD, SUNY-Buffalo

**WARGO, KURT A.**, Associate Clinical Professor, 2003. PharmD, Creighton; BS, Kent State

**WHITELY, HEATHER P.**, Assistant Clinical Professor, 2006. PharmD, South Carolina; BS, Clemson

**WRIGHT, BRAD**, Assistant Clinical Professor, 2008. PharmD, Auburn

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## PHILOSOPHY

**DAVIS, WILLIAM H.**, Professor, 1966. PhD, Rice; MA, BA, Abilene Christian

**ELFSTROM, GERARD A.**, Mosely Professor, 1988. PhD, MA, Emory; BA, Cornell

**GORODEISKY, KEREN**, Assistant Professor, 2008. PhD, Boston; BA, Tel Aviv

**GRAHAM, JODY L.**, Associate Professor, 1995. PhD, MA, Ohio State; BA, Western Ontario

**HAMAWAKI, ARATA**, Assistant Professor, 2007. PhD, Harvard

**JOLLEY, KELLY D.**, Professor & Chair, 1991. PhD, Rochester

**LONG, RODERICK T.**, Professor, 1998. PhD, MA, Cornell; AB, Harvard

**MARCUS, ERIC A.**, Associate Professor, 2000. PhD, Pittsburgh; BA, Carleton

\* **PENASKOVIC, RICHARD**, Professor, 1984. PhD, Munich; MA, BA, Wuerzburg

**ROHRBAUGH, GUY**, Associate Professor, 2003, PhD, MA, UCLA, BA, Pomona

**SHELLEY, JAMES R.**, Associate Professor, 2000. PhD, MA, Chicago; BA, Brigham Young

**SUTTON, JONATHAN**, Associate Professor, 2006. PhD, Rutgers

**WATKINS, G. MICHAEL**, Lanier Professor, 1994. PhD, Ohio State; MA, BA, Tennessee

**WHITE, STEPHEN**, Associate Professor, 1985. PhD, MA, Georgia; BA, Oglethorpe

## PHYSICS

**AHYI, AYAYI CLAUDE**, Assistant Research Professor, 1997, PhD, Lille I, MS, USTL I

**BALANCE, CONNOR**, Assistant Research Professor, 1999, PhD, Belfast; BS, Belfast

\* **BOZACK, MICHAEL J.**, Professor, 1988. PhD, Oregon; MA, Western Baptist; MS, Michigan State

\* **DONG, JIANJUN**, Associate Professor, 2000. PhD, MS, Ohio; BS, Beijing

**FOGLE, MICHAEL, R., JR.**, Assistant Professor, 2008. PhD, Stockholm; BS, East Carolina Sweden

\* **HANSON, JAMES D.**, Professor, 1984. PhD, Maryland; MS, Corwell; BA, Kalamazoo

\* **HARTWELL, GREGORY J.**, Associate Research Professor, 1998. PhD, Auburn; BS, Mississippi State

\* **HINATA, SATOSHI**, Professor, 1980. BE, Tokyo; PhD, MS, Illinois

\* **KNOWLTON, STEPHEN F.**, Professor, 1988. PhD, MIT; BA, Middlebury

\* **LANDERS, ALLEN L.**, Associate Professor, 1999. PhD, BS, Kansas State

\* **LIN, YU**, Professor, 1994. PhD, Alaska; MS, Inst. of Geophysics; BS, Peking

\* **LOCH, STUART D.**, Assistant Professor, 2001. PhD Strathclyde-Glasgow, BS Strathclyde

\* **OKS, EVGUENI**, Professor, 1990. DS, USSR Acad.; PhD, MS, Moscow Tech

\* **PARK, MINSEO**, Associate Professor, 1998. PhD, North Carolina State; MS, Iowa State; BS, Yonsei

\* **PEREZ III, JOSEPH D.**, Professor and Head, 1988. PhD, Maryland; BS, South Loyola

\* **PINDZOLA, MICHAEL S.**, Professor, 1977. PhD, Virginia; BA, Sewanee

\* **ROBICHEAUX JR, FRANCIS J.**, Alumni Professor, 1993. BA, MS, PhD, Chicago

\* **THOMAS JR, EDWARD E**, Associate Professor, 1999. PhD, Auburn; MS, MIT; BS, Florida Inst. Tech

\* **TIN, CHIN-CHE**, Associate Professor, 1987. PhD, Alberta; MS, BS, London

**WANG, XUEYI**, Assistant Research Professor, 1998, PhD, Center for Space Science & Applied Rsch, MS, China

\* **WERSINGER, JEAN-MARIE P.**, Associate Professor, 1979. PhD, Ecole-Lausanne; BS, Greable

\* **WILLIAMS JR, JOHN R.**, J.T. Walter Professor, 1974. PhD, North Carolina State; BS, North Georgia

## POLITICAL SCIENCE

\* **BECKER, THEODORE L.**, Holladay Professor, 1988. PhD, Northwestern; MA, Maryland; LLB, Rutgers

\* **BOBROWSKI, PAULA E.**, Associate Dean and Professor, 2006. PhD, Syracuse; MBA, BS, Oregon

\* **BOWLING, CYNTHIA J.**, Associate Professor, 1998. PhD, MA, North Carolina; BA, Tennessee

\* **BROWN, M. MITCHELL**, Assistant Professor, 2006. PhD, MA, Maryland; MA, George Washington; BA, Meredith

\* **BROWN, STEVEN P.**, Lanier Associate Professor, 1998. PhD, MA, Virginia; BA, Brigham Young

\* **BURNS, MARK**, Associate Professor, 1975. BA, Lambuth; PhD, AM, Indiana

\* **CLARK, CALEB M.**, Alumni Professor, 1992. PhD, Illinois; BA, Beloit

\* **CRYSTAL, JILL A.**, Professor, 1994. PhD, MA, Harvard; BA, Cornell

\* **ERWIN, CATHLEEN O.**, Assistant Professor, 2010. PhD, Alabama Birmingham; MBA, Auburn Montgomery; BA, Auburn

\* **GADZEY, ANTHONY T.**, Associate Professor, 1994. PhD, MA, Denver; MA, Carleton

\* **GRYSKI, GERARD S.**, Liles Professor and Chair, 1982. PhD, Massachusetts; BBA, CCNY

\* **HALE, KATHLEEN**, Assistant Professor, 2006. PhD, Kent State; JD, Akron; BS, Miami (Ohio)

\* **HARRIS, PAUL A.**, Associate Professor, 2009. PhD, Auburn; MPA, Georgia Southern; BA, Excelsior

\* **HUNT, STACEY L.**, Assistant Professor, 2009. PhD, Rutgers; BA, Gustavus Adolphus

\* **JARDINE, MURRAY D.**, Lanier Professor, 1997. PhD, Duke; MA, BBA, Texas Tech; BSc, Regina

\* **JOHNSON, PAUL M.**, Associate Professor, 1991. PhD, MA, Stanford; BA, Rice

\* **JUNG, CHANGHOON**, Associate Professor, 2000. DPA, Georgia; MPA, Texas Arlington; MA, Kyung; BA, Pusan

\* **KELLY, WILLIAM E.**, Associate Professor, 1973. PhD, Nebraska; MA, New Mexico State; BA, St. Michael's

\* **MCELDOWNEY, RENE P.**, Associate Professor, 1992. PhD, Virginia Tech; MBA, Marshall; BS, West Virginia

\* **PERRY, CLIFTON B.**, Hudson Professor, 1984. PhD, MA, UC-Santa Barbara; JD, Faulkner; LL.M., Loyola (Chicago); LL.M., Arizona

\* **RUSSELL, ERIC D.**, Assistant Professor, 2008. PhD, MA, BA, Ohio State

\* **SCHOOLEY, SHAWN E.**, Assistant Professor, 2008. PhD, Virginia Tech; MPA, BA, West Florida

\* **SEROKA, JAMES H.**, Professor, 1998. PhD, MA, Michigan State; BA, Michigan

## POLYMER AND FIBER ENGINEERING

- \* **ADANUR, SABIT**, Professor, 1992. PhD, MS, North Carolina State; BS, Istanbul Tech
- \* **AUAD, MARIA L.**, Assistant Professor, 2006, PhD, MS, National Mar de Plata
- \* **BUSCHLE-DILLER, GISELA**, Associate Professor, 1995. PhD, MS, BS, Stuttgart
- \* **EL-MOGAHZY, YEHIA E.**, Professor, 1986. PhD, N.C. State; MS, BS, Alexandria U
- DAVIS, EDWARD W.**, Assistant Research Professor, 2007 PhD Akron, BS, MS, Tulane
- \* **GOWAYED, YASSER A.**, Professor, 1992. PhD, North Carolina State; MS, American U. of Cairo; BS, Ain-Shams
- \* **SCHWARTZ, PETER**, Professor and Head, 2001. PhD, NC State; MA, Pittsburgh; MSBTE, Georgia Tech
- \* **THOMAS, GWYNEDD A.**, Associate Professor, 1996. PhD, Clemson; MS, BS, Georgia Tech
- ZHANG, XINYU**, Assistant Professor, 2005. PhD, MS, Texas-Dallas; MS, BS, Tianjin

## POULTRY SCIENCE

- \* **BELL, LEONARD**, Professor, 1994. PhD, MS, Minnesota; BA, Virginia Tech
- \* **BERRY, WALLACE D.**, Associate Professor, 1995. PhD, MS, BS, North Carolina State
- \* **BILGILI, SACIT F.**, Professor and Extension Specialist, 1985. PhD, Auburn; MS, Oregon State; V.M.D., Ankara
- \* **BLAKE, JOHN P.**, Professor and Extension Specialist, 1989. PhD, Virginia Tech; MS, Maine; BS, Pennsylvania State
- \* **CONNER, DONALD E.**, Professor and Head, 1989. PhD, MS, BSE.H., Georgia
- \* **CURTIS, PATRICIA A.**, Professor, 2002. PhD, MS, Texas A & M; BS, Texas Womens
- \* **DOZIER, WILLIAM, A., III.** Associate Professor, 2008. PhD, BS, Auburn, MS, Kentucky
- FASINA, YEWANDE O.**, Assistant Professor, 2007. PhD, MS Canada, BS, Nigeria
- \* **GIAMBRONE, JOSEPH J.**, Professor, 1977. PhD, Georgia; MS, BS, Delaware
- \* **HESS, JOSEPH B.**, Professor and Extension Specialist, 1992. PhD, MS, Georgia; BS, Penn State
- \* **HUANG, TUNG-SHI**, Associate Professor, 2002. PhD, Florida; MS, BS, National Chung-Hsing
- \* **LIEN, ROGER J.**, Associate Professor, 1989. PhD, North Carolina State; MS, BS, Texas A&M
- \* **MACKLIN, KENNETH S.**, Associate Professor and Extension Specialist, 2006. PhD, Auburn; MS, BS, Southern Illinois
- \* **MCKEE, SHELLY R.**, Associate Professor, 2002. PhD, MS, BS, Texas A & M
- \* **NORTON JR, ROBERT A.**, Professor, 1995. PhD, Arkansas; MS, BS, Southern Illinois;
- SINGH, MANPREET**, Assistant Professor, 2007. PhD, Iowa State, MS Kansas State, BS, India
- \* **WEESE, SONDR A JEAN**, Professor and Extension Specialist, 1987. PhD, Tennessee; MA, BS, Eastern Kentucky

## PSYCHOLOGY

- \* **ARCEDIANO, FRANCISCO**, Assistant Professor, 2008. PhD, ABD, BA, Deusto
- \* **BARKER, LEWIS M.**, Professor, 2000. PhD, MA, Florida State; BA, Occidental
- \* **BURKHART, BARRY R.**, Professor, 1974. PhD, MS, BA, Florida State
- \* **BUSKIST, WILLIAM F.**, Alumni Professor, 1982. PhD, BS, Brigham Young
- \* **CALLENDER, AIMEE**, Assistant Professor, 2008. PhD, MA, Washington in St. Louis; BA, Wheaton

- \* **CARR, JAMES**, Associate Professor, 2008. PhD, MS, Florida State; BA, North Florida
- CLARK, MALISSA**, Assistant Professor, 2010. PhD, MA, Wayne State; BA, Michigan
- \* **CORREIA, CHRISTOPHER J.**, Associate Professor, 2002. PhD, MS, Syracuse; BS, Scranton
- \* **ESCOBAR, MARTHA**, Lanier Associate Professor, 2002. PhD, MA, SUNY-Binghamton; BA, Deusto
- FAN, JINYAN**, Assistant Professor, 2010. PhD, Ohio State; M.Ed., Ba, China Normal
- \* **FRANCO-WATKINS, ANA**, Assistant Professor, 2006. PhD, Maryland; MA, William and Mary; BA St. Mary's
- \* **GILLIS, JENNIFER**, Assistant Professor, 2006. PhD, MA, BA, Binghamton
- GITTER, SETH**, Instructor, 2010. PhD, MS, Florida State; BA, Minnesota
- \* **KATZ, JEFFREY S.**, Alumni Professor, 2000. PhD, MS, Tufts; BA, Ithaca
- \* **KNIGHT, ELIZABETH BRESTAN**, Lanier Associate Professor, 1999. PhD, Florida; BA, Emory
- \* **LAZARTE, ALEJANDRO A.**, Assistant Professor, 1992. PhD, MS, MS, Purdue
- \* **LEBLANC, LINDA A.**, Associate Professor, 2009. PhD, MA, BS, Louisiana State
- \* **MATTSON, RICHARD**, Assistant Professor, 2007. PhD, MA SUNY-Binghamton; BA, SUNY-Genesco
- \* **NEWLAND, M. CHRISTOPHER**, Alumni Professor, 1988. PhD, MS, Georgia Tech; BEE, Auburn
- \* **SHAPIRO, STEVEN K.**, Associate Professor and Director, 1990. PhD, Miami; BA, Rhode Island
- \* **STEELE, MICHAEL M.**, Assistant Professor, 2009. PhD, MA, Kansas; BS, Utah State
- \* **SVYANTEK, DANIEL**, Professor and Chair, 2003, PhD, Houston, MA Ball State, BA Indiana
- \* **WEATHERS III, FRANK W.**, Professor, 1997. PhD, Indiana; BA, Butler
- WITTE, TRACY**, Assistant Professor, 2010. PhD, MS, Florida State; BS, Ohio State

SPECIAL EDUCATION, REHABILITATION, COUNSELING/  
SCHOOL PSYCHOLOGY

- \* **BUCKHALT, JOSEPH A.**, Wayne T. Smith Distinguished Professor, 1979. PhD, Vanderbilt; MS, BA, Auburn
- \* **CARNEY, JAMIE S.**, Professor, 1991. PhD, Ohio; MS, Youngstown State
- \* **CURTIS, REBECCA**, Associate Professor, 2004. PhD, Auburn; MS, Auburn; BS, Harding
- \* **DAGLEY, JOHN C.**, Associate Professor, 2003. PhD, Missouri; MEd, Indiana; BA, Culver-Stockton
- \* **DARCH, CRAIG B.**, Humana-Germany-Sherman Distinguished Professor, 1982. PhD, Oregon; MA, Wisconsin-Oshkosh; BS, Wisconsin-Madison
- \* **DUNN, CAROLINE**, Professor, 1991. PhD, MEd, Texas; BS, Miami
- \* **FLORES, MARGARET M.**, Assistant Professor, 2008. PhD, MEd, Georgia State; BA, Auburn
- \* **KLUCK, ANNETTE**, Assistant Professor, 2006. PhD, MA, Texas Tech; BA, Nebraska Wesleyan
- \* **MARTIN, JR, E. DAVIS**, Wayne T. Smith Distinguished Professor and Head, 2003. EdD, Virginia; MS, BS, Virginia Commonwealth
- \* **MCDANIEL, RANDALL S.**, Wayne T. Smith Distinguished Professor, 1974. EdD, Auburn; MRC, BSOT, Florida
- \* **PATTERSON, DESHAUNDA**, Assistant Professor, 2008. PhD, MEd, Georgia State; BA, Florida A&M
- \* **PIPES, RANDOLPH B.**, Professor, 1977. PhD, Texas; BS, Southeastern Oklahoma State
- \* **RABREN, KAREN S.**, Professor, 1994. PhD, MEd, Auburn; BA, Auburn-Montgomery



- \* **REILLY, AMY SUE**, Associate Professor, 1993. PhD, New Mexico; MS, Indiana; MA, New Mexico; BS, East Kentucky
- \* **ROBINSON, KATHY**, Visiting Assistant Professor, 2010, PhD, Auburn; MS, Mercer
- \* **SHIPPEN, MARGARET E.**, Associate Professor, 2005. PhD, Auburn; MEd, BS, Auburn-Montgomery
- \* **SIMPSON, ROBERT G.**, Professor, 1979. PhD, Florida; MA, Kentucky; BA, Vanderbilt
- \* **SUH, SUHYUN**, Associate Professor, 2001. EdD, Alabama; MS, CUNY; MA, BA, Ewha Womans
- \* **THOMAS, CHIPPEWA**, Associate Professor, 2005. PhD, MEd, Auburn; BA, Tuskegee

#### SCIENCES AND MATHEMATICS - ADMINISTRATION

- \* **SAVRDA, CHARLES E.**, Interim Dean, 1986. PhD, MS, Southern California; BA, Rutgers
- \* **WIT, LAWRENCE C.**, Associate Dean, 1976. PhD, Missouri; MS, Western Illinois; BS, Wheaton
- RICHARDSON, VELMA B.**, Associate Dean for Diversity and Multicultural Affairs, 2007. PhD Auburn; MS, BS, Tuskegee
- \* **RODGER, CHRIS**, Associate Dean for Research and Scharnagel Professor, 1982. PhD, Reading; MS, BS, Sydney

