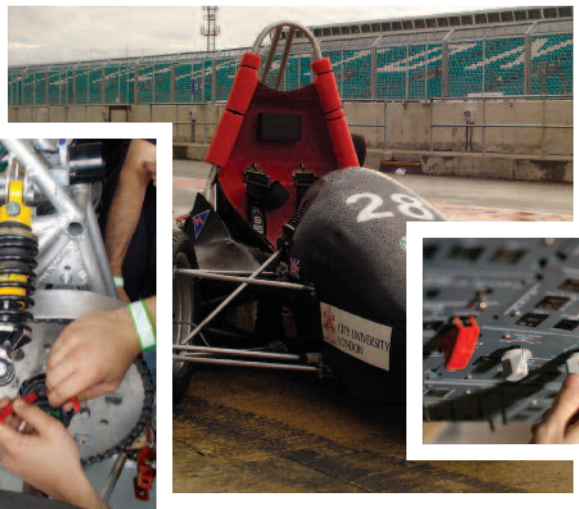
CITY UNIVERSITY LONDON

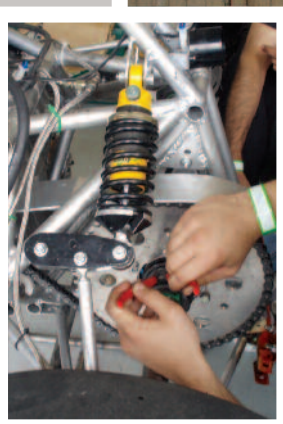
Academic excellence for business and the professions

SCHOOL OF ENGINEERING AND MATHEMATICAL SCIENCES

Mechanical and Aeronautical Engineering

UNDERGRADUATE COURSES





Courses

SCHOOL OF ENGINEERING AND MATHEMATICAL SCIENCES

AERONAUTICAL AND AIR TRANSPORT

MEng/BEng
Aeronautical Engineering

MEng/BEng
Air Transport Engineering

MECHANICAL, ENERGY AND AUTOMOTIVE

MEng/BEng
Automotive and Motorsport Engineering

MEng/BEng
Energy Engineering

MEng/BEng
Mechanical Engineering

BIOMEDICAL ENGINEERING
BEng Biomedical Engineering

CIVIL ENGINEERING
MEng/BEng Civil Engineering

MEng/BEng Civil Engineering with Architecture

MEng/BEng Civil Engineering with Surveying

ELECTRICAL AND ELECTRONIC ENGINEERING
BEng Computer Systems Engineering

MEng/BEng Electrical and Electronic Engineering

BEng Telecommunications

ENGINEERING WITH MANAGEMENT AND ENTREPRENEURSHIP
BEng Engineering with Management and Entrepreneurship

MATHEMATICS
BSc/MMath
Mathematical Science

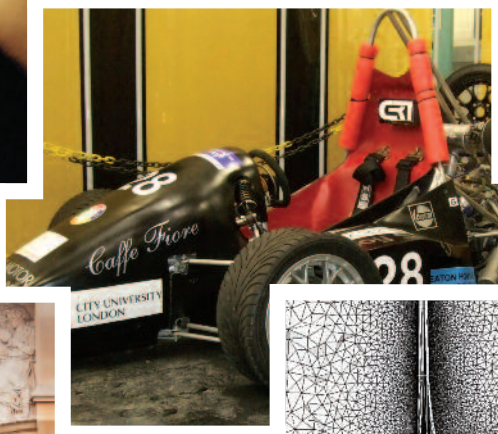
BSc/MMath Mathematical Science with Computer Science

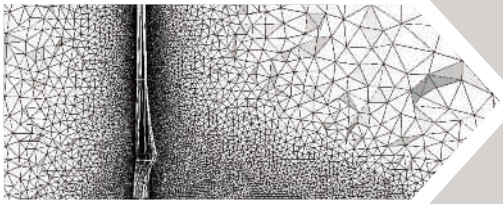
BSc/MMath Mathematical Science with Finance and Economics

BSc/MMath Mathematical Science with Statistics

BSc/MMath
Mathematics and Finance

Contents





Rewarding excellence

The Lord Mayor of London Scholarships

City University London is offering Scholarships of up to £3,000 per year to UK and EU undergraduate students achieving AAB or above at A-level or equivalent qualifications.

Please refer to page 26 for more information.

CONTENTS

Welcome to the School of Engineering and Mathematical Sciences

Engineering has been a driver of the progress of mankind for centuries, offering unprecedented benefits to our society in areas such as communications, transport, energy, health and security.

Engineering allows for discovery and innovation in science and medicine to be developed into practical applications that affect all of us and it has created the means to unlock the world's natural resources, from which we all benefit.

Engineering is an engine of wealth creation – allowing business and enterprise to turn research and the innovative ideas that spring from it into jobs and profitability.

It is not surprising that the engineering sector makes up nearly a fifth of the UK economy, employing over 4.5 million people playing a vital role in rebalancing the economy – and many millions more worldwide.