#### SOCIOLOGY, ANTHROPOLOGY AND SOCIAL WORK

- \* **ALLEY, KELLY D.**, Alumni Professor, 1991. PhD, MA, Wisconsin; BS, Cornell
- BACKMAN, CARL B.**, Instructor, 2003. PhD, MA, Cornell; BA Yale
- BURQUE, ANGELA D.**, Associate Clinical Professor, 1992. MSW, Florida State; BSSW, Alabama
- \* **CLIFFORD, JANICE E.**, Associate Professor, 1999. PhD, MA, BA, SUNY-Buffalo
- \* **COTTIER, JOHN W.**, Associate Professor, 1976. PhD, Missouri; MA, Alabama; BS, Auburn
- FURR, L. ALLEN**, Professor and Chair, 2010. PhD, LSU; MA Stephen F. Austin; MSSW, Louisville; BA, Texas A&M-Commerce
- GAETANO, ARIANE**, Assistant Professor, 2010. PhD, MA, Southern California; BA, Duke
- \* **KOWALSKI, GREGORY S.**, Professor, 1975. PhD, Kentucky; MS, North Dakota; BA, BS, Minnesota State
- LOCKE, CHRIS**, Assistant Professor, 2010. PhD, MSW, Ohio State; BA, Wright State
- \* **MOHAN, RAJ P.**, Professor, 1973. PhD, North Carolina State; MA, BS, Agra-India
- MYERS, EMILY W.**, Associate Clinical Professor and Program Director, 1987. MSW, Louisiana State; BA, South Maine
- \* **SEROKA, CAROLYN M.**, Assistant Clinical Professor, 1998. MSW, Maryland; MA, Appalachian State; BA, Michigan
- \* **SHULER, KRISTRINA A.**, Assistant Professor, 2007. PhD, Southern Illinois; MA, Southern Mississippi; BA, South Carolina
- \* **WARE, ANGELA**, Assistant Professor, 2009. PhD, MA, American; BA, District of Columbia
- \* **WEAVER, GREG S.**, Associate Professor, 1997. PhD, Nebraska; MA, Central Florida; BS, Auburn
- WERNER, DANILEA**, Assistant Professor, 2009. PhD, MSW, MPH, St. Louis; BA, Huntingdon
- \* **ZUGAZAGA, CAROLE**, Associate Professor, 2002. PhD, MSW, Central Florida; BSW, Florida State

#### THEATRE

- BRINGARDNER, CHARLES**, Assistant Professor, 2009. PhD, Texas; BA, Davidson
- DICKEY, JERI**, Instructor, 2010. BFA, Wright State.
- HAGUE, DAYDRIE**, Associate Professor, 1995. MFA, Washington; BME, SUNY-Potsdam
- JAFFE, ROBIN**, Associate Professor, 1992. MFA, Memphis; BA, Edison State
- LAROCQUE, DANIEL J.**, Professor and Chair, 1990. MFA, Washington; BA, Moorhead State
- MAY, HEATHER**, Assistant Professor, 2007. PhD, Indiana, MA, Washington of St. Louis; BA, Grinnell
- OLEINICK, THEREZA B.**, Associate Professor, 1996. MFA, California Inst. Arts; BA, Iowa
- PHILLIPS, MATTHEW S.**, Associate Professor, 2000. PhD, MA, Ohio State; BA, Ohio Wesleyan
- QUALLS, CHRISTOPHER**, Assistant Professor, 2006. MFA, Alabama Shakespeare Festival; BA, North Carolina
- ROSTAMPOUR, FERESHTEH**, Assistant Professor, 2010. MFA, Ohio State; BA, Otterbein
- WILSON, ADRIENNE**, Assistant Professor, 2009. MFA, SUNY-Brockport; MM, BM, Ithica

#### VETERINARY MEDICINE - ADMINISTRATION

- ALLEN, DOUGLAS J.**, Hospital Director, 2009. MS, Georgia; DVM, Auburn
- \* **ANGARANO, DONNA W.**, Associate Dean and Professor, 1986. BS, DVM, Missouri
- BARTOL, FRANK F.**, Associate Dean and Professor, 1983. PhD, MS, Florida; BS, Virginia Tech
- \* **BOOSINGER, TIMOTHY R.**, Dean and Professor, 1983. DVM, PhD, Purdue
- BROWN, BOBBY**, Director Lab Animal Health, 2006. DVM, MS, Auburn
- RYNDERS, PATRICIA E.**, Associate Director, 2005. MS, Auburn; DVM, BS, North Carolina State
- SAMOYLOVA, TATIANA**, Assistant Research Professor (Scott-Ritchey Research Center), 1999. PhD, Acad. Sci. of Belarus; MS, Kiev State

# Emeriti

- ABNEY, LOUIS O.**, Professor Emeritus, Art, June 1988. BAA, MAA, Auburn
- ADAMS, FRED**, Professor Emeritus, Agronomy & Soils, January 1985. BS, MS, LSU; PhD, California.
- ADAMS, FREDERICK P.**, Assoc. Professor Emeritus, Management, January 1987. BSEE, Auburn; BSIM, MIT; MBA, Alabama; PhD, Florida St.
- ADAMS JR, MURRAY C.**, Assoc. Professor Emeritus, Sociology, January 2003. PhD, Kentucky, MA, BA, Mississippi.
- ALEXANDER, DAVID E.**, Associate Professor Emeritus, Music, May 2005. MM, BM, Texas
- ALEXANDER, MILTON J.**, Professor Emeritus, Business, June 1993. BS, Illinois; MBA, St. Louis; DBA, Georgia St.
- ALFORD, WILLIAM L.**, Professor Emeritus, Physics, September 1991. BA, Vanderbilt; MS, PhD, Cal. Tech
- ALLEN, ELIZABETH G.**, Assoc. Professor Emerita, Curriculum & Teaching, June 1989. BA, Alabama; MEd, PhD, Sou. Mississippi
- ALLEN, WARD S.**, Hargis Professor Emeritus, English, June 1987. BA, MA, PhD, Vanderbilt
- ALLEN JR, WILLIAM H.**, Professor Emeritus, Marketing & Transportation, December 1981. AB, Centre; JD, MA, Alabama; BD, Union Theol. Sem.
- ALVAREZ, NICOLAS E.**, Professor Emeritus, Foreign Languages & Literatures, August 2004. BA, Puerto Rico; MA, PhD, California-Berkeley
- ALVERSON JR, WILLIAM J.**, Assistant Dean Emeritus, College of Agriculture, August 2006. MEd, BS, Auburn
- AMACHER, RICHARD E.**, Hargis Professor Emeritus, English, March 1984. AB, Ohio; PhD, Pittsburgh
- AMLING, HARRY J.**, Professor Emeritus, Horticulture, March 1987. BS, Rutgers; MS, Delaware; PhD, Michigan St.
- ANDERSON, GLENN A.**, Librarian III & Assistant Dean & Emeritus, University Libraries, August 2010. MLS, Florida State; MA, BA, SUNY-Albany
- ASKEW, RAYMOND F.**, Professor Emeritus, Physics, September 1995. BS, Birmingham Southern; PhD, Virginia
- ATKINS, LEAH RAWLS**, Director Emerita, Center for Arts & Humanities, September 1995. BS, MA, PhD, Auburn
- ATTLBERGER, MARIE H.**, Professor Emerita, Microbiology, October 1986. DVM, MS, Auburn; PhD, Alabama
- AULL, JOHN L.**, Professor Emeritus, Chemistry & Biochemistry, September 2005. PhD, North Carolina St; AB, North Carolina
- BACKMAN, PAUL A.**, Professor Emeritus, Plant Pathology, February 1998. PhD, California
- BAIRD, SAMERA**, Professor Emerita, Rehabilitation & Special Education, September 2005. PhD, Texas; MA, BS, Tennessee
- BAIRD, WILLIAM E.**, Professor Emeritus, Curriculum & Teaching, June 2002. Ph.D, Texas; MS, BS, Tennessee
- BAKER, CLINTON A.**, Professor Emeritus, Marketing & Transportation, June 1993. BS, Louisville; MBA, DBA, Indiana
- BAKER, HENRY J.**, Professor Emeritus, October 2007. DVM, Auburn
- BAKER, RICHARD A.**, Professor Emeritus, Vocational & Adult Educ., September 1995. BS, MEd, Auburn; EdD, Oklahoma St.
- BALCH, GEORGE T.**, Extension Specialist Emeritus, Pesticide Education, September 1995. BS, MS, Auburn; JD, Jones
- BALL, DONALD M.**, Professor Emeritus, Agronomy and Soils, December 2010. PhD, MS, Auburn; BS, Western Kentucky
- BARKER, KENNETH N.**, Professor Emeritus, Pharmacy Care Systems, October 2009. PhD, Mississippi; MS, BSP, Florida
- BARKER, LARRY L.**, Professor Emeritus, Communications, September 1995. BA, MA, PhD, Ohio
- BARNES, PAT H.**, Vice President Emerita, Student Affairs, September 1995. BS, Texas Woman's U; MEd, EdD, Auburn
- BARNETT, ANDY**, Professor Emeritus, Economics, September 2000. BA, MA, PhD, Virginia
- BARRY, MARY E.**, Assoc. Professor Emerita, Consumer Affairs Department, June 1999. BS, MS, EdD, Temple
- BARTELS, JAN E.**, Professor & Head Emeritus, Radiology, January 2001. BS, Oregon St; MS, Guelph; DVM, Washington St.
- BAYNE, DAVID R.**, Professor Emeritus, Fisheries & Allied Aquacultures, September 2006. BA, Tulane; MS, PhD, Auburn
- BEALS, HAROLD O.**, Assoc. Professor Emeritus, Forestry, August 1993. BS, MS, PhD, Purdue
- BEARD, ATHA A.**, Assoc. Professor Emerita, Accounting, September 1995. BS, MBA, Auburn
- BECK, DIANE E.**, Professor Emerita, Clinical Pharmacy Practice, April 2004. PharmD, BS Pharm, Florida
- BECKETT, ROYCE E.**, Professor Emeritus, Mechanical Engineering, June 1993. BS, ME, MS, Illinois; ScD, Washington-St. Louis
- BECKETT, SIDNEY D.**, Assoc. Dean Emeritus, Research & Graduate Studies, Veterinary Medicine, April 1994. BS, Mississippi St; DVM, MS, Auburn; PhD, Missouri
- BELL, SIDNEY C.**, Professor Emeritus, Agric. Economics, October 1988. BS, MS, Auburn; PhD, Michigan St; JD, Jones
- BENGTSON, GEORGE W.**, Assoc. Dean & Professor Emeritus, Forestry & Wildlife Sciences, July 2001. BS, LSU; M.F., Duke; PhD, Yale
- BENNETT JR, DANIEL D.**, Professor Emeritus, Architecture, January 2011. MArch, Rice; BArch, Auburn
- BERGER, BRUCE A.**, Professor & Department Head Emeritus, Pharmacy Care Systems, September 2009. PhD, MS, BSP Pharm, Ohio State
- BERNSTEIN, ROBERT A.**, Professor Emeritus, Political Science, July 2009. BS, MS, PhD, Cornell
- BIBLIS, EVANGELOS J.**, Professor Emeritus, Forestry, September 1998. BS, Thessaloniki; MS, DF, Yale
- BLACK, J TEMPLE**, Professor Emeritus, Industrial & Systems Engineering, September 1998. BS, Lehigh; MS, W. Virginia; PhD, Illinois
- BLACKBURN, JACK E.**, Assoc. Provost Emeritus & Professor Emeritus, Education, September 1994. BS, Florida St; MA, Peabody; EdD, New York
- BLACKWELL, GAINES T.**, Professor Emeritus, School of Architecture, September 2001. MFA, Georgia; AB, Alabama
- BLAKNEY, WILLIAM G.**, Assoc. Professor Emeritus, Industrial Engineering, June 1990. BS, Nova Scotia Tech; MSc, Ohio St.
- BLASHFIELD, ROGER K.**, Professor Emeritus, Psychology, October 2010. PhD, AM, Indiana; BS, Ohio State
- BLAYLOCK, ROBERT E.**, Professor Emeritus, Animal Sciences, December 2003. MS, Mississippi St.
- BLEVINS, WILLARD T.**, Assoc. Professor Emeritus, Microbiology, September 1995. BS, Appalachian St; MS, PhD, North Carolina St.
- BLOUNT, LAVERNE**, Extension Specialist Emeritus, ACES
- BOLAND, JOSEPH S., III**, Professor Emeritus, Electrical Engineering, June 2007, BEE, MS Auburn, PhD Georgia Tech
- BOND, EVELYN B.**, Assoc. Professor Emerita, Vocational & Adult Education, June 1992. BS, Berry; MEd, Auburn
- BOSTON, ROBERT O.**, Assoc. Professor Emeritus, Economics, September 1978. BS, MS, Alabama
- BOULTON, WILLIAM R.**, Professor Emeritus, College of Business, 2007. DBA, Harvard; MBA., BBA, Washington
- BOWMAN, BRIAN L.**, Professor Emeritus, Civil Engineering, August 2010. PhD, MS, BS, Wayne State
- BOYLES, WILEY R.**, Professor Emeritus, Management, September 1995. BS, Chattanooga; PhD, Tennessee
- BRADBARD, MARILYN R.**, Professor Emeritus, Human Development & Family Studies, July 2006. BA, New Hampshire; MS, PhD, Georgia.
- BRADBERRY, GEORGE L.**, Executive Director Emeritus, Alumni & Development, September 1985. BS, Georgia
- BRADLEY, JAMES T.**, Professor Emeritus, Biological Sciences, June 2010. PhD, Washington; BS, Wisconsin
- BRAMLETT, GENE A.**, Director Emeritus, Center on Aging, September 1995. BS, Murray St; MS, PhD, Kentucky
- BRANCH, CHARLES E.**, Professor Emeritus, Anatomy, Physiology & Pharmacology, December 2003. PhD, BME, Auburn
- BRANDT, PAUL C.**, Professor Emeritus, Building Science, January 1993. BS, MS, Illinois