At its heart, engineering is truly international in its scope, its impact and in the people who undertake it – engineering developments shared across the interconnected and intertwined world we live in are at the forefront of saving lives and making people's lives better, contributing enormously to making our modern world what it is. Fundamentally, engineering is about the high-level strategic thinking that underpins innovation in technology – but yet engineers have a real sensitivity to how every project they are involved with impacts on people and our environment.

I am delighted that you are considering studying engineering to become involved in one of the most dynamic, exciting, international and indeed people-focused professions today. A degree in engineering from City University London will equip you for that role and to be a driver of future change in this century and allow you to make your mark on a rapidly changing world. That builds on our long and distinguished tradition, stretching back for nearly 120 years, of training the best engineers at City University London to change the world – we are immensely proud of the way that our graduates have been at the forefront of industry and academia in the UK and worldwide over that time.

Engineers trained at City University London – whatever their first degree discipline – inhabit the real world which throws up a breadth of engineering challenges and which arise from the combination of the disciplines we often simply label as civil, electrical, aeronautical or mechanical engineering. Building a broad understanding and seeking technical mastery of the field is essential for engineers to make their mark on the world. Most especially, a training in engineering is a path to be a leader in tomorrow's complex world – a leader in technical expertise, a leader in strategic thinking, a leader in innovation and a leader in communication. Our role at City University London is to develop and instill those skills in our graduates and fit them for that opportunity.

I challenge you to come on the journey that will take you to become a leader in a field that will change the world in the twenty first century – through equipping yourself with the breadth of skills you will need and that a City University London degree in engineering will give you. I challenge you to make the most of the opportunities that this can offer and to recognise the crucial and transformative role that being an engineer can make to your life.

I look forward to welcoming you as an engineering student of the School of Engineering and Mathematical Sciences at City University London.

Professor
Kenneth Grattan FREng
Dean of the School of Engineering and Mathematical Sciences

Why study at City? About the School of Engineering and Mathematical Sciences

City University London is different. We provide exceptional graduate employment prospects as a result of our commitment to academic excellence, focus on business and the professions and the benefits of our central London location.

TRADITION AND HERITAGE
Engineering and mathematical sciences have been taught at City for over 100 years. We are the pioneers of aeronautics and received the first-ever grant to build an aeroplane.

CENTRAL LONDON LOCATION
We are located in the heart of London, close to the capital's leading institutions. Many of the most renowned engineering companies are located within two miles of the University. Both professionally and personally, you will have the opportunity to benefit from all that London has to offer.

For more information please visit **www.city.ac.uk/visit**

PROFESSIONAL ACCREDITATION
Most of our courses are accredited by professional bodies.

EXCEPTIONAL EMPLOYMENT PROSPECTS
We are ranked 10th in the UK for both graduate employability *(The Times Good University Guide 2011)* and graduate starting salaries *(The Sunday Times University Guide 2011)*.

INDUSTRY LINKS
The School has professional links with industries across the globe.

ACADEMIC EXCELLENCE AND RESEARCH
Our staff and students are actively involved in pioneering research. In the Government's latest Research Assessment Exercise (RAE), our research in fifteen subject areas was rated by expert panels as amongst the best in the world.

Find out more at **www.city.ac.uk/engineering-maths/research**

INTERDISCIPLINARY
The School strongly promotes the interdisciplinary approach to engineering and mathematics. It reflects the requirements of industry and the job market today, in its undergraduate teaching, in the breadth of its postgraduate programmes and especially in its research which recognises that much innovation and excitement lies at the interfaces of traditional disciplines.

EXCELLENT FACILITIES
The School of Engineering and Mathematical Sciences' extensive laboratories enable our students to put theory into practice. Our facilities include flight simulators, wind tunnels, structural testing equipment, an electronics lab, a dedicated Formula Student workshop and a centrifuge that creates forces of up to 200 times gravity.

EXCELLENT BURSARY/SCHOLARSHIP PROVISIONS
We offer a range of merit-based scholarships, bursaries and awards for students who demonstrate exceptional potential. They not only recognise outstanding ability but enable students experiencing financial hardship to study at City. Our scholarships are made possible thanks to companies such as Caterpillar Ltd.

For more information go to **www.city.ac.uk/engineering-maths/scholarships**

REWARDING EXCELLENCE
City University London is offering Scholarships of up to £3,000 per year to UK and EU undergraduate students achieving AAB or above at A-level.

Please refer to **page 26** for more information.

Discover Mechanical and Aeronautical Engineering at City

Mechanical Engineers design, construct, manage and improve the active infrastructure of society and are deeply involved in the generation, supply and efficient transmission of energy as well as in the development of the transport infrastructure which underpins both commerce and the provision of services to modern communities.

Aeronautical Engineers specialise in the fascinating air transport sector, integrating a wide variety of engineering and business disciplines to deliver and sustain some of the highest-value products in the world. Both the mechanical and aeronautical sectors are global enterprises, with City graduates working all over the world and with people from all cultures.

Professional Accreditations

Engineering Council accredited degree

Institution of MECHANICAL ENGINEERS

ROYAL AERONAUTICAL SOCIETY

For specific accreditation details, see relevant course pages.

City University London has been delivering well-qualified and motivated graduates into the mechanical and aeronautical sectors for over 100 years. Our courses, reviewed and re-structured in 2010 and gaining commendations from the Institution of Mechanical Engineers and the Royal Aeronautical Society, achieve a balance between theory and practice to give our graduates the best preparation for their careers.

The strengths of both Mechanical and Aeronautical Engineering at City, and the more specialised Air Transport, Automotive and Energy Engineering courses, are our excellent laboratory and workshop facilities, used for both teaching and research, our teaching staff (page 22) who have either spent many years working in industry or who are closely connected with industry, and our commitment to a solid grounding in engineering design.

We are committed to offering both relevant practical work and significant amounts of staff contact in smaller groups, thereby maximising the investment in your future. All these features combine to produce students who deliver value to their employers, both on placement and following graduation.

City offers the following degree courses at both MEng and BEng, all accredited towards your achieving Chartered Engineer status (BEng courses will require additional learning such as an MSc):

- **AERONAUTICAL ENGINEERING** for those interested in design and manufacture of aircraft
- **AIR TRANSPORT ENGINEERING** for those looking for a career in aviation operations
- **AUTOMOTIVE AND MOTORSPORT ENGINEERING** for those wishing to specialise in road vehicles
- **ENERGY ENGINEERING** for those interested in energy generation and management
- **MECHANICAL ENGINEERING** a broad-based course covering a range of disciplines

MEng, BEng Aeronautical Engineering

Aeronautical Engineering prepares you for an exciting and rewarding career requiring technical expertise, initiative and management skills. This course is designed for students who have a fascination with and enjoy the prospect of being involved in aerospace technology.

Engineering Council accredited degree

Institution of MECHANICAL ENGINEERS

ROYAL AERONAUTICAL SOCIETY

Arthy Ravichandran
Graduated in 2011 with a MEng in Aeronautical Engineering

"The subject lecturers are supported by visiting lecturers from industry who are specialists in their application area. Lab sessions are very 'hands-on', and we were involved in group interactions through projects since the very first year at university.

As an international student, I felt very welcome from day one. On top of the lectures, I was given the opportunity to promote the University and the School by becoming one of the student ambassadors. Being a student ambassador and the jobs I took made way for me to become runner up in British Council Student of the year Award.

I did a summer placement with Dubai Airport and I currently work at the Research and Development centre with GKN Aerospace. The career centre at City helped me get my graduate placement by doing CV checks and conducting mock interviews.

I am proud to say that I am a City graduate!"

YEAR ONE

Year one provides a broad foundation in engineering concepts with a slant towards practical applications.

Core modules:

- Basic engineering science
- Design
- Engineering laboratory
- Manufacturing methods
- Mathematics and computing.

YEAR TWO

The second year puts increasing emphasis on aviation-related skills such as aircraft design.

Core modules:

- Aeronautical design, including applied aerodynamics and aircraft structures
- Engineering management
- Mathematics, statistics and computing
- Structures, materials, fluid dynamics, mechatronics and thermodynamics, all with engineering application.

You will also take a course in flight testing. Industrial lectures, given by experts from the aerospace industry, are part of aeronautical design teaching.

YEAR THREE

The course becomes more specialised with a choice of subjects. As well as the group design project mentored by industry experts, the individual project allows you to investigate a subject of particular interest. BEng students with good grades at the end of the third year may transfer to the MEng programme.

Options from:

- Aerodynamics
- Aircraft structures
- Computational fluid dynamics
- Flight dynamics
- Gas turbine engineering
- System reliability and safety.

YEAR FOUR (MEng only)

Year four provides a multidisciplinary view of engineering design and creativity and innovation in problem solving. You also have the opportunity to select a greater number of specialised subjects at Masters level as well as a foreign language module.

PROFESSIONAL ACCREDITATION

The course is accredited by the Royal Aeronautical Society, the Institution of Mechanical Engineers and the Engineering Council.

CAREER PROSPECTS

Aeronautical Engineering graduates work in all areas of the aircraft and airline industries. They also work in other high-tech industries such as motor manufacturing and offshore oil and gas extraction. Careers in Aeronautical Engineering in the UK are provided not only by the larger companies such as Airbus, BAE Systems, Rolls Royce, AgustaWestland Helicopters and QinetiQ, but also by many successful small companies that supply components and services. A number of graduates move on to a career in flying.

PLACEMENT YEAR (OPTIONAL)

Students may choose to complete an industrial placement year after the second or third academic year. Placement students gain a greater understanding of the Aeronautical Engineering profession and this may also count towards the experience requirement for a professional engineering qualification. Recent successful placements have included IHS ESDU, AgustaWestland and British Airways Engineering.

THE LORD MAYOR OF LONDON SCHOLARSHIPS

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For further information on all University Scholarships please visit **www.city.ac.uk/engineering-maths/scholarships**

DURATION

BEng, full-time: Three years or four years including a professional placement.
MEng, full-time: Four years or five years including a professional placement.

Dr Doug Greenwell
Reader in Flight Dynamics

Dr Greenwell is an aeronautical engineer and pilot with extensive industrial experience in low-speed aerodynamics and in aircraft flight dynamics. His current research projects include the design of a wind power plant using large kites and an investigation of the dynamics of winch launching for gliders.