- BRANNON, EVELYN L.**, Associate Professor Emeritus, Consumer Affairs. BS, MS, Auburn; PhD, Tennessee
- BRAUND, KYLE G.**, Professor Emeritus, Veterinary Medicine, January 1999. BVSc, MVSc, PhD, Sydney
- BREWER, JESSE W.**, Professor Emeritus, Entomology & Plant Pathology, July 2006. PhD, Purdue; MA, BS, Central Michigan
- BREWER, ROBERT N.**, Department Head & Professor Emeritus, Poultry Science, January 2002. PhD, Georgia; MS, BS, Auburn
- BRINKER, RICHARD W.**, Dean Emeritus, Forestry & Wildlife Sciences, February 2011. PhD, BS, LSU; MBA, Southern Mississippi
- BROUGHTON JR, ROYALL M.**, Professor Emeritus, Polymer & Fiber Engineering, June 2008. PhD, MS, BS, North Carolina State
- BROWER, H. TERRI**, Professor Emerita, Nursing, August 2000. BSN, Teacher, MA, Columbia; EdD, Nova
- BROWN, ALFRED E.**, Professor Emeritus, Biological Sciences, May 2008. PhD, UCLA; BS, Cal.State-Long Beach
- BROWN JR., CLARENCE D.**, Professor Emeritus, Rehabilitation & Special Education, August 2004. PhD, Georgia; MEd, Auburn; BS, Troy St.
- BROWN, ELTON R.**, Professor Emeritus, Civil Engineering, July 2007. BS, Mississippi State; MS, Mississippi State; PhD, Texas A&M
- BROWN, JAMES E.**, Professor Emeritus, Horticulture, April 2010. BS, Ft. Valley State; MS, Tuskegee; PhD, Illinois
- BROWN, PHILLIP W.**, Extension Affirmative Action Officer Emeritus, Alabama Cooperative Extension System, December 2003. BS, MEd, EdS, Tuskegee
- BROWNING, PHILIP L.**, Professor Emeritus, Rehabilitation & Special Education, September 2008. PhD, Wisconsin; MA, Texas Tech; BA, Howard Payne
- BRUNNER, CINDY J.**, Associate Professor Emeritus, July 2007. DVM, PhD, BS, Minnesota
- BUCK, DONALD C.**, Associate Professor Emeritus, Foreign Languages & Literatures, June 2009. PhD, MA, BA, Texas
- BUFORD JR, JAMES A.**, Extension Management Scientist Emeritus, Coordinator Emeritus, Management Development, September 1995. BS, MS, Auburn; PhD, Georgia
- BULFIN, ROBERT L.**, Professor Emeritus, Industrial & Systems Engineering, May 2010. PhD, MS, BS, Georgia Tech
- BURKHALTER, BETTYE B.**, Assoc. Provost & Vice President for Student Affairs & Professor Emerita, April 2000. BS, MA, EdD, PhD, Alabama
- BURKHALTER, JOHN E.**, Professor Emeritus, Aerospace Engineering, December 2004. PhD, Texas; MSAE, BAE, Auburn
- BURNEY, SAMUEL M.**, Director Emeritus, Outreach Program Office, July 2009.
- BURNS, MOORE J.**, Professor Emeritus, Physiology & Pharmacology, March 1982. BS, MS, Auburn; PhD, Purdue
- BUSCH, RUTH C.**, Assoc. Professor Emerita, Sociology, September 1991. AB, Cornell; MA, Utah St; PhD, Arizona
- BUSSELL, WILLIAM H.**, Professor Emeritus, Mechanical Engineering, June 1989. BME, MSE, Florida; PhD, Michigan St.
- BUTZ, ROBERT K.**, Professor Emeritus, Math-ACA, June 1988. BS, Colorado St; MS, PhD, Georgia
- BUXTON, DONALD**, Professor Emeritus, Anatomy, Physiology, Pharmacology, April 2002. DVM, Auburn; PhD, Florida
- CADENHEAD, A. KENNETH**, Professor Emeritus, Curriculum & Teaching, June 1992. BS, MEd, Georgia; EdD, Auburn
- CALLAN JR, ALLIE W.**, Assoc. Professor Emeritus, Aerospace Engineering, June 1986. BS, Maryland; MS, George Washington
- CAMPAGNA, KEITH D.**, Assoc. Professor Emeritus, Pharmacy Practice, April 2003. PharmD, BS Pharmacy, Duquesne
- CAMPBELL, L. CAINE**, Professor Emeritus, History & Journalism, & Assoc. Dean Emeritus, College of Liberal Arts, July 1992. BS, Mississippi St; MA, PhD, Mississippi
- CANTRELL, CLYDE HULL**, Director Emeritus, Libraries, July 1977. AB, MA, ABLs, North Carolina; PhD, Illinois
- CARRINGTON, THOMAS J.**, Professor Emeritus, Geology, April 1994. BS, MS, Kentucky; PhD, Virginia Tech
- CAUDILL, STEVEN B.**, Professor Emeritus, Economics, June 2009. PhD, MA, Florida; BA, Ohio Wesleyan
- CAUSEY, M. KEITH**, Professor Emeritus, School of Forestry & Wildlife Sciences, August 2000. BS, MS, PhD, LSU
- CAVENDER, A. RAY**, Assoc. Director Emeritus, ACES, October 1993. BS, MS, Tennessee; PhD, Wisconsin
- CAVENDER, DOROTHY H.**, Professor Emerita, Consumer Affairs, June 2008. EdD, Auburn; MS, BS, Kentucky
- CHAMBLISS, OYETTE L.**, Professor Emeritus, Horticulture, September 1995. BS, MS, Auburn; PhD, Purdue
- CHASTAIN, MARIAN**, Assoc. Professor Emerita, Nutrition & Foods, June 1986. BS, Cedar Crest; MS, PhD, Florida St.
- CHEN, AN-BAN**, Professor Emeritus, Physics, April 2008. PhD, MS, William & Mary; BS, Taiwan Normal
- CHERRY, JOE H.**, Professor Emeritus, Biological Sciences, June 2005. BS, Tennessee; MS, PhD, Illinois
- CHILDRESS, GEORGE B.**, Librarian Emeritus, Auburn University Libraries, January 2009. MLS, MA, Alabama; BA, Virginia Commonwealth
- CLARK, CARL H.**, Professor & Head Emeritus, Physiology & Pharmacology, January 1992. BS, DVM, Washington St; MS, PhD, Ohio St.
- CLARK, WAYNE E.**, Professor Emeritus, Entomology and Plant Pathology, December 2010. BS, MS, Brigham Young; PhD, Texas A&M
- CLARK-LEWIS, SANDRA R.**, Professor Emerita, Communication Disorders, October 2010. AuD, Florida; MComm, BS, Auburn
- CLEM, MARY CATHERINE**, Assoc. Professor Emerita, Consumer Affairs, June 1998. BS, MS, Auburn
- CLONTS JR, HOWARD A.**, Professor Emeritus, Agricultural Economics & Director of the Environmental Institute, September 2000. BS, MS, Auburn; PhD, Virginia Tech
- COBIA, DEBRA C.**, Professor Emerita, Special Education, Rehabilitation, Counseling/School Psychology, May 2009. EdD, Alabama; EdS, MEd, West Georgia
- CODY, REYNOLDS M.**, Assoc. Professor Emeritus, Botany & Microbiology, October 1991. BA, Tennessee; MS, PhD, Mississippi St.
- COKER, SAMUEL T.**, Professor Emeritus, Pharmacal Sciences, July 1992. BS, Auburn; MS, PhD, Purdue
- CONNER, DIXIE F.**, Business Manager Emerita, Athletics, June 1994. BA, Auburn
- CONNER, PAUL C.**, Director Emeritus, Athletic Facilities & Turf Management, November 1992. BS, MEd, Auburn
- COOK, ALAN R.**, Associate Professor Emeritus, Architecture, Planning, and Landscape Architecture, May 2011. MArch, BArch, Nebraska
- COOK JR, ROBERT B.**, Professor Emeritus, Geology & Geography, July 2007. PhD, MS, Georgia; EM, Colorado-Mines
- COOPER, BEN F.**, Dean Emeritus, Pharmacy, October 1987. AB, BS, MS, PhD, North Carolina
- COOPER, JOHN R.**, Assoc. Professor Emeritus, Physics, June 1994. MS, Ohio St; BEP, PhD, Auburn
- COOPER, THOMAS E.**, Professor Emeritus, Building Science, June 2002. PhD, Auburn
- CORLEY, TOM E.**, Assoc. Dean Emeritus & Assoc. Director Emeritus, Agricultural Experiment Station, October 1984. BS, MS, Auburn
- COX, J. GRADY**, Professor Emeritus, Industrial Engineering, June 1992. BS, MS, Auburn; PhD, Purdue
- CREWS, JERRY R.**, Extension Specialist & Professor Emeritus, Agricultural Economics & Rural Sociology, December 2003. PhD, Auburn; MS, BSA, Georgia
- CRISS, ROBERT R.**, Assoc. Professor Emeritus, Accountancy, June 1993. BBA, MBA, LLB, JD, Mississippi; LLM, Alabama
- CRONENBERG JR., ALLEN T.**, Assoc. Professor Emeritus, History, February 2004. PhD, Stanford; MA, BA, North Carolina
- CULLINAN, HARRY T.**, 1991. Professor Emeritus, Chemical Engineering, June 2011. ju PhD, MS, Carnegie Inst; BS Detroit
- CUNNINGHAM, DONALD H.**, Professor Emeritus, English, May 2005. PhD, MA, BA, Missouri
- CUPP, EDDIE W.**, Professor Emeritus, Entomology & Plant Pathology, May 2006. PhD, Illinois; BA, Murray St.
- CUPP, MARY S.**, Professor Emerita, Entomology & Plant Pathology, May 2006. PhD, Cornell; BS, New Orleans
- CURTIS, CHRISTINE W.**, Professor Emeritus, Chemical Engineering, February 2007. PhD, MS, Florida St; BS, Mercer

- CURTIS, LARRY M.**, Extension Specialist & Professor Emeritus, Biosystems Engineering, December 2003. MS, BS, Auburn
- CUTCHINS, MALCOLM F.**, Professor Emeritus, Aerospace Engineering, July 1999. BS, MS, PhD, Virginia Tech
- DANE, JACOB H.**, Professor Emeritus, Agronomy & Soils, August 2008. PhD, Colorado State; MS, New Mexico State; BS, Netherlands
- DARLING, CHARLES M.**, Professor Emeritus, Medicinal Chemistry, Assoc. Dean Emeritus, Pharmacy, September 1995. BS, PhD, Mississippi
- DARON, CAROL F.**, Asst. Provost Emerita, Undergraduate Studies, July 1997. BA, Huntingdon; MA, Florida St; PhD, Auburn
- DAVIES, WILLIAM D.**, Professor Emeritus, Fisheries & Allied Aquacultures, September 1996. BS, Purdue; MS, Ohio St; PhD, North Carolina St.
- DAVIS JR, KERMIT R.**, Professor Emeritus, Management, May 2008. PhD, Georgia; MBA, Mississippi State; BA, Mississippi College
- DAVIS, NICHOLAS D.**, Professor Emeritus, Architecture, September 1995. BA, BArch, Rice; MF, Arch, Princeton
- DAVIS, NORMAN D.**, Professor Emeritus, Botany & Microbiology, June 1990. BS, Georgia; MS, PhD, Ohio St.
- DAWSEY III, CYRUS B.**, Professor Emeritus, Geology & Geography, June 2008. PhD, Florida; MA, BS, Florida State
- DAY, WILLIAM B.**, Associate Professor Emeritus, Computer Science and Software Engineering, April 1997. BEE, MS, PhD, Rensselaer
- DECKER, HAROLD R.**, Assoc. Professor Emeritus, Aerospace Engineering, January 1979. BSEd, N.E. Missouri St; M. Litt; Pittsburgh
- DE MAINE, PAUL A.D.**, Professor Emeritus, Computer Science and Software Engineering, January 1995. BS, Witwatersrand; PhD, British Columbia
- DEVALL, WILBUR B.**, Professor Emeritus, Forestry, February 1978. BS, New York St. Forestry; MS, Florida
- DICKENS, RAY**, Professor Emeritus, Agronomy & Soils, September 1995. BS, Arkansas; MS, PhD, Auburn
- DIENER, URBAN**, Professor Emeritus, Plant Pathology, October 1987. BA, Miami-Ohio; MA, Harvard; PhD, North Carolina St.
- DINIUS, ROBERT H.**, Assoc. Professor Emeritus, Chemistry, June 1992. BS, Illinois Wesleyan; MS, Missouri; PhD, Florida St.
- DINIUS, SARA**, Assoc. Professor Emeritus, Accountancy, June 1993. BS, Northwestern; MS, PhD, Auburn
- DIORIO, DOROTHY M.**, Professor Emerita, Foreign Languages, June 1993. AB, Bucknell; MA, Middlebury; PhD, North Carolina
- DIXON, CARL**, Assoc. Professor Emeritus, Zoology & Wildlife Science, September 1991. BA, Colorado; PhD, Kansas St.
- DOBIE, JAMES L.**, Professor Emeritus, Zoology & Wildlife Science, October 1996. BS, Centenary; MS, PhD, Tulane
- DOERSTLING, STEFFEN**, Professor Emeritus, Architecture, January 1993. BA, Munich; MA, PhD, Stuttgart
- DONNAN, HUGH H.**, Professor Emeritus, Counseling & Counseling Psych., April 1992. BA, MEd, Furman; PhD, North Carolina
- DOZIER, LESEL A.**, Extension 4-H Specialist Emeritus, September 1995. BS, MEd, PhD, Auburn
- DRAGOIN, ANTHONY**, Assoc. Professor Emeritus, Health & Human Performance, June 1989. BS, MS, Auburn; EdD, Alabama
- DRAKE, JAMES B.**, Professor & Department Head Emeritus, Voc. & Adult Education, September 1995. BS, MEd, EdD, Auburn
- DUBOIS, MARK R.**, Assoc. Professor Emeritus, Forestry & Wildlife Sciences, March 2008. BS, Arizona; MS, Missouri; PhD, Mississippi St
- DUFFIELD, FRANCES J.**, Assoc. Professor Emerita, Consumer Affairs, June 1990. BS, Montana St; MS, Virginia Tech; PhD, Tennessee
- DUGGER JR, FOWLER**, Editor Emeritus, July 1987. BA, Alabama; MA, Duke
- DUNCAN, BRYAN L.**, Professor Emeritus, Fisheries & Allied Aquacultures, October 2005 PhD, Wayne St; BA, Pittsburg St.
- DUNKELBERGER, JOHN E.**, Professor Emeritus, Agricultural Economics & Rural Sociology, December 2003. PhD, Mississippi St; MS, Penn St; AB, Franklin & Marshall
- DUNLOP, ALEXANDER W.**, Associate Professor Emeritus, English, May 2007. PhD, MA, North Carolina; BA, Hobart
- DUSI, JULIAN L.**, Professor Emeritus, Zoology & Wildlife Science, September 1992. BS, MS, PhD, Ohio St.
- DYE, PATRICK F.**, Head Football Coach Emeritus, September 1994. BS, Georgia
- EASTERDAY, KENNETH E.**, Professor Emeritus, Curriculum & Teaching, June 1998. MAT, Indiana; EdD, Case Western
- EAVES, RONALD**, Professor Emeritus, Rehabilitation & Special Education, May 2008. PhD, Georgia; MEd, Florida; BS, Florida
- EDMONDS, CHARLES III**, Professor Emeritus, Finance, September 1995. BA, MSA, Auburn; PhD, Arkansas
- EKELUND JR, ROBERT B.**, Lowder Eminent Scholar Emeritus, Economics, October 1, 2003. PhD, LSU; MA, BSBA, St. Mary's
- ELDER, THOMAS J.**, Professor Emeritus - June 2003. BS, SMU; MF, Stephen F. Austin State; PhD, Texas A&M
- ELLIOTT, THOMAS R.**, Extension Chief Financial Officer Emeritus, Alabama Cooperative Extension System, May 2005. BS, Austin Peay; MEd, EdD, Auburn
- ESCARPANTER, JOSE A.**, Professor Emeritus, Foreign Languages & Literatures, May 2001. MA, PhD, Havana
- EVANS, CLYDE E.**, Professor Emeritus, Agronomy & Soils, April 1992. BS, Abilene Christian; MS, Auburn; PhD, North Carolina St.
- EVANS, EMERSON M.**, Assoc. Professor Emeritus, Agronomy & Soils, October 1983. BS, Auburn; MS, Cornell
- EVEREST, JOHN W.**, Extension Specialist & Professor Emeritus, Agronomy & Soils, December 2003. PhD, MS, Auburn; BS, Alabama
- EWALD, SANDRA J.**, Professor Emerita, Pathobiology, September 2008. PhD, BA, Texas
- FABEL, ROBIN F.A.**, Professor Emeritus, History, June 2001. BA, MA, Oxford; PhD Auburn
- FELKEY, BILL G.**, Professor Emeritus, Pharmacy Care Systems, February 2009. MS, Indiana; BA, Maine
- FIELDS, KENT T.**, Professor Emeritus, School of Accountancy, June 2001. BBA, N. Texas; PhD, Texas A&M
- FITCH, JAMES L.**, Professor Emeritus, Communication Disorders, July 2005. PhD, MS, Florida St; BS, Illinois St.
- FLICK, WARREN A.**, Assoc. Professor Emeritus, School of Forestry, February 1998. BS, PhD, SUNY
- FLOOD JR, CLIFFORD A.**, Assoc. Professor & Chair Emeritus, Biosystems Engineering, September 2003. PhD Purdue; MSAE, Kentucky; BAgE, Florida
- FLUKER, BILLIE**, Assoc. Professor Emeritus, Mechanical Engineering, June 1987. BS, MS, Texas A&M; PhD, Tulane
- FLYNT, J. WAYNE**, Professor Emeritus, History, October 2005. PhD, MA, Florida St; AB, Howard
- FRENCH, FRANCES C.**, Assoc. Professor Emerita, Sociology, Anthropology & Social Work, September 1992. BA, MS, LSU; JD, Jones
- FRENCH, JOHN C.**, Professor Emeritus, Entomology, March 1991. BS, MS, Auburn; PhD, Clemson
- FRIEDMAN, MICHAEL E.**, Professor Emeritus, Chemistry & Biochemistry, August 2007. BS, Pennsylvania; MS Polytechnic Inst. of Brooklyn; PhD, Cornell
- FROBISH, LOWELL**, Director Emeritus, Alabama Agricultural Experiment Station, March 2005. BS, Illinois; MS, PhD, Iowa St.
- FUKAI, JUNICHIRO**, Professor Emeritus, Physics, June 2008. PhD, Tennessee; MS, Denver; BEng, Waseda
- GALBRAITH, RUTH L.**, Dean Emerita, Human Sciences & Professor Emerita, Consumer Affairs, September 1985. BS, PhD, Purdue
- GARRETT, PHILLIP D.**, Assoc. Professor Emeritus, Anatomy & Histology, September 1995. BS, DVM, MS, Missouri
- GAYLOR, MICHAEL J.**, Assoc. Professor Emeritus, Entomology, September 1998. BS, MS, Auburn; PhD, Texas A&M
- GEIGER, GRADY E.**, Librarian III Emeritus, Ralph Brown Draughon Library, May 1994. BS, Auburn; MLS, Michigan
- GERBER, LARRY G.**, Professor Emeritus, History, July 2008. PhD, MA, BA, California
- GIBBS, ROBERT C.**, Asst. University Librarian & Librarian III Emeritus, October 1992. AB, Duke; MSLS, North Carolina
- GILES, WILLIAM F.**, Professor Emeritus, Management, June 2011. PhD, Tennessee; MA, Georgia; BA, Duke
- GIMENEZ JR, DIEGO M.**, Associate Professor Emeritus, Animal Sciences, January 2009. PhD, MS, BS, Florida