Dr Greenwell is Programme Director for Aeronautical Engineering and lectures on Aircraft Design, Aircraft Performance and Flight Dynamics. He also runs the Flight Test course.

MEng, BEng Aeronautical Engineering

ENTRY REQUIREMENTS 2012/13

Typical offers require one of the following:

MEng:
A/AS-level:
360 UCAS tariff points, including A-level mathematics at grade A. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 32, including a minimum of 6 in mathematics at Higher Level

14-19 Advanced Diploma:
Engineering at grade A/300; Acceptable only with A-Level mathematics at grade A.

BEng:
A/AS-level:
340 UCAS tariff points, including A-level mathematics at grade B. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 30, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade B/250; Acceptable only with A-Level mathematics at grade B.

English language requirements:

- IELTS: 6.0 with a minimum of 6.0 in the writing sub-test
- TOEFL: 87 internet-based total
- GCSE: English language grade C.

UCAS CODE

H410 BEng, H401 BEng with professional placement, H403 MEng, H405 MEng with professional placement.

Email enquiries: **semsug@city.ac.uk**

Phone enquiries: **+44 (0) 20 7040 6050**

Find out more at: **www.city.ac.uk/engineering-maths/undergraduate**

NEXT STEPS

Open Days:
Visit www.city.ac.uk/engineering-maths/undergraduate/opendays

How to apply:
Refer to information on page 28.

MEng, BEng
Air Transport Engineering

Air Transport Engineering is tailored to those looking for a career in operations, the largest employment market in the industry. The course is equally applicable to prospective pilots and engineers as the industry increasingly demands better understanding by new staff of aircraft technical aspects.

Engineering Council accredited degree

ROYAL AERONAUTICAL SOCIETY

Adwitee Chandra
Graduated in 2010 with a 1st class (Hons) degree in BEng Air Transport Engineering

"City University London provides a balanced academic environment coupled with high-quality teaching standards. I chose this course as I have always had a passion for the airline industry. The course itself is pretty vast and requires you to put in sincere efforts and hard work throughout your study at City if you've got the drive to become a potential air transport engineer. The University also rewards academic excellence financially in terms of scholarships and prizes. I have been awarded these for two consecutive years!

I have gained knowledge and understanding about the air transport industry from the varied modules the course offers. The final year design and individual project counts a lot in terms of gaining engineering knowledge and expertise, along with boosting up your grades!"

Graduates work in all areas of the air transport industry, focused on operations and engineering, including airlines, maintenance organisations and airports. Areas covered include global air transport strategy, the design of aircraft and systems to meet diverse operating requirements, flight safety, reliability, maintenance, the environment, regulation, airline planning and economic performance.

YEAR ONE

Year one provides a broad foundation in engineering concepts with a slant towards practical applications.

Core modules:

- Basic engineering science
- Design
- Engineering laboratory
- Manufacturing methods
- Mathematics and computing.

YEAR TWO

The second year puts increasing emphasis on aviation-related skills such as aircraft design.

Core modules:

- Aeronautical design, including applied aerodynamics and aircraft structures
- Engineering management
- Mathematics, statistics and computing
- Structures, materials, fluid dynamics, mechatronics and thermodynamics, all with engineering application.

You will also take a course in flight testing. Industrial lectures, given by experts from the aerospace industry, are part of aeronautical design teaching.

YEAR THREE

The course becomes more specialised with a choice of subjects. As well as the group design project mentored by industry experts, the individual project allows you to investigate and develop, in-depth, a subject of particular interest. BEng students with good grades at the end of the third year may transfer to the MEng programme.

Core modules:

- Air transport operations – how the airline industry functions
- Airworthiness and maintenance – ensuring modern aircraft can be efficiently and safely operated
- Avionics and control – key technology in advanced airlines
- System reliability and safety – designing aircraft that are safe to operate.

PROFESSIONAL ACCREDITATION

This course is accredited by the Royal Aeronautical Society and the Engineering Council.

CAREER OPTIONS

Graduates can expect to progress to careers in the operational side of the air transport industry, including: licensed engineer, flight crew, maintenance planning, air traffic control, flight operations and ground handling. The City degree prepares graduates to develop into managers of airline and MRO (Maintenance, Repair and Overhaul) businesses.

YEAR FOUR (MEng only)

Year four provides a multidisciplinary view of engineering design and creativity and innovation in problem solving. You also have the opportunity to select a number of specialised subjects at Masters level as well as a foreign language module.

PLACEMENT YEAR (OPTIONAL)

A year on an industrial placement – a sandwich year – may be available. Placement students gain greater understanding of the air transport industry and this may also count towards the experience requirement for a professional engineering qualification. Recent placement opportunities have included Airbus in Toulouse and Virgin Atlantic Airways.

THE LORD MAYOR OF LONDON SCHOLARSHIPS

City University London is offering Scholarships of up to £3,000 per year to UK and EU undergraduate students achieving AAB or above at A-level. Please refer to page 26 for more information.