- GJERSTAD, DEAN H.**, Professor Emeritus, Forestry & Wildlife Sciences, December 2008. BS, MS, PhD, Iowa St
- GLAZE, LINDA**, Associate Provost Emerita for Undergraduate Studies and Associate Professor Emerita, Foreign Languages & Literatures, September 2010. PhD, MA, Wisconsin; BA, Marietta
- GLOVER, GLENN R.**, Professor Emeritus, Forestry & Wildlife Sciences, April 2006. PhD, Virginia Tech; MS, BS, Auburn
- GOLDEN, MICHAEL S.**, Assoc. Professor Emeritus, School of Forestry & Wildlife Sciences, September 2001. PhD, Tennessee; MS, Auburn; AB, Trevecca
- GOODLING, JOHN S.**, Professor Emeritus, Mechanical Engineering, June 1996. BSE, MSE, PhD, Florida
- GOSSETT JR, CLAUDE W.**, Professor Emeritus, Music, June 1998. BS, Lamar; MCM, Southwest Baptist Theo. Sem; PhD Southern Mississippi
- GRAF, EDWARD R.**, Professor Emeritus, Electrical Engineering, January 1987. BEE, MEE, Auburn; PhD, Stuttgart
- GRAVES, RICHARD L.**, Professor Emeritus, Curriculum & Teaching, September 1995. BA, Baylor; MEd, Florida; PhD, Florida St.
- GRAVOIS, JAMES M.**, Librarian Emeritus, Ralph Brown Draughon Library, August 2008. MLIS, South Carolina; MA, Texas; BA, New Orleans
- GREENE, MICHAEL E.**, Professor Emeritus, Electrical & Computer Engineering, June 2007. PhD, Rice, MS, BEE, Ohio State
- GREENLEAF, ROBERT B.**, Professor Emeritus, Music, October 2007. BM, Florida State; MM, D. Mus Arts, Louisiana State
- GREENSHIELDS, CHARLES M.**, Assoc. Professor Emeritus, Educational Foundations, Leadership & Technology, June 1990. BA, MA, PhD, Michigan St.
- GRIGSBY, LEO L.**, Professor Emeritus, Electrical & Computer Engineering, July 1999. BSEE, MSEE, Texas Tech; PhD, Oklahoma State
- GROSS, CHARLES A.**, Professor Emeritus, Electrical & Computer Engineering, June 2007. PhD, MS, Missouri-Rolla; BS, Alabama
- GROTH JR, AARON H.**, Professor Emeritus, Pathobiology, January 1993. BS, DVM, Auburn; MS, Iowa St.
- GROVER, JOHN H.**, Professor Emeritus, Fisheries & Allied Aquacultures, April 2002. PhD, MS, Iowa St; BS, Utah
- GUDAUSKUS, ROBERT T.**, Professor Emeritus, Plant Pathology, October 1993. BS, East Illinois; MS, PhD, Illinois
- GUIN, JAMES A.**, Professor Emeritus, Chemical Engineering, October 2005. PhD, Texas; MS, BS, Alabama
- GUNDLACH, JAMES H.**, Professor Emeritus, Sociology, September 2007. PhD, MA, Texas; B.A, Oklahoma State
- GUTHRIE, RICHARD**, Dean, Director, & Professor Emeritus, College of Agriculture & Alabama Agricultural Experiment Station, December 2003. PhD, Cornell; MS, BS, Auburn
- GUFFEY JR, HUGH J.**, Associate Professor Emeritus, Marketing, June 2007. PhD, MBA, B.BA, Georgia
- GWIN, WILLIAM R.**, Professor Emeritus, Architecture; Director Emeritus, University Honors College, September 1998. BArch, Auburn; MArch, Pennsylvania; MVA, Georgia St.
- HAIRSTON, JAMES E.**, Professor Emeritus, Agriculture, September 2009. BS, Berry; PhD, Georgia
- HAJEK, BENJAMIN F.**, Professor Emeritus, Agronomy & Soils, September 1995. BS, Texas A&M; MS, PhD, Auburn
- HALE, DENNIS**, Assoc. Professor Emeritus, Accounting & Finance, June 1985. BS, Middle Tennessee St; MA, Peabody
- HALE, FRANCES W.**, Assoc. Professor Emerita, Vocational & Adult Education, June 1982. BS, Troy St, MA, Peabody
- HALL, DAVID M.**, Professor Emeritus, Textile Engineering, September 1995. BS, Auburn; MS, Clemson; PhD, Victoria
- HALL, HINES H.**, Assoc. Professor Emeritus, History, July 2006. PhD, Vanderbilt; M.A., Auburn; B.A., Duke
- HALPIN, GERALD**, Professor Emeritus, Educational Foundations, Leadership & Technology, May 2009. EdD, MEd, Georgia; BS, Jacksonville State
- HALPIN, GLENNELLE**, Professor Emerita, Educational Foundations, Leadership & Technology, May 2009. PhD, MA, Georgia; BS, Jacksonville State
- HAMRICK, MAYNARD E.**, Professor Emeritus, Pharmacal Sciences, June 2005. BS, PhD, MS, Auburn
- HANKES, GERALD H.**, Professor Emeritus, College of Veterinary Medicine, September 2001. BS, DVM, Illinois; MS, PhD, Colorado St.
- HARGIS, JAMES H.**, Professor Emeritus, Chemistry, August 2004. PhD, Utah; BS, Eastern New Mexico
- HARRELL, DAVID E.**, Breeden Eminent Scholar Emeritus, History, October 2005. PhD, MA, Vanderbilt; BA, Lipscomb
- HARRIS, JAMES R.**, Professor Emeritus, Marketing, June 2007. PhD, MBA, Florida; B.BA, Emory
- HARRIS, RALPH R.**, Professor & Head Emeritus, Animal & Dairy Sciences, September 1995. BS, MS, Auburn; PhD, Texas A&M
- HARRISON, A. CLEVELAND**, Professor Emeritus, Theatre, September 1991. BS, MA, Ohio St; MA, Arizona; PhD, Kansas
- HARTSFIELD, NANCY M.**, Professor Emerita, Art, January 2002. BVD, MFA, Auburn
- HARTWIG, CHESTER W.**, Professor Emeritus, Sociology & Anthropology, January 1977. BS, MA, PhD, Wisconsin
- HARZEM, PETER**, Professor Emeritus, Psychology, May 2006. PhD, Wales; BS, London
- HATCH, UPTON**, Professor Emeritus, Agricultural Economics & Rural Sociology, September 2006. PhD, Minnesota; MS, Georgia; BS, Dartmouth
- HATFIELD, DONALD G.**, Professor Emeritus, Art, June 1994. BA, MA, Michigan St; MFA, Wisconsin
- HAYES, VIRGINIA**, Assoc. Dean Emerita, Education, July 1998. BS Samford; MA, EdD, Alabama
- HAYHURST, DONALD E.**, Professor Emeritus, Political Science, September 1988. AB, MLitt, PhD, Pittsburgh
- HAYNES, WILLIAM O.**, Professor Emeritus, Communication Disorders, May 2008. PhD, Bowling Green; MA, BA, N. Michigan
- HAWSEY, LAWRENCE S.**, Extension Leader Emeritus, Programs & Events, September 1995. BS, MEd, Auburn; EdS, Mississippi St.
- HEATH, JO W.**, Professor Emeritus, Mathematics & Statistics, 2007. PhD, MS, Auburn; BS, Southwest Louisiana
- HEBERT, ROBERT F.**, Russell Foundation Professor Emeritus, Economics, June 2000. BS, MS, PhD, LSU
- HEILMAN, JOHN G.**, Provost & Vice President for Academic Affairs Emeritus, Political Science, January 2009. PhD, MA, N.Y.U.; BA, Lafayette
- HELMKE, HENRY C.**, Assoc. Professor Emeritus, Foreign Languages, June 1993. BA, MA, Duke; PhD, Ohio St.
- HENDERSON, JOHN B.**, Professor Emeritus, Agronomy & Soils, January 1995. BS, MS, Auburn; PhD, North Carolina St.
- HENLEY, ATHA LOUISE**, Librarian III Emerita, September 1995. BA, Missouri Valley; MLS, California-Berkeley
- HENRY, JOHN F.**, Professor Emeritus, Management, January 1986. BIM, Auburn; MSIM, Georgia Tech; PhD, Alabama
- HENSON, CURTIS T.**, Professor Emeritus, History, July 1993. BA, MA, Auburn; PhD, Tulane
- HIERS, CHARLES J.**, Professor Emeritus, Art, June 1988. BAA, MAA, Auburn
- HIGHFILL, WILLIAM C.**, Librarian IV Emeritus, June 2000. AB, Oklahoma Baptist; MS, Kansas St; PhD, Illinois
- HILL, DAVID T.**, Professor Emeritus, Biosystems Engineering, May 2010. PhD, Clemson; MS, BSAE, Georgia
- HILL, PAUL D.**, Professor Emeritus, Mathematics, August 2000. BS, MS, PhD, Auburn
- HILL, WILLIAM E.**, Professor Emeritus, Chemistry & Biochemistry, October 2005. PhD, Strathclyde; MS, BS, Florida St.
- HILTBOLD, ARTHUR E.**, Professor Emeritus, Agronomy & Soils, July 1991. BS, PhD, Cornell; MS, Iowa St.
- HINRICHSSEN, JOHN W.**, Assoc. Professor Emeritus, Mathematics, September 1998. BA, MA, PhD, Texas
- HINTON, MARJORIE J.**, Assoc. Professor Emerita, Family & Child Development, June 1984. BS, Alabama; MS, Auburn
- HINTON, WILBUR**, Professor Emeritus, Music, July 1984. BM, MA, EdD, Alabama
- HIRTH, LEO J.**, Professor Emeritus, Chemical Engineering, January 1990. BS, CCNY; MS, PhD, Texas
- HITCHCOCK JR., WALTER B.**, Professor Emeritus, English, May 2008. PhD, Duke; MA, Oregon; BA, Auburn
- HOBBS, MARLEAH K.**, Assoc. Professor Emerita, Art, June 1988. BFA, Colorado; MFA, Mississippi

- HOLLER, NICHOLAS R.**, Professor Emeritus. Zoology & Wildlife Science, October 1998. MS, DVM, Auburn
- HOLLEY, BETTY B.**, Extension Specialist Emerita, 4-H Program, September 1995. BS, Tennessee; MS, Alabama; EdD, Auburn
- HOLLEY JR, WILLIAM H.**, Professor Emeritus, Management, July 2001. BS, MBA, Mississippi St; PhD, Alabama
- HOLLOWAY, BOBBY E.**, Asst. Dean & Librarian III Emeritus, March 1998. BA, Harding; MLS, Kentucky
- HOLMES III, JOHN P.**, Professor Emeritus, Mathematics & Statistics, May 2010. PhD, Emory; MA, Georgia; BS, Georgia Tech
- HONNELL, MARTIAL A.**, Professor Emeritus, Electrical Engineering, July 1981. BSEE, MSEE, Georgia Tech
- HOOD, JOSEPH T.**, Professor Emeritus & Department Head Emeritus, Agronomy & Soils, October 1986. BS, Georgia; MS, Purdue; PhD, Cornell
- HOOL, JAMES N.**, Professor Emeritus, Industrial & Systems Engineering, July 1998. BS, MS, PhD Purdue
- HOPKINS, BILL L.**, Professor Emeritus, Psychology, July 2001. BA, Emory; PhD, Indiana
- HORNE, ROBERT D.**, Professor Emeritus, Small Animal Surgery & Medicine, September 1994. DVM, MS, Auburn
- HOWARD, MARY J.**, Associate Professor Emerita, Music, June 2000. BM, Westminster; MM, Florida St.
- HUDDLESTON, NORMAN R.**, Assoc. Professor Emeritus, Agricultural Economics & Rural Sociology, September 1990. BS, Tennessee Tech; MS, Tennessee; PhD, Mississippi St.
- HUDSON, FRED M.**, Professor Emeritus, Civil Engineering, December 1980. BSCE, Purdue; MS, Princeton
- HUDSON, ROBERT S.**, Alumni Professor Emeritus, Large An. Surg. & Med., June 1988. DVM, Oklahoma St; MS, Auburn
- HUDSON, SARA A.**, Assoc. Professor Emerita, English, September 1986. AB, North Carolina; MA, PhD, Chicago
- HUDSON, WILLIAM N.**, Professor Emeritus, Mathematics, June 2000. AB, MA, California; PhD, California-Irvine
- HUFFMAN, DALE L.**, Professor Emeritus, Animal & Dairy Sciences, Director Emeritus, Food Technology Institute, September 1995. BS, Cornell; MS, PhD, Florida
- HUMBURG, JAY M.**, Assoc. Professor Emeritus, Large Animal Surgery & Medicine, August 2000. BS, DVM, Kansas St; MS, Auburn
- HURST, JAMES R.**, Agricultural Economist Emeritus, Agricultural Economics & Rural Sociology, September 1998. JD Jones Law; BS, MS, Auburn
- ILLIES, ANDREAS J.**, Professor Emeritus, Chemistry & Biochemistry, January 2010. BA, New Hampshire; PhD, Nebraska; MS, Rochester Inst. Tech
- JACOBSON, MARCIA A.**, Hargis Professor Emerita. English, July 1999. BA, MA, PhD, California
- JAEGER, RICHARD C.**, Professor Emeritus, Electrical & Computer Engineering, December 2007. PhD, ME, BSEE, Florida
- JANER, ANN L.**, Assoc. Professor Emerita, Pharmacy Practice, January 2006. MS, Temple; BSPHarm, Philadelphia
- JEMIAN, WARTAN A.**, Professor Emeritus, Mechanical Engineering, December 1993. BS, Maryland; MS, PhD, Rensselaer Poly
- JENKINS, RHONALD M.**, Assoc. Professor Emeritus, Aerospace Engineering, August 2004. PhD, Purdue; MS, BS, Florida St.
- JENKINS, STEPHEN R.**, Professor Emeritus, Civil Engineering, September 1995. BSCE, Georgia Tech; MS, PhD, Harvard
- JENSEN, JOHN W.**, Professor Emeritus, Fisheries & Allied Aquacultures, March 2007. PhD, MS, Auburn; BS, Minnesota
- JOHNSON, CLARENCE E.**, Professor Emeritus, Agricultural Engineering, September 1998. BS, Oklahoma St; MS, PhD, Iowa St.
- JOHNSON, EMMETT F.**, Assistant Professor Emeritus, College of Business. MSEE, Alabama; BEE, Auburn
- JOHNSON, EVERT W.**, Professor Emeritus, Forestry, July 1986. BS, New Hampshire; MF, Yale; PhD, Syracuse
- JOHNSON, FREDERIC A.**, Assoc. Professor Emeritus, June 1992. BS, MS, New Hampshire; PhD, Wisconsin
- JOHNSON, GERALD W.**, Professor Emeritus, Political Science, September 1995. BA, Marshall; MA, PhD, Tennessee
- JOHNSON, JAMES LAVAUGHN**, Professor & Department Head Emeritus, College of Agriculture, November 2001. MS, BS, Auburn
- JOHNSON, MARTHA R.**, Asst. Professor Emeritus, Alabama Cooperative Extension System, January 2003. BS, Georgia College, MS, Florida St., EdD, North Carolina St..
- JOHNSON, ROBERT E.**, Assoc. Professor Emeritus, Curriculum & Teaching, September 1995. BME, MME, Kansas; PhD, Michigan
- JOHNSTON, JAMES M.**, Professor Emeritus, Psychology, August 2009. PhD, MA, Florida; BA, Tennessee
- JONES, ALLEN W.**, Professor Emeritus, History, September 1991. BS, MA, Auburn; PhD, Alabama
- JONES, EDWARD O.**, Professor Emeritus, Mechanical Engineering, June 1992. BSME, BSEE, Auburn; MSME, Illinois
- JONES, ETHEL B.**, Professor Emerita, Economics, July 1996. AB, Vassar; MA, PhD, Chicago
- JONES, MADISON P.**, Professor Emeritus, English, & University Writer-in-Residence Emeritus, June 1987. AB, Vanderbilt; MA, Florida
- JONES, WILLIAM R.**, Professor Emeritus, Animal Sciences, December 2003. PhD, MS, Virginia Tech; BS, Mississippi St.
- JUDKINS, JOSEPH F.**, Professor Emeritus, Civil Engineering, July 2002. PhD, BS, MSSE, Virginia Tech
- KANDHAL, PRITHVI S.**, Assoc. Director Emeritus, Asphalt Technology Center, July 2001. BS, Rajasthan, India; MS, Iowa St.
- KAPLAN, BARBARA C.**, Professor Emerita, Curriculum & Teaching, June 1990. BA, Agnes Scott; MA, Eastman; MA, S. Florida; PhD, Florida St.
- KATAINEN, V. LOUISE.**, Assoc. Professor Emerita, Foreign Languages & Literatures, July 2002. PhD, California
- KEITH, ROBERT E.**, Professor Emeritus, Nutrition & Food Science, August 2010. PhD, Virginia Tech; MS, BS, Florida State
- KELLEY, VIRGINIA C.**, Assoc. Professor Emerita, Botany & Microbiology, July 1994. AB, LaGrange; MS, PhD, Auburn
- KELLEY, WALTER D.**, Professor Emeritus, Forestry, April 1994. BS, MS, Auburn; PhD, North Carolina St.
- KINCEY, TRULY**, Professor Emerita, Economics, September 1979. AB, Montevallo; MA, Tulane; PhD, Ohio St.
- KING JR, CHARLES C.**, Professor Emeritus, Agronomy & Soils, October 1986. BS, MS, Auburn; PhD, North Carolina St.
- KINZER, EARL T.**, Assoc. Professor Emeritus, Physics, June 1993. BEP, MS, Auburn; PhD, Virginia
- KITELEY, GARY W.**, Assoc. Professor Emeritus, Aerospace Engineering, June 1990. BS, Minnesota; MS, Purdue
- KLING, EMILY B.**, Extension Specialist Emerita, Alabama Cooperative Extension System, March 2010. BA, Principia; MS, Michigan; EdD, Auburn
- KNECHT, CHARLES D.**, Professor Emeritus, Small Animal Surgery & Medicine, June 1997. BS, Maryland; MS, Illinois; VMD, Pennsylvania
- KOUIDIS, VIRGINIA M.**, Associate Professor Emeritus, English, May 2009. PhD, MA, Iowa; BA, Michigan State
- KOZLOWSKI JR, GEORGE ALOYSIUS**, Professor Emeritus, Mathematics & Statistics, 2007. PhD, Michigan; BA, Wesleyan
- KOZLOWSKI, YVONNE**, Librarian Emerita, April 2003. BA, MA, MLS, Washington
- KRISHNAGOPALAN, GOPAL A.**, Professor Emeritus, Chemical Engineering, January 2010. PhD, MS, Maine; BCHE, Bombay
- KRISTA, LAVERNE M.**, Professor Emeritus, Anatomy, Physiology & Pharmacology, September 1998. MS, South Dakota St; DVM, PhD, Minnesota
- LANFORD, BOBBY L.**, Assoc. Professor Emeritus, School of Forestry & Wildlife Sciences, January 2002. BS, MS, Clemson; PhD, SUNY
- LARSEN, HARRY S.**, Assoc. Professor Emeritus, Forestry, July 1991. BS, Rutgers; MS, Michigan St; PhD, Duke
- LATIMER, MARGARET K.**, Assoc. Professor Emerita, Political Science, June 1992. BA, Agnes Scott; MA, Vanderbilt
- LATIMER, PAUL H.**, Professor Emeritus, Physics, June 1992. BS, Northwestern; MS, PhD, Illinois
- LATIMER, RENATE S.**, Assoc. Professor Emerita, Foreign Languages & Literatures, May 2008. PhD, MA, Michigan; BA, Wayne State
- LAUMER JR., J. FORD**, Professor Emeritus, Marketing, April 2006. PhD, Georgia; MBA, BCE, Auburn
- LECHNER, JUDITH V.**, Professor Emerita, Educational Foundations, Leadership & Technology, May 2009. PhD, UCLA; MEd, Auburn; MLS, Columbia; BS, CCNY

- LECHNER, NORBERT M.**, Professor Emeritus, College of Architecture, Design & Construction, July 2006. MS, Columbia, BS, BArch, CUNY;
- LEDBETTER, WILLIAM N.**, Assoc. Professor Emeritus, Management, June 1991. BSIE, Alabama; MS, Georgia Tech; PhD, Oklahoma St.
- LEISCHUCK, EMILY REAVES**, Asst. to the President & Board of Trustees Emerita, September 1995. BS, Alabama; MEd, Auburn
- LEISCHUCK, GERALD S.**, Executive Asst. to the President & Secretary to the Board of Trustees Emeritus, April 1997. AB, MA, N. Colorado; EdD, Auburn
- LEWIS, PHILIP M.**, Professor Emeritus, Psychology, November 2008. PhD, MA, Syracuse; AB, Hamilton
- LEY, TERRY C.**, Professor Emeritus, Curriculum & Teaching, May 2001. PhD, MA
- LINDHOLM, BYRON W.**, Assoc. Professor Emeritus, Family & Child Development, September 1995. BA, Northwestern; PhD, Illinois
- LISANO, MICHAEL**, Assoc. Professor Emeritus, Zoology - Wildlife Sciences, June 2000. BS, MS, Sam Houston; PhD, Texas A&M
- LITTLE, ALTON S.**, Assoc. Professor Emeritus, Technical Services, July 1977. BCE, Auburn; MSCE, Georgia Tech
- LITTLETON, TAYLOR D.**, Mosley Professor Emeritus, English, September 1995. BS, MS, PhD, Florida St.
- LOCKROW, A. LYNN**, Professor Emeritus, Theatre, December 2008. BS, E. Tennessee St.; MFA, North Carolina-Greensboro
- LOGUE JR, HANCHEY E.**, Professor Emeritus, Journalism, July 1993. BS, MA, Auburn
- LONG, JAMES E.**, Professor Emeritus, Economics, December 2010. PhD, Florida State; MS, Florida State; AB, Erskine
- LOVELL, RICHARD T.**, Professor Emeritus, Fisheries & Allied Aquaculture, September 1998. BS, MS, Oklahoma St; PhD, LSU
- LOVSHIN JR, LEONARD L.**, Professor Emeritus, Fisheries & Allied Aquacultures, December 2003. PhD, Auburn; MS, Wisconsin; BS, Miami
- LOWRY, JAMES L.**, Professor Emeritus, Electrical Engineering, September 1995. BEE, ME, Auburn; PhD, Florida
- MACEINA, MICHAEL J.**, Professor Emeritus, Fisheries, February 2010. PhD, Texas A&M; MS, BS, Florida
- MADRIGAL, JOSE A.**, Professor Emeritus, Foreign Languages & Literatures, July 2008. PhD, Kentucky; MA, BA, Michigan State
- MAGHSOODLOO, SAEED**, Professor Emeritus, Industrial & Systems Engineering, May 2007. PhD, MS, BS, Auburn
- MANSFIELD, PHILLIP D.**, Associate Professor Emeritus, Clinical Sciences, April 2003. DVM, Auburn
- MARCINKO, DOROTHY K.**, Librarian III Emerita, Ralph Brown Draughon Library, August 2002. EDS, Auburn, MLS, Texas Woman's, AB, Phillipines
- MARION, JAMES E.**, Dean Emeritus College of Agriculture, & Director Emeritus, AAES, September 1999. BS, Berea; MS, Kentucky; PhD, Georgia
- MARTIN, DAVID L.**, Professor Emeritus, Political Science, January 1997. BA, Redlands; MA, PhD, Claremont
- MARTIN, JAMES E.**, President Emeritus, August 1993. BS, Auburn; MS, North Carolina St; PhD, Iowa St.
- MARTIN, NEIL R.**, Professor Emeritus, Agricultural Economics & Rural Sociology, June 2000. BS, MS, Auburn; PhD, Illinois
- MARTIN, JOHN**, Assoc. Professor Emeritus, Educational Leadership, December 1988. BS, EdD, Auburn; MA, Alabama
- MARTINSON, TOM L.**, Professor Emeritus, Geology & Geography, September 2007. PhD, Kansas; BA, Oregon
- MARTY, EDWARD C.**, Professor Emeritus, Building Tech., June 1972. BArch, MArch, Auburn
- MCCORD JR, ROBERT WARREN**, Extension St. Program Leader for Community Resource Development, Alabama Cooperative Extension System & Professor Emeritus, Consumer Affairs, October 2003. BS, North Alabama; MS, PhD, Auburn
- MCCORD, SAMMY O.**, Assoc. Professor Emeritus, Finance, June 1998. BA, MBA, PhD Arkansas
- MCCULLERS, GAIL H.**, Director Emerita, Housing & Residence Life, October 2002. BS, MEd, Auburn
- MCGLYNN, FRANCIS D.**, Professor Emeritus, Psychology, December 2010. PhD, MA, Missouri; AB, Missouri Valley
- MCGUIRE, JOHN A.**, Professor Emeritus, Botany & Microbiology, October 1993. BS, MS, Mississippi St; PhD, Auburn
- MCGUIRE, ROBERT L.**, Professor Emeritus, Animal & Dairy Sciences, August 1994. BS, MS, North Carolina St; PhD, Kentucky
- MCKOWN, DELOS B.**, Professor & Head Emeritus, Philosophy, September 1995. BA, Alma; BD, Lexington Theo; MA, Kentucky; PhD, Florida St.
- MCPHEETERS, E. KEITH**, Professor Emeritus & Dean Emeritus, Architecture, June 1989. BArch, Oklahoma; MFA, Princeton
- MEADOWS, MARK E.**, Professor & Department Head Emeritus, Counseling & Counseling Psychology, January 1995. BS, Georgia Southern; MA, Peabody; EdD, Georgia
- MELANCON, MICHAEL S.**, Professor Emeritus, History, May 2010. PhD, MA, Indiana; BA, Loyola
- MELDAHL, RALPH S.**, Assoc. Professor Emeritus, Forestry & Wildlife Sciences, September 2005. BS, MS, PhD, Wisconsin
- MELIUS, PAUL**, Professor Emeritus, Chemistry, June 1991. BS, Bradley; MS, Chicago; PhD, Loyola
- MELVILLE, JOEL G.**, Professor Emeritus, Civil Engineering, May 2009. PhD, BS, Penn State; MS, Texas
- MELVIN, EMILY A.**, Associate Professor Emerita, College of Education, May 2006. EdD, MEd, Virginia; BS, Old Dominion
- MEYER, DARRELL C.**, Professor Emeritus, Architecture, January 1997. BA, California St; MRP, Pennsylvania
- MILLER, RALPH E.**, Assoc. Professor Emeritus, Theatre, June 2002. PhD, Wayne St., MA, Emporia St, BS, Kent St
- MILLER, THOMAS**, Assoc. Professor Emeritus, Educational Media, June 1987. BS, Berry; MS, Stout St; EdD, Indiana
- MILLMAN, MARY M.**, Assoc. Professor Emerita, Foreign Languages, June 1994. AB, Michigan; MA, East Michigan; MA, New York; EdD, Georgia
- MILLMAN, RICHARD G.**, Professor Emeritus, Architecture, October 1989. BArch, MArch, Michigan
- MILTON, JAMES L.**, Professor Emeritus, Small Animal Surgery & Medicine, January 1995. DVM, MS, Auburn
- MIRARCHI, RALPH E.**, Professor Emeritus, Forestry & Wildlife Sciences, February 2008. PhD, MS, Virginia Tech; BS, Muhlenberg
- MITREWSKI, GEORGE**, Associate Professor Emeritus, Foreign Languages & Literatures, June 2009. PhD, Ohio State
- MOLTZ, FRED J.**, Professor Emeritus, Civil Engineering, September 1995. BS, MSCE, Drexel; PhD, Stanford
- MONTJOY, ROBERT S.**, Professor Emeritus, Political Science, September 2004. PhD, Indiana; MA, Alabama; BA, Mississippi
- MOORE JR, E. B.**, Professor Emeritus, Education Administration, September 1978. AB, MBA, Syracuse; EdD, Florida
- MOORE, JANE B.**, Professor Emerita, Health & Human Performance, September 1996. BA, Judson; MS, Tennessee; EdD, Alabama
- MOORE, WAYNE T.**, Professor & Carillonner Emeritus, Music, September 1995. AB, Elon; AM, EdD, Columbia
- MORACCO, JOHN C.**, Professor Emeritus, Counseling & Counseling Psychology, September 1995. BS, SUNY; MA, Arizona St; PhD, Iowa
- MORGAN, ALICE S.**, Assoc. Professor Emerita, Vocational & Adult Education, December 1986. BS, Southern Mississippi; MA, Alabama; EdD, Auburn
- MORGAN, JULIA M.**, Assoc. Professor Emerita, Music, June 1998. BM, MM, Alabama
- MORGAN, LAURENCE**, Assoc. Professor Emeritus, Music, June 1985. BM, Alabama; MM Columbia
- MORGAN, WILLIAM W.**, Professor Emeritus, Industrial Engineering, January 1982. BBA, Georgia; MS, Georgia Tech
- MORGAN-JONES, GARETH**, Professor Emeritus, Entomology and Plant Pathology, April 2011. PhD, MS, Nottingham; DSc, BSc, Wales
- MORRIS IV, DREWRY H.**, Associate Professor Emeritus, Foreign Languages & Literatures, June 2009. PhD, North Carolina; MA, Yale; BA, Davidson
- MORROW, PATRICK D.**, Professor Emeritus, English, May 2007. PhD, MA, Washington; AB, Southern California
- MOSS, BUELON R.**, Professor Emeritus, Animal Sciences, December 2003. PhD, Tennessee; BS, Berea
- MOUNT, ROBERT H.**, Professor Emeritus, Zoology & Entomology, September 1986. BS, MS, Auburn; PhD, Florida
- MULLEN, GARY R**, Professor Emeritus, Entomology & Plant Pathology, February 2010. PhD, MS, Cornell; BA, Northeastern

- MYLES, WILLIAM R.**, Assoc. Professor Emeritus, Management, September 1977. BS, MA, Pittsburgh
- NEELY, WILLIAM C.**, Professor, 1966. PhD, LSU; MS, LSU; BS, Mississippi State
- NELSON, BARBARA K.**, Posthumous Librarian Emerita, Library, January 2007. BA, Central Michigan; MA, Michigan St; MLS, Michigan
- NEWKIRK, SANDRA**, Assoc. Professor Emerita, Health & Human Performance, May 2006. BS, Purdue, MS, Indiana
- NEWTON, DAVID S.**, Assoc. Professor Emeritus, Pharmacy Care Systems; Asst. Dean Emeritus, Pharmacy, September 1995. BBA, BS, MBA, PhD, Mississippi
- NEWTON, WESLEY P.**, Professor Emeritus, History, September 1987. AB, Missouri; MA, PhD, Alabama
- NICHOLS, JAMES O.**, Assoc. Professor Emeritus, Aerospace Engineering, July 1993. BSAE, MSE, PhD, Alabama
- NIEBUHR, ROBERT E.**, Assoc. Professor Emeritus, Management, August 2001. BS, Cincinnati; PhD, MS, Ohio St.
- NIST, JOAN S.**, Professor Emerita, Educational Foundations, Leadership & Technology, June 1992. AB, Lawrence; MA, Indiana; EdD, Auburn
- NOLAND, RONALD G.**, Assoc. Professor Emeritus, Curriculum & Teaching, September 1991. BS, MEd, LSU; EdD, Southern Mississippi
- NORRIS, DWIGHT R.**, Professor Emeritus, College of Business, 2007. PhD, MBA, Georgia; BS, Valdosta State
- NUNNELLY, SUSAN C.**, Director Emerita of Campus Recreation, Student Affairs, January 2008.
- NUNNALLY, THOMAS**, Associate Professor Emeritus, English, June 2010. PhD, MA, Georgia; BA, Alabama
- NUSBAUM, KENNETH E.**, Professor Emeritus, Pathobiology, December 2010. PhD, MS, Georgia; DVM, Cornell
- O'BRIEN, J. FRED**, Director Emeritus, Engineering Extension, October 1992. BME, MME, Auburn
- O'LEARY, VIRGINIA E.**, Professor Emerita, Psychology, July 2006. PhD, MA, Wayne State; BA, Chatham
- OLSON, DOUGLAS J.**, Professor Emeritus, Art, August 2001. MFA, Cincinnati; BFA, Layton
- OWSLEY JR, FRANK L.**, Professor Emeritus, History, September 1995. BA, Vanderbilt; MA, PhD, Alabama
- PANANGALA, VICTOR S.**, Professor Emeritus, Pathobiology, 1994. DVM, E. Pakistan Ag; MS, Guelph; PhD, Cornell
- PARKER JR, FRAZIER**, Professor Emeritus, Civil Engineering, May 2009. PhD, MS, Texas; BS, Alabama
- PARKS, PAUL F.**, Provost Emeritus & Professor Emeritus, Animal & Dairy Science, September 1993. BS, MS, Auburn; PhD, Texas A&M
- PATTERSON, RICHARD M.**, Professor Emeritus, Botany, Plant Pathology & Microbiology, April 1985. BS, MS, Florida; PhD, Penn. St.
- PEARSON, ROBERT E.**, Professor & Asst. Dean Emeritus, Harrison School of Pharmacy, October 2002. MS, BSPHarm, Illinois
- PENDERGAST, PATRICK F.**, Assoc. Professor Emeritus, Political Science, December 1992. BS, John Jay; MPS, Auburn
- PERKINS, WARREN S.**, Professor Emeritus, Textile Engineering, June 1994. BS, MS, Clemson
- PERRICONE, CATHERINE**, Professor Emerita, Foreign Languages & Literatures, April 2005. BA, Notre Dame; MA, Oklahoma; PhD, Tulane
- PETERSON, CURT M.**, Professor Emeritus, Botany & Microbiology, July 1997. BS, Moorehead St; PhD, Oregon
- PETERSON, JOSEPH G.**, Assoc. Professor Emeritus, Chemistry, July 1981. BS, MS, Auburn
- PFEIL, EVA**, Professor Emerita, Industrial Design, June 1988. BID, MVC, Ulm Graduate School of Design; Certificate Psychology, Zurich; PhD, Walden
- PHILLIPS, CHARLES L.**, Professor Emeritus, Electrical Engineering, October 1987. BEE, MSEE, PhD, Georgia Tech
- PHILLIPS, PHYLLIS P.**, Assoc. Professor Emerita, Speech Pathology, June 1983. BS, MEd, EdD, Auburn
- PHILLIPS, RAY C.**, Professor Emeritus, Educational Leadership, October 1982. BS, Middle Tennessee St; MA, Peabody; EdD, Auburn
- PLUMB, JOHN A.**, Professor Emeritus, Fisheries & Allied Aquaculture, September 1998. BA Bridgewater; MS, Illinois; PhD, Auburn
- POPMA, THOMAS J.**, Assoc. Professor Emeritus, Fisheries & Allied Aquacultures, October 2001. BS, MS, Michigan St; PhD, Auburn
- POTTER, MARY ANN R.**, Associate Professor Emerita, Consumer Affairs, May 2010. EdD, Auburn; MHE, Georgia; BS, Georgia Southern
- POWELL, ARLIE A.**, Professor Emeritus, Horticulture, December 2003. BS, MS, PhD, Florida
- POWERS, ROBERT D.**, Professor Emeritus, Pathology, September 1995. BS, PhD, Tennessee; DVM, Auburn
- PRICE, CHARLES E.**, Professor Emeritus, College of Business, 2007. PhD, Georgia; MBA, BBA, Auburn
- PRICE, MARK S.**, Professor Emeritus, Art, June 2000. MFA, BFA, Illinois
- PRITCHETT, JOHN F.**, Professor Emeritus, Biological Sciences, June 2004. PhD, Iowa St, MS, BS, Auburn
- PUCKETT, JOHN R.**, Professor Emeritus, Health & Human Performance, September 1993. BS, East Tennessee St; MS, EdD, Tennessee
- PUGH, WILLIAM N.**, Assoc. Professor Emeritus, Finance, June 2004. PhD, MS, Florida St; BS, Auburn
- PUROHIT, RAM C.**, Professor Emeritus, Clinical Sciences, February 2006. PhD, Auburn; MS, Tuskegee, DVM, Rajasthan
- RAMEY, GEORGE E.**, Professor Emeritus, Civil Engineering, August 2007. BCE, Auburn; MSCE, Auburn; PhD, Colorado
- RASCH, RONALD H.**, Professor Emeritus, Accountancy, December 2003. BS, Kansas St; PhD, Texas; MS, Air Force Inst. Tech
- REINKE, CARL M.**, Associate Professor Emeritus, Pharmacy Practice, May 2007. PharmD, MS, Michigan; BA, Jamestown
- RENDEN, JOSEF A.**, Professor Emeritus, Poultry Science, June 2001. PhD, MS, BS, California-Davis
- RICHARDSON, DON R.**, Professor Emeritus, Communication, August 1991. BA, Auburn; MA, PhD, Ohio St.
- RIDDELL JR, M. GATZ**, Professor Emeritus, Clinical Sciences, June 2005. MS, Auburn, DVM, Kansas St.
- RIDGEWAY, LARRY D.**, Asst. Vice President Emeritus, Student Affairs, September 1995. BS, MA, South Alabama
- RILEY, RHETT E.**, Vice President Emeritus, Business & Finance & Treasurer, July 1993. BS, Auburn
- RITLAND, RAYMOND W.**, Professor Emeritus, Economics, June 1972. BSC, MA, PhD, Iowa
- ROBERTSON, BENJAMIN THOMAS**, Professor Emeritus, Veterinary Medicine, October 1993. BS, Kentucky; DVM, MS, Auburn
- ROBINSON, CECIL E.**, Assoc. Professor Emeritus, Mathematics, January 1991. BS, Auburn; MA, PhD, Alabama
- RODEN, REBECCA H.**, Asst. Dean Emerita, Graduate School, June 1997. BS, Auburn
- ROGERS, CHARLES M.**, Assoc. Professor Emeritus, Psychology, September 1985. BA, Lafayette; PhD, Yale
- ROGERS JR, JACK W.**, Professor Emeritus, Mathematics & Statistics, 2007. PhD, MA, BA, Texas
- ROGERS, WILMER A.**, Professor & Head Emeritus, Fisheries & Allied Aquacultures, September 1995. BS, Southern Mississippi; MS, PhD, Auburn
- ROLAND, DAVID A.**, Professor Emeritus, Poultry Science, June 2010. BS, PhD, Georgia
- ROSE, CHARLES S.**, Assoc. Professor Emeritus, English, June 1994. AB, MA, PhD, Vanderbilt
- ROSEN, MELVIN**, Assoc. Professor & Head Track Coach Emeritus, Health & Human Performance, September 1991. BS, MS, Iowa
- ROSENBLATT, DAVID J.**, Archivist II Emeritus, Ralph Brown Draughon Library, August 2001. BA, MA, Missouri
- ROSS, CONRAD H.**, Professor Emeritus, Art, October 1997. BFA, Illinois; MFA, Iowa
- ROSSI, CHARLES R.**, Professor Emeritus, Veterinary Medicine, September 1993. BS, DVM, PhD, Illinois; MS, Ohio St.
- ROWSEY, ROBERT E.**, Professor Emeritus, Curriculum & Teaching, May 2005. EdD, Auburn, MS, BS, Marshall
- RUFFIN, BURLSON G.**, Assoc. Professor Emeritus, Animal & Dairy Sciences, September 1995. BS, MS, Mississippi St; PhD, Auburn
- RUMPH, PAUL F.**, Professor Emeritus, Anatomy, Physiology & Pharmacology, October, 1999. MS, DVM, Auburn