For further information on all University Scholarships please visit **www.city.ac.uk/engineering-maths/scholarships**

DURATION

BEng, full-time: Three years or four years including a professional placement.
MEng, full-time: Four years or five years including a professional placement.

Dr Steve Bond
Senior Lecturer

Dr Bond has worked in the aviation industry for nearly 40 years. He served in the Royal Air Force for 22 years as an Aircraft Propulsion Technician, concluding his service career as a member of the Eurofighter Typhoon development team. He then spent 6 years with TRW Aeronautical Systems as Integrated Logistic Support Manager, looking after aircraft from Airbus, BAE Systems, Boeing and Westland. He joined City in 2001 and is Programme Director for the BEng/MEng Air Transport Engineering and MSc Air Safety Management.

MEng, BEng Air Transport Engineering

ENTRY REQUIREMENTS 2012/13

Typical offers require one of the following:

MEng:
A/AS-level:
360 UCAS tariff points,including A-level mathematics at grade A. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 32, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade A/300; Acceptable only with A-level mathematics at grade A.

BEng:
A/AS-level:
340 UCAS tariff points, including A-level mathematics at grade B. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 30, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade B/250; Acceptable only with A-level mathematics at grade B.

English language requirements:

- IELTS: 6.0 with a minimum of 6.0 in the writing sub-test
- TOEFL: 87 internet-based total
- GCSE: English language grade C.

UCAS CODE
H424 MEng, H423 MEng with professional placement, H422 BEng, H400 BEng with professional placement.

Email enquiries: **semsug@city.ac.uk**

Phone enquiries: **+44 (0) 20 7040 6050**

Find out more at: **www.city.ac.uk/engineering-maths/undergraduate**

NEXT STEPS

Open Days:
Visit www.city.ac.uk/engineering-maths/undergraduate/opendays

How to apply:
Refer to information on page 28.

MEng, BEng Automotive and Motorsport Engineering

This course is designed for students who have an interest in the automotive, fuel and transport industries and/or motorsport. Automotive and Motorsport Engineering at City prepares you for exciting and rewarding careers requiring technical expertise, initiative and management skills.

Engineering Council accredited degree

Institution of MECHANICAL ENGINEERS

Scott Mackenzie
Formula Student Team Leader

"City offers some fantastic opportunities alongside the excitement of living in the capital city. One of these is Formula Student, which is an amazing project in which the students get to design, build and race their own single-seat racing car. This project has played a vital role in my development because it has taught me invaluable technical and practical skills.

I have also had the privilege of leading the City Racing team and this has greatly improved my communication and business skills which are highly sought after in industry. Importantly the course has a good balance between theoretical and practical work with the later encouraged by staff. City has priceless links with professional engineering companies such as Caterpillar who offer prestigious scholarship awards to the students. I feel confident and well prepared to become a top professional engineer working in the automotive industry."

The course is closely associated with the international Institution of Mechanical Engineers Formula Student competition.

YEAR ONE

Year one provides a broad foundation in engineering concepts with a slant towards practical applications.

Core modules:

- Basic engineering science
- Design
- Engineering laboratory
- Manufacturing methods
- Mathematics and computing.

YEAR TWO

The second year puts increasing emphasis on application to complex mechanical systems.

Core modules:

- Engineering management
- Mathematics, statistics and computing
- Mechanical and vehicle design, culminating in a team-based mechanical design and build competition
- Structures, materials, fluid dynamics, mechatronics and thermodynamics, all with engineering application.

YEAR THREE

The course becomes more specialised in year three, with detailed focus on automotive disciplines. As well as group design projects, the individual project allows you to investigate a subject of particular interest. As part of the Formula Student competition, you will have the opportunity to join the City Racing team in designing, building, marketing and racing a single-seater racing car at Silverstone. BEng students with good grades at the end of the third year may transfer to the MEng programme.

Core modules:

- Chassis engineering
- Internal combustion engines and vehicle powertrain
- Vehicle dynamics
- Vehicle control system design.

YEAR FOUR (MEng only)

Year four provides a multidisciplinary view of engineering design and creativity and innovation in problem solving. You also have the opportunity to select a number of specialised subjects at Masters level as well as a foreign language module.

PROFESSIONAL ACCREDITATION

The course is accredited by the Institution of Mechanical Engineers and the Engineering Council, and provides the path for graduates to gain chartered status.

CAREER OPTIONS

Automotive and Motorsport Engineering graduates work predominantly in the automotive industry. They are typically involved in automotive component research, product and process design and manufacturing, with a growing emphasis on engineering sustainability.

PLACEMENT YEAR (OPTIONAL)

You may choose to complete an industrial placement year after the second or third academic year. Placement students gain a greater understanding of the automotive engineering profession and this may also count towards the experience requirement for a professional engineering qualification. Recent successful placements have included Ford, Jaguar Cars, Toyota, Shell and BP.

THE LORD MAYOR OF LONDON SCHOLARSHIPS

City University London is offering Scholarships of up to £3,000 per year to UK and EU undergraduate students achieving AAB or above at A-level. Please refer to page 26 for more information.