- RYGIEL, DENNIS**, Professor Emeritus, English, May 2008. PhD, Cornell; MA, BA, Loyola
- SALTS, CONNIE J.**, Professor Emerita, Human Development & Family Studies, August 2004. PhD, Florida St; MA, Kent St; BS, Ohio St.
- SCHAER, WALTER**, Professor Emeritus, Industrial Design, June 1992. BAA, Berne; MID, Ulm; PhD, Walden
- SCHMITTOU, HOMER R.**, Professor Emeritus, Fisheries & Allied Aquacultures, April 1991. BS, Tennessee Tech; MS, PhD, Auburn
- SELMAN, JAMES W.**, Assoc. Professor Emeritus, Vocational & Adult Education, September 1995. BS, MS, EdD, Florida St.
- SFORZINI, RICHARD H.**, Professor Emeritus, Aerospace Engineering, July 1985. BS, West Point; ME, MIT
- SHELL, E. WAYNE**, Professor Emeritus, Fisheries & Allied Aquacultures, February 1994. BS, MS, Auburn; PhD, Cornell
- SHERLING, WILLIAM**, Assoc. Professor Emeritus, Aerospace Engineering, October 1980. BAE, Auburn; MSAE, Georgia Tech
- SHEVLIN, PHILIP B.**, Professor Emeritus, Chemistry, June 2002. PhD, MS, Yale; BS, LaFayette
- SHIELDS, ALAN J.**, Assoc. Professor Emeritus, Sociology, September 1989. BA, MA, N. Texas St.
- SHUMACK, ROBERT L.**, Professor Emeritus, Horticulture, April 2010. BS, MA, Auburn; PhD, Michigan State
- SHUMPERT, THOMAS H.**, Professor Emeritus, Electrical & Computer Engineering, September 2000. BSEE, MSEE, PhD, Mississippi St.
- SILVERN, STEVEN B.**, Professor Emeritus, Curriculum & Teaching, May 2008. BS, MEd, Maryland; PhD, Wisconsin
- SIMMS, JOHN D.**, Professor Emeritus, Journalism, September 1992. BS, Auburn; MA, LSU
- SIMON, MARLLIN L.**, Professor Emeritus, Physics, December 2010. PhD, Missouri; MS, Michigan State; BS, Kansas State
- SIMPSON, STEPHEN T.**, Professor Emeritus, Clinical Sciences, November 2007. BS, DVM, Auburn; MS, Purdue
- SKELTON, CHARLOTTE A.**, Professor & Dean Emerita, School of Nursing, May 2005. BSN, Alabama-Birmingham; MSN, Med. College, Georgia; EdD, Auburn
- SLATEN, BUSTER L.**, Professor Emeritus, Consumer Affairs, June 2005. PhD, Maryland; MS, Arkansas; BS, Arkansas A&M
- SLATON, CHRISTA D.**, Professor Emerita, Political Science, July 2010. PhD, MA, Hawaii-Manoa; BS, Tennessee-Nashville \*
- SMITH, CURTIS R.**, Professor Emeritus, Communication Disorders, January 1991. BS, MS, PhD, Southern Mississippi
- SMITH, DAVID M.**, Librarian III & Head Emeritus, Cataloging, Ralph Brown Draughon Library, July 1998. AB, Huntingdon; MLS, Emory
- SMITH, FLOYD S.**, Assoc. Professor Emeritus, Mechanical Engineering, September 1981. BSChE, BSME, MSChE, Auburn
- SMITH, LEO A.**, Professor Emeritus, Industrial Engineering, September 1995. BE, M.E, Georgia Tech; PhD, Purdue
- SMITH, PAUL C.**, Professor Emeritus, Pathobiology, April 1996. DVM, Auburn; MS, Ohio St; PhD, Iowa St.
- SMITH, ROBERT C.**, Professor Emeritus, Animal & Dairy Sciences, September 1995. BS, Elmburst; PhD, Illinois College of Medicine
- SMITH, ROBERT E.**, Professor Emeritus, Pharmacy Practice, September 2010. BA, Arizona State; PharmD, Southern California
- SMITH, RONALD H.**, Professor Emeritus, Entomology & Plant Pathology, December 2003. PhD, MS, BS, Auburn
- SMITH, THOMAS R.**, Professor Emeritus, Music, May 2006. DMA, Colorado; MA, Iowa; BM, Samford
- SMITHERMAN, RENFORD O.**, Professor Emeritus, Fisheries & Allied Aquacultures, September 1994. BS, PhD, Auburn; MS, North Carolina St.
- SNOW, SAMUEL P.**, Professor Emeritus, Architecture, September 1981. BS, BLA, MS, Massachusetts; MLA, Harvard
- SNYDER, CHARLES A.**, Professor Emeritus, Management, July 2006. PhD, Nebraska; MS, South Dakota St; MBA, Ohio St.
- SOLOMON JR., HARRY M.**, Professor Emeritus, English, May 2007. PhD, MA, Duke; BA, Stephen Austin
- SORJONEN, DONALD C.**, Professor Emeritus, Small Animal Surgery & Medicine, January 2000. BS, DVM, Texas A&M; MS, Auburn
- SOUTH, DAVID B.**, Professor Emeritus, Forestry & Wildlife Sciences, December 2010. PhD, Auburn; MS, BS, North Carolina State
- SPARROW, THOMAS W, IV**, Director Emeritus, Beard-Eaves-Memorial Coliseum, June 2005. BS, Auburn
- SPEAKE, DANIEL W.**, Professor Emeritus, Zoology & Wildlife Sciences, January 1995. BS, MS, PhD, Auburn
- SPEER, WILLIAM A.**, Professor Emeritus, Architecture, June 1980. BS Arch, Clemson, MArch, Rensselaer Tech
- SPENCER, WILLIAM A.**, Professor Emeritus, Educational Foundations Leadership, & Technology, January 2008. BS, Southern Illinois; MA, PhD, Illinois
- SPRING, DONALD J.**, Assoc. Professor Emeritus, Aerospace Engineering, June 1998. BAE, MAE, Auburn; PhD, Illinois
- STALLINGS, JAMES L.**, Assoc. Professor Emeritus, Agricultural Economics & Rural Sociology, July 1991. BS, MS, Purdue; PhD, Michigan St.
- STARR, PAUL D.**, Professor Emeritus, Communication & Journalism, May 2008. PhD, MA, Cal-Santa Barbara; AB, Pacific
- STAUFFER, BONNIE B.**, Assoc. Director Emerita, Outreach Program Office, September 2008. BA, MS, New Mexico; EdD, Northern
- STEELE, H. ELLSWORTH**, Professor Emeritus, Economics, April 1982. BA, MA, Nebraska; PhD, Ohio St.
- STEVENSON, R. EUGENE**, Editor Emeritus, Research Information, Agricultural Experiment Station, January 1992. BS, Auburn
- STRAIN, WILLIE L.**, Asst. Director Emeritus, Alabama Cooperative Extension System, & Assoc. Professor Emeritus, Journalism, April 1999. BS, MEd, Tuskegee; MS, Wisconsin
- STRAITON JR, THOMAS H.**, Librarian III & Asst. Dean Emeritus, Library, July 2005. MLS, Alabama; BS, Auburn
- STRAWN, HARRY B.**, Extension Specialist & Professor Emeritus, Agricultural Economics & Rural Sociology, December 2003. PhD, MS, Tennessee; BS, North Carolina St.
- STREET, DONALD R.**, Professor Emeritus, Economics, June 1994. BS, MS, Auburn; PhD, Penn St.
- STRINGFELLOW, DAVID A.**, Professor Emeritus, Pathobiology, June 2008. MS, Auburn; DVM, Cornell
- STROTHER, GENE R.**, Assoc. Professor Emeritus, Entomology, November 1998. BS, MS, PhD, LSU
- SWAIM, STEVEN F.**, Professor Emeritus, Clinical Sciences, March 2003. MS, Auburn, DVM, Kansas St.
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## ANIMAL SCIENCES

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#### HORTICULTURE

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#### RESEARCH CENTERS AND UNITS

##### AU NATURAL RESOURCES EDUCATION CENTER

**CAMDEN, WILCOX COUNTY**  
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##### BLACK BELT RESEARCH AND EXTENSION CENTER MARION JUNCTION, DALLAS COUNTY

**HOLLIMAN, JAMES L.**, Director, 1975. BS, MS, Mississippi St  
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##### CHILTON RESEARCH AND EXTENSION CENTER CLANTON, CHILTON COUNTY

**PITTS, JAMES A.**, Director, 1979. BS, MS, Auburn

##### E.V. SMITH RESEARCH CENTER SHORTER, MACON COUNTY

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##### GULF COAST RESEARCH AND EXTENSION CENTER FAIRHOPE, BALDWIN COUNTY

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##### NORTH ALABAMA HORTICULTURE RESEARCH CENTER CULLMAN, CULLMAN COUNTY

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##### ORNAMENTAL HORTICULTURE RESEARCH CENTER SPRING HILL, MOBILE COUNTY

**OLIVE, JOHN, W.**, Director, 1989. BS, MS, Georgia  
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##### SAND MOUNTAIN RESEARCH AND EXTENSION CENTER CROSSVILLE, DEKALB COUNTY

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**HARKINS, DAVID**, Assoc. Director, 1993. BS, Mississippi St

##### UPPER COASTAL PLAINS AGRICULTURAL RESEARCH CENTER WINFIELD, FAYETTE & MARION COUNTIES

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##### BREWTON AND MONROEVILLE AGRICULTURAL EXPERIMENT RESEARCH UNITS - ESCAMBIA AND MONROE COUNTIES

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##### PRATTVILLE AGRICULTURAL EXPERIMENT RESEARCH UNIT - AUTAUGA COUNTY

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# Alabama Cooperative Extension System

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## AGRICULTURE

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\* **TAYLOR, STEVEN E.**, Biosystems Engineering  
\* **TOUCHTON, JOSEPH**, Agronomy and Soils  
\* **ROUSE, DAVID**, Fisheries & Allied Aquacultures  
\* **GREENE, WAYNE**, Animal & Dairy Sciences  
\* **WILLIAMS, J, DAVID**, Horticulture  
\* **APPEL, ARTHUR**, Entomology/Plant Pathology  
\* **CONNER, DONALD E.**, Poultry Science

## FORESTRY AND WILDLIFE SCIENCES

\* **SHEPARD, JAMES P.**, Dean

## HUMAN SCIENCES

\* **HENTON, JUNE**, Dean

## DEPARTMENT HEADS

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\* **LAMKE, LEANNE**, Human Development & Family Studies  
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Development, 1975. BS, MS Alabama A&M  
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Auburn  
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Auburn  
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#### ANIMAL SCIENCES

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#### ENTOMOLOGY AND PLANT PATHOLOGY

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#### FISHERIES

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North Carolina; MS, North Carolina; PhD, Wisconsin

#### FORESTRY AND WILDLIFE

**ALLEN, BRENDA M.**, Extension Forester & Asst. Prof., 1978. BS, MS,  
Tuskegee; PhD, Auburn  
**ARMSTRONG, JAMES B.**, Extension Wildlife Scientist & Prof., 1990.  
BS, Freed-Hardeman; MS, Abilene  
**BARLOW, REBECCA**, Extension Specialist & Asst. Prof., 2007. BS,  
MS, PhD, Mississippi St  
**FLYNN, KATHRYN**, Extension Forester & Assoc. Prof., 1992. BS,  
Auburn; MS, PhD, LSU  
**MCNABB, KEN**, Extension Specialist & Prof., 2007. BS, MS, Southern  
Illinois; PhD, Florida  
**SMIDT, MATHEW F.**, Extension Specialist & Assoc. Prof., 2000. BS,  
Doane; MS, Duke; PhD, Minnesota-St Paul  
**SMITH, MARK D.**, Extension Specialist & Asst. Prof., 2007. BS,  
Michigan St.; MS, PhD, Mississippi St

#### HORTICULTURE

**CONEVA, ELINA**, Extension Specialist & Assistant Professor, 2006.  
BS, MS, PhD, Agrarian University  
**GOFF, WILLIAM D.**, Extension Horticulturist & Prof., 1982. BS, MS,  
Mississippi St; PhD, Clemson  
**HUCKABAY, ELLEN K.**, Administrator II, Outreach Programs, 2007.  
**KEMBLE, JOSEPH M.**, Extension Horticulturist & Professor, 1993. BS,  
Delaware; MS, PhD, North Carolina St  
**KESSLER, J. RAYMOND**, Extension Specialist & Professor, 1995. BS,  
Auburn; MS, Mississippi St; PhD, Georgia  
**SMITH, KERRY**, Administrator III, Outreach Programs, 2003. BA,  
Birmingham Southern; BS, MS, Auburn  
**TILT, KENNETH**, Extension Horticulturist & Prof., 1989. BA, MS, E.  
Carolina; BS, PhD, North Carolina St

#### POULTRY SCIENCE

**BILGILI, SACIT F.**, Extension Poultry Scientist & Prof., 1985. DVM,  
Ankara; MS, Oregon; PhD, Auburn  
**BLAKE, JOHN P.**, Extension Poultry Scientist & Prof., 1989. BS, Penn  
St; MS, Maine; PhD, VPI  
**HESS, JOSEPH B.**, Extension Poultry Scientist & Prof., 1992. BS,  
Penn St; MS, PhD, Georgia  
**MACKLIN, KENNETH**, Extension Specialist & Professor, 1996. BS,  
MS, North Illinois; PhD, Auburn  
**WEESE, JEAN OLDS**, Extension Food & Nutrition Specialist, 1993.  
BS, MEd, Eastern Kentucky; PhD, Tennessee

#### CONSUMER AFFAIRS

**CENTRALLO, CAROL**, Extension Apparel & Textile Management  
Specialist, 1992. BS, North Alabama; PhD, Minnesota

#### HUMAN DEVELOPMENT AND FAMILY STUDIES

**ABELL, ELLEN**, Extension Specialist & Assoc. Prof., 1993. BA, Illinois;  
MA, PhD, Washington St  
**ADLER, FRANCESCA**, Extension Specialists & Assoc. Prof., 2001. BA,  
MS, PhD, North Carolina  
**KERPELMAN, JENNIFER L**, Extension Specialist & Prof., 1999. BS,  
MS, Old Dominion; PhD, Auburn

#### NUTRITION AND FOOD SCIENCE

**STRUEMPLER, BARBARA J.**, Extension Nutritionist & Prof., 1984. BS,  
Nebraska; MS, PhD, Iowa St

#### URBAN PROGRAMS

**BURGESS-NELOMS, KIMBERLY**, Urban Extension Specialist, 1994.  
BS, North Alabama; MS, Montevallo  
**COLEMAN, EDNA T.**, Extension 4-H Specialist, 1981. BS, MBA,  
Alabama A&M  
**COOK, DONNIE L.**, Extension Specialist, Health & Nutrition, 1997. BS,  
MS, Tuskegee; PhD, Alabama A&M  
**CORREA, JULIO**, Extension Animal Science Specialist, 1988. BS,  
Puerto Rico; MS, Tuskegee; PhD, Michigan St