For further information on all University Scholarships please visit **www.city.ac.uk/engineering-maths/scholarships**

DURATION

BEng, full-time: Three years or four years including a professional placement.
MEng, full-time: Four years or five years including a professional placement.

Professor Keith Pullen
Professor of Energy Systems

Professor Pullen develops small scale, low carbon energy technologies, undertaking key underpinning research which has led to 27 patents. Fields can be as diverse as energy recovery for F1 motorsport to low cost power for rural areas of the developing world. The research encompasses electrical and turbomachinery with shaft speeds sometimes above 100,000 rpm. Professor Pullen is Programme Director for the Mechanical and Automotive MScs and leads City's entry to Formula Student including development of the world's first flywheel hybrid entry.

BEng, MEng Automotive and Motorsport Engineering

ENTRY REQUIREMENTS 2012/13

Typical offers require one of the following:

MEng:
A/AS-level:
360 UCAS tariff points, including A-level mathematics at grade A. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 32, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade A/300; Acceptable only with A-level mathematics at grade A.

BEng:
A/AS-level:
340 UCAS tariff points, including A-level mathematics at grade B. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 30, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade B/250; Acceptable only with A-level mathematics at grade B.

English language requirements:

- IELTS: 6.0 with a minimum of 6.0 in the writing sub-test
- TOEFL: 87 internet-based total
- GCSE: English language grade C.

UCAS CODE

H330 MEng, H334 MEng with professional placement, H331 BEng, H335 BEng with professional placement.

Email enquiries: **semsug@city.ac.uk**

Phone enquiries: **+44 (0) 20 7040 6050**

Find out more at: **www.city.ac.uk/engineering-maths/undergraduate**

NEXT STEPS

Open Days:
Visit www.city.ac.uk/engineering-maths/undergraduate/opendays

How to apply:
Refer to information on page 28.

MEng, BEng
Energy Engineering

This course is designed for students who have an interest in energy and power production and management. Energy Engineering at City prepares you for an exciting, fast-developing sector in which you will need technical expertise, initiative and management skills.

Engineering Council accredited degree

Institution of MECHANICAL ENGINEERS

Juan Martinez
Graduated in 2008 with a 1st class (Hons) degree in MEng Energy Engineering

"The growing international interest in different energy sources, and their impact on social, environmental, economic and political issues worldwide, has triggered important investments in research in the energy field. This emerging technical challenge, together with rising employment opportunities of an extraordinarily diverse nature, is the main reason that drove my interest towards energy engineering and the energy sector.

In addition, having reached the end of my education at City University London, I can say with great assurance that it has provided me with all the necessary tools and up-to-date engineering knowledge to allow me to develop a critical and creative engineering mind."

YEAR ONE

Year one provides a broad foundation in engineering concepts with a slant towards practical applications.

Core modules:

- Basic engineering science
- Design
- Engineering laboratory
- Manufacturing methods
- Mathematics and computing.

YEAR TWO

The second year puts increasing emphasis on application to complex mechanical systems.

Core modules:

- Engineering management
- Mathematics, statistics and computing
- Mechanical design, culminating in a team-based mechanical design and build competition
- Structures, materials, fluid dynamics, mechatronics and thermodynamics, all with engineering application.

YEAR THREE

The course becomes more specialised in year three, with detailed focus on energy disciplines. As well as group design projects, the individual project allows you to investigate a subject of particular interest. As part of the Formula Student competition, you will have the opportunity to join the City Racing team in designing, building, marketing and racing a single seater racing car at Silverstone. BEng students with good grades at the end of the third year may transfer to the MEng programme.

Core modules:

- Energy management
- Renewable energy
- System reliability
- Turbomachinery and heat transfer.

YEAR FOUR (MEng only)

Year four provides a multidisciplinary view of engineering design and creativity and innovation in problem solving. You also have the opportunity to select a greater number of specialised subjects at Masters level as well as a foreign language module.

MEng, BEng Energy Engineering

PROFESSIONAL ACCREDITATION

The course is accredited by the Institute of Mechanical Engineers and the Engineering Council, and provides the path for graduates to gain charter status.

CAREER OPTIONS

Energy Engineering graduates work in many industries, most obviously transport, power and fuel. They are involved in research, energy management, auditing, power plant design, maintenance, decommissioning, sustainability assessment, process design and management.

PLACEMENT YEAR (OPTIONAL)

You may choose to complete an industrial placement year after the second or third academic year. Placement students gain a greater understanding of the energy engineering profession and this may also count towards the experience requirement for a professional engineering qualification. Recent successful placements have included TOTAL Oil, National Grid and BP.

THE LORD MAYOR OF LONDON SCHOLARSHIPS

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For further information on all University Scholarships please visit **www.city.ac.uk/engineering-maths/scholarships**

DURATION

BEng, full-time: Three years or four years including a professional placement.
MEng, full-time: Four years or five years including a professional placement

Professor Manolis Gavaises
Delphi Chair in FIE Fluid Dynamics

Professor Gavaises specialises in the modelling of two-phase flows, cavitation and sprays. His work has been supported by leading industries, including Delphi Diesel Systems, Caterpillar and Toyota; he holds the Delphi Chair in FIE Fluid Dynamics. He has received the UniCEQ Richard Way Prize, the SAE Arch T. Collwell Merit Award and the best publication award from PE Publications. He is the director of the Energy & Transport Research Centre at City.