**DWYER, JEAN HALL**, Extension Specialist, Electronic Design & Applications, 1987. BS, Kent St; MS Alabama A&M

**GOLSON-GARNER, KARNITA**, Extension Specialist, 2009. BS, MS, PhD, Alabama A&M

**HENDERSON, PATRICIA**, Extension Specialist, 1989. BS, MEd, Tuskegee

**JOHNSON, JACQUELINE U.**, Extension Veterinarian, 1989. BS, Tuskegee; MS, North Carolina St; PhD, Pennsylvania

**JOHNSON, MARILYN S.**, Extension Specialist, Family Welfare, 1998. BS, North Carolina A&T; MS, Case Western; EdD, Nova Southern

**LANGHAM, ADRIANE**, Urban Regional Nutrition Educator, 2006.

**LEE, SALLIE M.**, Urban Regional Extension Agent, 2005. BS, Longwood College; MS, Samford

**LEITE-BROWNING, MARIA L.**, Extension Specialist, 2006. MS, Fluminense; DVM, Bahia

**MORRIS, ANDREA C.**, Urban Nutrition Educator, 2007.

**RICHARDSON, ROGER A.**, Extension Specialist, 2007. BA, Tuskegee; MA, Alabama A&M; PhD, Auburn

**SABOTA, CATHERINE**, Extension Horticulture Specialist, 1983. BS, MS Texas Tech; PhD Illinois

**WARREN, TAMARA C.**, Urban Health and Nutrition Specialist, 2007. BS, MS, PhD, Alabama A&M

**WILSON, BERNICE B.**, Extension Urban Specialist, Resource Management, 1998. BS, MEd, EdS, Tuskegee; PhD, Virginia Tech

### COUNTY STAFFS

#### AUTAUGA COUNTY – PRATTVILLE

**CONNER, VALERIE Y.**, Regional Extension Agent, 1983. BS, Montevallo; MS, Troy St

**HALL, JANICE E.**, Regional Extension Agent, 1998. BS, Auburn, MS, Alabama

**BOWENS, YVONNE D.**, County Extension Coordinator, 1994. BS, Troy St; MS, Tuskegee

**WALTER, JOSINE**, Regional Extension Agent, 2011. BS, Auburn

#### BALDWIN COUNTY – BAY MINETTE

**BRODBECK IV, ARNOLD M.**, Regional Extension Agent, 2007. BA Auburn

**KNOWLTON, CYNTHIA G.**, Regional Extension Agent, 2002. BS, McNeese St; MS, Auburn

**WINGARD, SUSAN F.**, County Extension Coordinator, 1980. BS, North Alabama; MPA, Jacksonville St

**ZAPATA, RAMON R.**, Regional Extension Agent, 2007. BS, MS, Troy St-Montgomery

#### BARBOUR COUNTY – CLAYTON

**HUNTER, RUTH H.**, Regional Extension Agent, 1974. BS, N. Alabama

**KOON, DAVID**, Interim County Extension Coordinator, 1994. BS, MS, Auburn

#### BIBB COUNTY – CENTREVILLE

**HARTZELL, MATTHEW D.**, County Extension Coordinator In Training, 2000. BA, Alabama; MS, Auburn

**MAXWELL, SHNOVIA JOY**, Regional Extension Agent, 2006. BS, Montevallo; MS, West Alabama

#### BLOUNT COUNTY – ONEONTA

**BROCK, RUTH**, Regional Extension Agent, 2006. BS, MS, Alabama; EdS, Auburn

**GRAVES, NANCY G.**, Urban Regional Extension Agent, 1992. BS, MS, Auburn

**PORCH, DANIEL W.**, County Extension Coordinator, 1990. BS, MS, Auburn

#### BULLOCK COUNTY – UNION SPRINGS

**TABB, GEORGE L.**, County Extension Coordinator, 1995. BS, Alabama A&M; MS, Troy St

#### BUTLER COUNTY – GREENVILLE

**PINKSTON, ANTHONY D.**, County Extension Coordinator., 1992. BA, SUNY; MS, Auburn

**GOLDEN, SHARON S.**, Regional Extension Agent, 2004. BS, Montevallo; MS, Alabama

**VOSS, BRONWEN M.**, Regional Extension Agent, 2011. BS, St. Louis

#### CALHOUN COUNTY – ANNISTON

**BURTON, MARCHALE**, Urban Regional Extension Agent, 2000. BS, MS, Jacksonville St

**CHAPPELL, ISAAC B.**, Regional Extension Agent, 1994. BS, MS, Tuskegee

**JACKSON, HAYES A.**, Urban Regional Extension Agent, 2000. BS, Auburn; MS, Jacksonville St

**MOORE, TIFFANY N.**, County Extension Agent, 2003. BS, Auburn

**SARRO, RUTH G.**, Regional Extension Agent, 1980. BS, Auburn; MS, Alabama

**WEST, DAVID H.**, County Extension Coordinator, 1994. BS, MS, PhD, Auburn

#### CHAMBERS COUNTY – LAFAYETTE

**WARD, DEBRA J.**, Regional Extension Agent, 1998. BS, Jacksonville St

**WILKINS, KIMBERLY A.**, County Extension Coordinator, 1994. BS, MS, Auburn

#### CHEROKEE COUNTY – CENTRE

**DERRICK, DAVID E.**, Regional Extension Agent, 1978. BS, Auburn

**MILLER, DANIEL S.**, County Extension Coordinator, 2007. BS, MS, Auburn

#### CHILTON COUNTY – CLANTON

**COOK, MERRILL P.**, Regional Extension Agent, 2007. BS, Auburn; MS, Georgia

**GRAY, GARY**, Regional Extension Agent, 1993. BS, Alabama; MS, Auburn

**WEST, GAY**, County Extension Coordinator, 1991. BS, Montevallo; MA, Alabama

#### CHOCTAW COUNTY – BUTLER

**MILLER, JENNIFER**, County Extension Coordinator, 2007. BS, Alabama; MEd, West Alabama

**OLLISON, JOHN**, Regional Extension Agent, 1981. BS, Alabama A&M

**THOMPSON, SUSAN C.**, Regional Extension Agent, 2002. BS, MA Livingston

#### CLARKE COUNTY – GROVE HILL

**PADGETT, WENDY P.**, Regional Extension Agent, 2002. BS, West Alabama

**TUCKER, J. KEVAN**, County Extension Coordinator, 2003. BS, Mississippi St; MS, West Alabama.

**WOODS, KRISTIN L.**, Regional Extension Agent, 2003. BS, Texas A&M; MS Guelph

#### CLAY COUNTY – ASHLAND

**EAST, WILLIAM, T.**, Regional Extension Agent, 1997. BS, MS, Auburn

**GOOD, KIMBERLY A.**, Regional Extension Agent, 2004. BS, Auburn; MS, West Alabama

**TOMLIN, TONYA A.**, County Extension Coordinator, 2005. BS, MEd, Auburn

#### CLEBURNE COUNTY – HEFLIN

**MATHEWS, ELEANOR**, County Extension Coordinator, 1984. BS, Auburn; MS, Jacksonville St

#### COFFEE COUNTY – NEW BROCKTON

**DILLARD, BRANDON A.**, Interim County Extension Coordinator, 2006. BS, Auburn; MBA, Troy St

**GRAHAM, KIMBERLY K.**, Regional Extension Agent, 2005. BS, Troy St; MA, SW Baptist Seminary

**COLBERT COUNTY – TUSCUMBIA**

**BURGESS, APRIELL**, Urban Regional Extension Agent, 2007. BS, North Alabama

**CAMPBELL, JEWEL Y.**, County Extension Agent, 2008. BS, Tennessee St

**MCDONALD, TERESA C.**, County Extension Coordinator, 1976. BS, MEd, Alabama A&M

**SOFTLEY, KAREN E.**, Regional Extension Agent, 2009. BS, North Alabama

**CONECUH COUNTY – EVERGREEN**

**BROGDEN, EMILY H.**, County Extension Coordinator, 1980. BS, Auburn; MS, Livingston

**COOSA COUNTY – ROCKFORD**

**VINES, ROGER C.**, County Extension Coordinator, 1983. BS, Auburn; MS, LSU

**COVINGTON COUNTY – ANDALUSIA**

**BRANNON, BRIDGETTE H.**, Regional Extension Agent, 1999. BS, Montevallo; MEd, Troy St

**SIMON, CHARLES M.**, County Extension Coordinator, 1989. BS, MS, Auburn

**CRENSHAW COUNTY – LUVERNE**

**BRYAN, DEREK F.**, Regional Extension Agent, 1992. BS, MS, Auburn

**KIMBRO, LINDSAY S.**, Regional Extension Agent, 1998. BS, Troy St

**PARRISH, RUSSELL**, County Extension Coordinator, 1982. BS, MS, Auburn

**CULLMAN COUNTY – CULLMAN**

**CONWAY, JAMES K.**, Regional Extension Agent, 1998. BS, MS, Auburn

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**GLOVER, TONY**, County Extension Coordinator, 2006. BS, MS, Auburn

**PINKSTON, CHARLES B.**, Regional Extension Agent, 1983. BS, Auburn; MS, Mississippi St

**SHANKLIN, DONNA R.**, Regional Extension Agent, 2007. BS, MS, Kentucky; MPH, South Florida

**DALE COUNTY – OZARK**

**AGEE, THOMAS**, County Extension Coordinator, 1991. BS, Alabama A&M; MS, Troy St

**DYKES, RACHEL**, Regional Extension Agent, 2006. BS, MS, Auburn

**DALLAS COUNTY – SELMA**

**HOOVER, SALLIE L.**, Regional Extension Agent, 1998. BS, Alabama College; MS, Alabama

**HOOMES, JOHN W.**, Regional Extension Agent, 2009. BS, MS, Troy St

**NELSON, CALLIE N.**, County Extension Coordinator, 1993. BS, Alabama A&M; MS, Montevallo

**DEKALB COUNTY – FORT PAYNE**

**MILLER, DANIEL S.**, Interim County Extension Coordinator, 2007. BS, MS, Auburn

**SHACKELFORD, TERRY L.**, Regional Extension Agent, 1974. BS, MS, Alabama A&M

**ELMORE COUNTY – WETUMPKA**

**KELLEY, MALLORY J.**, Regional Extension Agent, 2009. BS, MS, Auburn

**MITCHELL, KATRINA**, County Extension Coordinator, 2002. BS, Auburn Montgomery; MS Troy St-Montgomery

**ESCAMBIA COUNTY – BREWTON**

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**FUSSELL, VICTORIA P.**, County Extension Agent, 2000. BS, Alabama; MS, Auburn

**KELLEY, WILLIAM K.**, County Extension Coordinator, 2004. BS, MS, Auburn

**OWENS, JENNINGS L.**, County Extension Agent, 2001. BS, MS, Troy St

**ETOWAH COUNTY – GADSDEN**

**BURGESS, AMY P.**, County Extension Coordinator, 1999. BS, Auburn; MS, West Alabama

**GREGG, TINSLEY H.**, Regional Extension Agent, 1982. BS, MAg, Auburn

**FAYETTE COUNTY – FAYETTE**

**BRASHER, RONNI RENA**, Regional Extension Agent, 2008. BS, Alabama

**GRIFFITH, WARREN**, County Extension Coordinator, 1983. BS, Auburn; MS, Mississippi St

**FRANKLIN COUNTY – RUSSELLVILLE**

**COLE, KATERNIA W.**, County Extension Coordinator, 1999. BS, North Alabama, MA, Phoenix

**GENEVA COUNTY – GENEVA**

**BALTIKAUSKI, MARY N.**, County Extension Coordinator, 1979. BS, MS, Auburn

**GREENE COUNTY – EUTAW**

**DATCHER, WILLIE E.**, Regional Extension Agent, 1984. BS, Alabama A&M; MS, West Alabama

**PRESLEY-FULLER, PATTI**, County Extension Coordinator, 1988. BS, MS, Mississippi St

**HALE COUNTY – GREENSBORO**

**GLADNEY, JONATHAN**, Regional Extension Agent, 1994. BS, MS, Auburn

**GLOVER, BRENDA S.**, Regional Extension Agent, 2005. BS, Tennessee

**SHIRLEY, DENISE R.**, County Extension Coordinator, 1988. BS, Auburn; MS, Livingston

**TEACHER, TOMMIE B.**, Urban Regional Extension Agent, 1993. BS, MS, Alabama A&M

**HENRY COUNTY – ABBEVILLE**

**JONES, JAMES**, County Extension Coordinator, 1997. BS, MS, Auburn

**HOUSTON COUNTY – DOTHAN**

**ANDREASEN, SHELIA**, County Extension Agent, 2004. BS, MS, Tennessee

**CARPENTER, WANDA**, Regional Extension Agent, 2004. BS, MS, Troy St

**CARTER, PHILLIP A.**, Urban Regional Extension Agent, 2000. BS, Auburn; MS, Jacksonville St

**DURR, WILLIE**, County Extension Coordinator, 1979. BS, MS, Alabama A&M

**JAMES, ROSALIND R.**, Urban Regional Extension Agent, 1980. BS, MEd, Tuskegee

**JACKSON COUNTY – SCOTTSBORO**

**CAMPBELL, EMILY R.**, Regional Extension Agent, 1998. BS, Auburn; MS, Kentucky

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**JEFFERSON COUNTY – BIRMINGHAM**

**HELMS, BRIDGETT**, County Extension Agent, 2003. BS, MS, Jacksonville St  
**HYTER, NKENGE C.**, Urban Regional Extension Agent, 2010. BS, Alabama A&M; MS, Nova Southeastern; MS, Strayer Univ  
**MCNEALY, IZETTE**, Regional Extension Agent, 2007. BS, MS, Faulkner  
**WHITTAKER, CYNTHIA L.**, Urban Regional Extension Agent, Urban, 1998. BS, Auburn  
**WISSINGER, JOANN SMITH**, County Extension Coordinator, 1978. BS, MS, Alabama

**LAMAR COUNTY – VERNON**

**WASHINGTON, MAC D.**, County Extension Coordinator, 1979. BS, Alabama A&M; MS, Ohio St

**LAUDERDALE COUNTY – FLORENCE**

**ALLEN, MELANIE G.**, Regional Extension Agent, 2001. BS, North Alabama; MS, Auburn  
**ANDREWS, MARY J.**, Urban Regional Extension Agent, 1981. BS, Alcorn St  
**ARMSTRONG, RANDALL**, County Extension Coordinator, 1974. BS, MS, Auburn  
**BECKER, CHRISTOPHER M.**, Regional Extension Agent, 2008. BS, Alabama A&M  
**SMITH, PATRICIA W.**, Regional Extension Agent, 2004. BS, Knoxville; MS, Tuskegee  
**SPENCER, ROBERT D.**, Extension Area Specialist, 2006. BS, MS, Alabama A&M  
**WISSERT, LELIA C.**, Regional Extension Agent, 1992. BS, Auburn; MS, LSU

**LAWRENCE COUNTY – MOULTON**

**CHENAULT, JERRY**, Urban Regional Extension Agent, 1989. BS, MS Auburn  
**ROBINSON, LINDA**, County Extension Coordinator, 1991. BS, MS, Alabama A&M

**LEE COUNTY – OPELIKA**

**BROWNE, CHARLES**, County Extension Coordinator, 1989. BS, MS, Auburn  
**BARR, TARA M.**, County Extension Agent, 2001. BS, Auburn; MS, Auburn-Montgomery  
**HOLT, KIRSTEN**, Regional Extension Agent, 2004. BS, Mississippi St; MS, Auburn  
**SIMPSON, DIANA G.**, Regional Extension Agent, BA, Florida; MBA, Alabama-Birmingham

**LIMESTONE COUNTY – ATHENS**

**BROMAN, BETTY A.**, County Extension Coordinator, 1999. BS, Florence St; MS, Alabama  
**BECK, MARIAN**, Regional Extension Agent, 1993. BS, Alabama A&M; MS, Northern Illinois  
**CHAPMAN, LLOYD D.**, Regional Extension Agent, 1992. BS, MEd, Auburn

**LOWNDES COUNTY – HAYNEVILLE**

**MANTS, KATANGA**, County Extension Coordinator, 1997. BS, Alabama A&M; MS, Auburn

**MACON COUNTY – TUSKEGEE**

**GRIFFIN, CIJI**, Urban Regional Extension Agent, 2010. BS, MS, Alabama A&M  
**PULLIAM, JOHN S.**, County Extension Coordinator, 1980. BS, Tuskegee; MS, Alabama A&M

**MADISON COUNTY – HUNTSVILLE**

**CREEL, KENNETH W.**, Regional Extension Agent, 1998. BS, MS, Alabama A&M  
**EDMOND, JUDY**, Urban Regional Extension Agent, 1995. BS, MS, Alabama A&M  
**GULLATTE, DONNA L.**, Urban Regional Extension Agent, 1991. BS, Alabama A&M  
**HARRIS, WALTER B.**, County Extension Coordinator, 1991. BS, MS, Alabama A&M  
**JONES, THERESA**, Regional Extension Agent, 2004. BS, MS, Alabama A&M  
**OAKES, SYLVIA**, Regional Extension Agent, 1992. BS, MS, Alabama A&M  
**PHARRIS, WANDA J.**, Regional Extension Agent, 2007. BS, Alabama-Birmingham  
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**WHITTEN, SHIRLEY**, Regional Extension Agent, 1981. BS, Auburn; MS, Alabama A&M