ENTRY REQUIREMENTS 2012/13

Typical offers require one of the following:

MEng:
A/AS-level:
360 UCAS tariff points, including A-level mathematics at grade A. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 32, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade A/300; Acceptable only with A-level mathematics at grade A.

BEng:
A/AS-level:
340 UCAS tariff points, including A-level mathematics at grade B. A-level physics desirable. Point scores exclude general studies and key skills.

IB: 30, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade B/250; Acceptable only with A-level mathematics at grade B.

English language requirements:

- IELTS: 6.0 with a minimum of 6.0 in the writing sub-test
- TOEFL: 87 internet-based total
- GCSE: English language grade C.

UCAS CODE

JH93 MEng, HJ39 BEng.

Email enquiries: **semsug@city.ac.uk**

Phone enquiries: **+44 (0) 20 7040 6050**

Find out more at: **www.city.ac.uk/engineering-maths/undergraduate**

NEXT STEPS

Open Days:
Visit www.city.ac.uk/engineering-maths/undergraduate/opendays

How to apply:
Refer to information on page 28.

MEng, BEng Mechanical Engineering

This course is designed for students who have an interest in transport, energy, materials, industrial design and/or manufacturing of industrial and commercial products. Mechanical Engineering at City prepares you for exciting and rewarding careers requiring technical expertise, initiative and management skills.

Engineering Council accredited degree

Institution of MECHANICAL ENGINEERS

Alyshah Willis
Year 3 MEng Mechanical Engineering, current student

"There are a number of reasons why I decided to study at City. It has a great Mechanical Engineering course and the engineering facilities are extensive. The University location was also a big positive as it is in central London and I always wanted to study in London. City also has a high employment rate for graduates, which is important to me as I want a good salary when I leave.

The course is fantastic. If I needed help or extra support I always got it from my personal tutor or the lecturers. Everyone on my course was really friendly. Over the last 2 years I have taken part in a number of group projects. This year I chose to do Formula Student and I'm thoroughly enjoying being involved in such a prestigious project. I have also learnt how to use software such as Matlab and CATIA, which will help me when I enter the professional world."

YEAR ONE

Year one provides a broad foundation in engineering concepts with a slant towards practical applications.

Core modules:

- Basic engineering science
- Design
- Engineering laboratory
- Manufacturing methods
- Mathematics and computing.

YEAR TWO

The second year puts increasing emphasis on application to complex mechanical systems.

Core modules:

- Engineering management
- Mathematics, statistics and computing
- Mechanical design, culminating in a team-based mechanical design and build competition
- Structures, materials, fluid dynamics, mechatronics and thermodynamics, all with engineering application.

YEAR THREE

As well as group design projects, a feature of year three is the individual project, allowing you to investigate a subject of particular interest. As part of the Formula Student competition, you will have the opportunity to join the City Racing team in designing, building, marketing and racing a single-seater racing car at Silverstone. BEng students with good grades at the end of the third year may transfer to the MEng programme.

Core modules:

- Mechanical structures
- Mechatronics
- System reliability
- Turbomachinery and heat transfer.

Plus options from the energy and automotive courses.

YEAR FOUR (MEng only)

Year four provides a multidisciplinary view of engineering design and creativity and innovation in problem solving. You have the opportunity to select a greater number of specialised subjects at Masters level as well as a foreign language module.

PROFESSIONAL ACCREDITATION

The course is accredited by the Institution of Mechanical Engineers and the Engineering Council, and provides the path for graduates to gain chartered status.

CAREER OPTIONS

Mechanical Engineering graduates work in industries such as transport, power, manufacturing, aerospace, automotive and fuel. They are involved in research, product and process design, manufacturing, maintenance, decommissioning, sustainability assessment and management.

PLACEMENT YEAR (OPTIONAL)

You may choose to complete an industrial placement year after the second or third academic year. Placement students gain a greater understanding of the mechanical engineering profession which may count towards the experience required for a professional engineering qualification. Recent placements have included Jaguar Cars, Tube Lines, and Rolls-Royce.

THE LORD MAYOR OF LONDON SCHOLARSHIPS

City University London is offering Scholarships of up to £3,000 per year to UK and EU undergraduate students achieving AAB or above at A-level. Please refer to page 26 for more information.

For further information on all University Scholarships please visit **www.city.ac.uk/engineering-maths/scholarships**

DURATION

BEng, full-time: Three years or four years including a professional placement.
MEng, full-time: Four years or five years including a professional placement.

Dr Jamshid Nouri
Reader in Mechanical Engineering

Dr Nouri is mainly involved in research on fluid mechanics, internal combustion engines, gasoline and diesel fuel spray processes, centrifugal pumps and turbo-chargers. His extensive research on fluid mechanics, combustion of internal engines and optical diagnostics has been noted by many journal publications and awards including the Arch T. Colwell Merit Award of the Society of Automotive Engineers. Dr Nouri is Assistant Dean for Mechanical Engineering and Aeronautics.