**MARENGO COUNTY – LINDEN**

**FRIDAY, KATHRYN B.**, County Extension Coordinator, 2005. BA, MED, West Alabama  
**AKINS, LEIGH T.**, Regional Extension Agent, 2009. BS, Alabama; MSCE, West Alabama  
**YATES, RUDY P.**, Regional Extension Agent, 1994. BS, MS Auburn

**MARION COUNTY – HAMILTON**

**MURPHY, LISA**, County Extension Coordinator, 1981. BS, N. Alabama; MS, Mississippi St

**MARSHALL COUNTY – GUNTERSVILLE**

**HOWARD, CHARLES**, County Extension Coordinator, 1979. BS, Auburn; MS, Mississippi St  
**CHRISTIAN, JUANA T.**, Urban Regional Extension Agent, 2002. BS, MS, Alabama A&M  
**WHEELER, EDDIE J.**, Urban Regional Extension Agent, 1978. BS, MS, Alabama A&M

**MOBILE COUNTY – MOBILE**

**DAUGHERTY, THOMAS H.**, Regional Extension Agent, 1999. BS, South Alabama  
**HARTSELLE, JANE T.**, Regional Extension Agent, 1992. BS, Auburn; MS, South Alabama  
**HEUBACH, DENISE H.**, Urban Regional Extension Agent, 2011. BS, Montevallo  
**MCGREW, AMELIA J.**, Regional Extension Agent, 2005. BS, Alabama A&M  
**MILES, JAMES D.**, Regional Extension Agent, 1999. BS, Alabama A&M  
**OUTLAW, AMANDA C.**, Urban Regional Extension Agent, 1999. BS, Birmingham Southern  
**PHILLIPS, J. ELIZABETH**, Urban Regional Extension Agent, 1999. BS, Lander; MS, South Carolina  
**TODD, JIMMY G.**, County Extension Coordinator, 1992. BS, Auburn; MS, LSU

**MONROE COUNTY – MONROEVILLE**

**MCQUEEN, GERALD J.**, Regional Extension Agent, 2004. BS, MS, Auburn  
**WIGGINS, ANTHONY G.**, Regional Extension Agent, 2000. BS, MS, Auburn  
**WILLIAMS, WILLIE**, County Extension Coordinator, 1993. BS, Miles; MS, Alabama A&M

**MONTGOMERY COUNTY – MONTGOMERY**

**ANDRESS, SHANNON S.**, Regional Extension Agent, 1998. BS, MSED, Auburn  
**AUSTIN, METARA T.**, Urban Regional Extension Agent, 2008. BS, Tuskegee  
**HENSON, BRENDA**, County Extension Agent, 2009. BA, Trenholm Tech College; BS, Auburn-Montgomery  
**HERNDON-JONES, HELEN**, Regional Extension Agent, 1989. BS, MS, Tuskegee  
**SMITHERMAN, JIMMY D.**, County Extension Coordinator, 1978. BS, MS, Auburn  
**ROBINSON, ROOSEVELT L.**, Urban Regional Extension Agent, 2005. BS, Alabama St; MS, Troy St  
**RUDOLPH, DANIELLE**, Urban Regional Extension Agent, 2008. BS, Alabama A&M; MS, Murray State

**MORGAN COUNTY – HARTSELLE**

**BRITNELL, RONALD W.**, County Extension Coordinator, 1976. BS, Auburn; MS, Alabama A&M  
**GAMBLE, KENNETH W.**, Regional Extension Agent, 1990. BS, MS, Alabama A&M  
**GARNER, MARCUS L.**, Urban Regional Extension Agent, 2007. BS, Alabama A&M  
**REEVES, MICHAEL D.**, Regional Extension Agent, 2001. BS, Auburn; MS, Alabama A&M  
**HEARD, A. RENEE**, Urban Regional Extension Agent, 2008. BS, MS, Alabama A&M

**PERRY COUNTY – MARION**

**EASLEY, KATRINA**, County Extension Coordinator, 2001. BS, Concordia; MS, Auburn

**PICKENS COUNTY – CARROLLTON**

**GLEN, TERA K.**, Regional Extension Agent, 2007. BS, Alabama  
**PARKS, LOVIE BURRELL.**, Regional Extension Agent, 2000. BS, MA, Stillman  
**WIGGINS, SAM**, County Extension Coordinator, 1983. BS, Auburn; MS, Troy St

**PIKE COUNTY – TROY**

**GOLDEN, WILBERT J.**, Regional Extension Agent, 2004. BS, Central Texas; MBA, Maryland  
**KELLY, NEIL**, Interim County Extension Coordinator, 2008. BS, Auburn

**RANDOLPH COUNTY – WEDOWEE**

**HARDIN, CHRISTINE B.**, County Extension Coordinator, 1978. BS, N. Alabama; MEd, Auburn

**RUSSELL COUNTY – PHENIX CITY**

**THEODORE GILBERT, COUNTY EXTENSION COORDINATOR**, 2005. BS, EdS, Tuskegee; MEd, Alabama A&M; MEd, Georgia St  
**JANET A. JOHNSON, REGIONAL EXTENSION AGENT**, 2004. BS, MS, Auburn  
**PERKINS, KELVIN L.**, Regional Extension Agent, 2000. BS, MS, Alabama A&M

**SHELBY COUNTY – COLUMBIANA**

**COLQUITT, RICKY**, County Extension Coordinator, 2002. BS, Auburn; MS, Troy St  
**TATUM, JACK B.**, Regional Extension Agent, 1979. BS, Auburn; MS, Montevallo  
**TREADAWAY, ANGELA S.**, Regional Extension Agent, 1985. BS, MAT, Montevallo  
**WYNN, NELSON D.**, Regional Extension Agent, 1993. BS, MS, Alabama A&M

**ST. CLAIR COUNTY – PELL CITY**

**CLARK, LEE ANN**, County Extension Coordinator, 1999. BS, MS, Montevallo  
**DOROUGH, HENRY**, Regional Extension Agent, 1989. BS, MS, Auburn  
**WILLIAMS, SYNITHIA L.**, Regional Extension Agent, 2002. BS, MS, Auburn

**SUMTER COUNTY – LIVINGSTON**

**LAMPLEY, WILLIE H.**, County Extension Coordinator, 1986. BS, Tuskegee; MEd, Alabama A&M  
**PERRY, JONATHAN DAVID**, Regional Extension Agent, 2007. BS, Mississippi St.; MS, Auburn

**TALLADEGA COUNTY – TALLADEGA**

**HAYNES, SHARON A.**, Regional Extension Agent, 2007. BS, Alcorn St; MS, Mississippi St  
**JURRIAANS, WANDA P.**, County Extension Coordinator, 1965. BS, Jacksonville St; MA, Auburn

**TALLAPOOSA COUNTY – DADEVILLE**

**HARRIS, ANTHONY S.**, Interim County Extension Coordinator, 2002. BS, MS, Auburn

**TUSCALOOSA COUNTY – TUSCALOOSA**

**BELL, BROOKE**, County Extension Agent, 2008. BS, Alabama  
**JONES, PATRICIA A.**, Urban Regional Extension Agent, 2008. BS, Alabama A&M; MS, Alabama  
**CHAPMAN, LAUREN**, Regional Extension Agent, 2011. BS, Auburn-Montgomery  
**HARGLE, PHILLIP**, County Extension Agent, 2010. BS, Mississippi St.

**WALKER COUNTY – JASPER**

**CAIN, DANNY**, County Extension Coordinator, 1992. BS, MS, Auburn  
**PERSONS, REBECCA**, County Extension Agent, 2002. BA, South Carolina

**WASHINGTON COUNTY – CHATAM**

**ODOM, MARGARET B.**, Regional Extension Agent, 2002. BS, Auburn; MS Troy St  
**SMITH, TYRONE**, Urban Regional Extension Agent, 1994. BS, MS Alabama A&M

**WILCOX COUNTY – CAMDEN**

**STENZ, PAMELA C.**, County Extension Coordinator, 2006. BA, Alabama; MS, West Alabama  
**PADGETT, WENDY P.**, Regional Extension Agent, 2002. BS, West Alabama

**WINSTON COUNTY – DOUBLE SPRINGS**

**HENSHAW, MICHAEL D.**, County Extension Coordinator, 1983. BS, MS, Auburn  
**HILL, A. SUSAN**, Regional Extension Agent, 2004. BS, North Alabama



*Enrollment Statistics*

Software Engineering (SWEN).....	82	8	0	0	90				
Undeclared - Engineering (UNEN).....	3	1	0	0	4				
Wireless Engr. - Hardware option (WIRE).....	54	1	0	0	55				
Wireless Engr. - Software option (WIRS).....	28	2	0	0	30				
<b>TOTAL ENGINEERING.....</b>	<b>3,228</b>				<b>662</b>	<b>632</b>	<b>178</b>	<b>4,700</b>	

**COLLEGE OF FORESTRY AND WILDLIFE SCIENCES**

Economics PhD in Forestry (ECFY).....	0	0	5	5	10				
Forestry (FORB/FORG).....	55	2	35	12	104				
Natural Resources (FOWG).....	0	0	3	1	4				
Pre-Forestry (PFOR).....	54	5	0	0	59				
Transient (TRNS).....	0	2	0	0	2				
Undeclared - Forestry & Wildlife Sciences (UNFW).....	1	0	0	0	1				
Wildlife Ecology & Management (WLDE).....	46	16	0	0	62				
Wildlife Sciences (WLDB/WLDG).....	94	35	14	8	151				
<b>TOTAL FORESTRY &amp; WILDLIFE SCIENCES.....</b>	<b>250</b>	<b>60</b>			<b>57</b>	<b>26</b>	<b>393</b>		

**COLLEGE OF HUMAN SCIENCES**

Apparel - Merchandising option (APME).....	0	163	0	0	163				
Apparel - Prod. Design & Prod. Mngt. option (APDP).....	3	88	0	0	91				
Consumer Affairs (CAHS).....	0	0	1	11	12				
Hotel & Restaurant Management (HRMT).....	44	132	0	0	176				
Hum. Dev. & Fam. Studies - Early Child. Educ. (HDFE).....	0	29	0	0	29				
Human Development & Family Studies (HDFS).....	12	286	11	42	351				
Human Sciences (INDX).....	1	0	0	0	1				
Interior Design (INDS).....	3	108	0	0	111				
Nutrition & Food Science - Food Sci. option (NFFO).....	3	9	0	0	12				
Nutrition & Food Science - Nutr. Diet option (NFDI).....	18	151	0	0	169				
Nutrition & Food Science - Nutr. Sci. option (NFNS).....	6	59	0	0	65				
Nutrition & Food Science (NUFS).....	0	0	14	29	43				
Undeclared - Human Science (UNHS).....	2	0	0	0	2				
<b>TOTAL HUMAN SCIENCES.....</b>	<b>92</b>				<b>1,025</b>	<b>26</b>	<b>82</b>		

Enrollment Statistics

Enrollment by Alabama County — Fall 2010

County	Male	Female	Total	County	Male	Female	Total	County	Male	Female	Total
Autauga	149	99	248	Dallas	45	49	94	Marion	12	15	27
Baldwin	295	308	603	DeKalb	80	56	136	Marshall	145	108	253
Barbour	42	35	77	Elmore	136	136	272	Mobile	375	384	759
Bibb	7	4	11	Escambia	53	46	99	Monroe	35	50	85
Blount	32	34	66	Etowah	111	72	183	Montgomery	410	488	898
Bullock	15	18	33	Fayette	9	9	18	Morgan	173	147	320
Butler	25	30	55	Franklin	12	15	27	Perry	3	7	10
Calhoun	122	88	210	Geneva	33	26	59	Pickens	5	12	17
Chambers	87	78	165	Greene	4	2	6	Pike	24	52	76
Cherokee	28	19	47	Hale	11	9	20	Randolph	57	61	118
Chilton	39	33	72	Henry	26	33	59	Russell	66	82	148
Choctaw	7	8	15	Houston	224	172	396	Saint Clair	60	64	124
Clarke	28	24	52	Jackson	44	42	86	Shelby	568	572	1,140
Clay	36	29	65	Jefferson	1108	1062	2,170	Sumter	5	4	9
Cleburne	20	17	37	Lamar	5	8	13	Talladega	101	102	203
Coffee	71	63	134	Lauderdale	87	79	166	Tallapoosa	116	139	255
Colbert	44	30	74	Lawrence	20	18	38	Tuscaloosa	54	89	143
Conecuh	14	13	27	Lee	986	924	1,910	Walker	27	23	50
Coosa	19	18	37	Limestone	92	89	181	Washington	20	11	31
Covington	63	52	115	Lowndes	18	13	31	Wilcox	18	8	26
Crenshaw	20	15	35	Macon	32	43	75	Winston	9	7	16
Cullman	102	74	176	Madison	732	765	1,497	<b>Total</b>	<b>7,505</b>	<b>7,246</b>	<b>14,751</b>
Dale	67	52	119	Marengo	22	12	34				

Enrollment by State — Fall 2010

State	Male	Female	Total	State	Male	Female	Total	State	Male	Female	Total
Alabama	7,505	7,246	14,751	Massachusetts	26	21	47	Tennessee	412	369	781
Alaska	6	8	14	Michigan	28	43	71	Texas	286	314	600
Arizona	13	20	33	Minnesota	12	10	22	Utah	7	4	11
Arkansas	28	26	54	Mississippi	74	76	150	Vermont	3	3	6
California	83	87	170	Missouri	44	55	99	Virginia	161	166	327
Colorado	27	32	59	Montana	2	1	3	Washington	16	16	32
Connecticut	25	27	52	Nebraska	5	11	16	West Virginia	10	9	19
Delaware	6	6	12	Nevada	5	6	11	Wisconsin	22	13	35
District of Columbia	2	4	6	New Hampshire	10	8	18	Wyoming	3	4	7
Florida	621	734	1,355	New Jersey	51	36	87	<b>TOTAL (Other States)</b>	<b>4,599</b>	<b>4,641</b>	<b>9,240</b>
Georgia	1,695	1,604	3,299	New Mexico	9	8	17	<b>TOTAL (All States)</b>	<b>12,104</b>	<b>11,887</b>	<b>23,991</b>
Hawaii	7	3	10	New York	59	42	101				
Idaho	10	3	13	North Carolina	178	157	335	U.S. Territories and Possessions			
Illinois	90	93	183	North Dakota	2	1	3	Puerto Rico	3	4	7
Indiana	25	36	61	Ohio	69	67	136	Virgin Islands	3	3	6
Iowa	11	7	18	Oklahoma	10	21	31	<b>TOTAL</b>	<b>6</b>	<b>4</b>	<b>10</b>
Kansas	16	14	30	Oregon	6	2	8				
Kentucky	105	155	260	Pennsylvania	52	52	104	US Citizens Living Abroad	30	25	55
Louisiana	80	75	155	Rhode Island	9	4	13	<b>TOTAL</b>	<b>12,140</b>	<b>11,916</b>	<b>24,056</b>
Maine	3	7	10	South Carolina	109	108	217				
Maryland	65	72	137	South Dakota	1	1	2				

Enrollment by Foreign Country — Fall 2010

Country	Male	Female	Total	Country	Male	Female	Total	Country	Male	Female	Total
Argentina	1	2	3	Guyana	2	2	4	Paraguay	1	1	2
Australia	1	1	2	Hong Kong	1	1	2	Peru	1	1	2
Austria	1	1	2	Hungary	184	52	236	Philippines	1	1	2
Bahamas	2	6	8	India	2	1	3	Poland	2	2	4
Bangladesh	16	8	24	Indonesia	8	2	10	Romania	1	1	2
Belgium	1	1	2	Iran	1	1	2	Russia	2	2	4
Belize	1	1	2	Iraq	1	1	2	Saudi Arabia	4	4	8
Bosnia-Herzegovina	1	1	2	Israel	1	1	2	Serbia	1	1	2
Brazil	7	2	9	Italy	1	2	3	Singapore	1	1	2
Bulgaria	3	3	6	Jamaica	5	1	6	South Africa	1	1	2
Burkina Faso	1	1	2	Japan	3	3	6	South Korea (Rep. of Korea)	42	16	58
Cameroon	3	5	8	Jordan	7	7	14	Spain	1	4	5
Canada	7	7	14	Kenya	1	1	2	Sri Lanka	7	4	11
Chile	1	1	2	Kuwait	1	1	2	Sweden	1	1	2
China	206	168	374	Lebanon	2	2	4	Syria	1	1	2
Colombia	4	2	6	Libya	1	1	2	Taiwan	11	6	17
Congo (Republic of Congo)	3	2	5	Macau	1	1	2	Thailand	3	7	10
Costa Rica	1	1	2	Macedonia	1	1	2	Trinidad and Tobago	1	2	3
Cote d'Ivoire (Ivory Coast)	1	1	2	Malaysia	1	1	2	Turkey	29	11	40
Czech Republic	4	3	7	Mauritius	4	1	5	United Kingdom	7	4	11
Egypt	3	3	6	Mexico	1	1	2	Uruguay	1	1	2
Ethiopia	1	1	2	Morocco	15	1	16	Venezuela	1	2	3
France	5	3	8	Nepal	1	1	2	Vietnam	5	2	7
Germany	5	5	10	Netherlands	5	1	6	Zambia	2	2	4
Ghana	1	1	2	New Zealand	1	1	2	Zimbabwe	1	2	3
Great Britain/N Ireland	3	3	6	Niger	7	7	14	Unknown	2	1	3
Greece	1	1	2	Nigeria	1	1	2	<b>TOTAL</b>	<b>655</b>	<b>367</b>	<b>1022</b>
Guatemala	1	1	2	Panama	1	1	2				



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