MEng, BEng Mechanical Engineering

ENTRY REQUIREMENTS 2012/13

Typical offers require one of the following:

MEng:
A/AS-level:
360 UCAS tariff points, including A-level mathematics at grade A. A-level physics desirable. Point scores exclude general studies and key skills.

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A/AS-level:
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IB: 30, including a minimum of 6 in mathematics at Higher Level.

14-19 Advanced Diploma:
Engineering at grade B/250; Acceptable only with A-level mathematics at grade B.

English language requirements:

- IELTS: 6.0 with a minimum of 6.0 in the writing sub-test
- TOEFL: 87 internet-based total
- GCSE: English language grade C.

UCAS CODE

H304 MEng, H305 MEng with professional placement. H300 BEng, H301 BEng with professional placement.

Email enquiries: **semsug@city.ac.uk**

Phone enquiries: **+44 (0) 20 7040 6050**

Find out more at: **www.city.ac.uk/engineering-maths/undergraduate**

NEXT STEPS

Open Days:
Visit www.city.ac.uk/engineering-maths/undergraduate/opendays

How to apply:
Refer to information on page 28.

Examples of modules and electives*

*From academic year 2011/12 and are subject to change.

PART 1

CORE

ME1109 ENGINEERING SCIENCE 1
Statics, Materials, Dynamics, Fluids, Thermodynamics, Electrical

ME1110 ENGINEERING PRACTICE 1
Engineering Laboratory, Drawing & Design, Manufacturing Methods, Personal Development

ME1111 MATHS & COMPUTATION 1

PART 2

MECHANICAL

ME2104 MECHANICAL ANALYSIS AND DESIGN

CORE

ME2109 ENGINEERING SCIENCE 2
Fluids 2, Structures, Materials 2, Mechatronics, Thermodynamics 2

ME2110 ENGINEERING PRACTICE 2
Engineering Laboratory, Engineering Management, Personal Development

ME2111 MATHS & COMPUTATION 2

AERONAUTICAL

AE2203 AERONAUTICAL ANALYSIS AND DESIGN

KEY

ANNUAL PROGRESSION

TEACHING

Methods include lectures, tutorials, group design, practical sessions and field trips. We combine analytical, experimental, group interactive teaching and learning techniques to encourage independent study, teamwork, communication, creativity and critical thinking. Courses are reviewed regularly to respond to the priority needs of the engineering market place, meeting the requirements of the Engineering Council. The courses are taught by staff from City, supported by relevant specialists as well as visiting staff from industry.

ASSESSMENT

Assessment is by means of coursework and examinations. Group learning, teamwork and communication skills are assessed through design group studies, reports as well as presentations. Practical and technical communication skills are assessed through laboratory work and data analysis together with project reports.

PART 3

AUTOMOTIVE

- ME3101 MECHATRONICS 3
- ME3113 COMPUTATIONAL STRUCTURES
- ME3151 INTERNAL COMBUSTION ENGINE
- ME3152 VEHICLE DYNAMICS

ENERGY

- ME3112 ENERGY MANAGEMENT
- ME3114 RENEWABLE ENERGY

COMMON MECH/ENERGY

- ME3107 HEAT TRANSFER AND TURBO
- ME3108 SYSTEMS RELIABILITY AND SUSTAINABLE ENGINEERING

MECHANICAL

- ME3101 MECHATRONICS 3 (ONE ELECTIVE MODULE FROM ELT2)

CORE

- ME3100 ENGINEERING PRACTICE 3 *Engineering Management, Group Project*
- AE3030 INDIVIDUAL PROJECT

AERONAUTICAL

- AE3214 DYNAMICS OF FLIGHT PLUS TWO FROM:
- AE3203 AERODYNAMICS
- AE3204 AIRCRAFT STRUCTURES AND MATERIALS
- AE3213 COMP FLUID DYNAMICS
- AE3244 GAS TURBINE ENGINEERING

COMMON AERO/AT

- AE3211 SYSTEMS RELIABILITY AND SAFETY

AIR TRANSPORT

- AE3210 AIRWORTHINESS
- AE3212 AIR TRANSPORT OPERATIONS
- AE3250 AVIONICS AND CONTROL

PART 4

MENG AUTOMOTIVE

MEM105 (CORE) VEHICLE TECHNOLOGY

FOUR ELECTIVES: ONE OR TWO FROM ELT5; REMAINDER FROM ELT2 (NOT ALREADY TAKEN AT PART 3) OR ELT6

MENG ENERGY

FIVE ELECTIVES: TWO OR THREE FROM ELT5; REMAINDER FROM ELT2 (NOT ALREADY TAKEN AT PART 3) OR ELT6

MENG MECHANICAL

FIVE ELECTIVES: TWO OR THREE FROM ELT5; REMAINDER FROM ELT2 (NOT ALREADY TAKEN AT PART 3) OR ELT6

CORE

- ETM051 ENGINEERING MANAGEMENT 4
- ETM06X GROUP PROJECT (FROM ELT3)

MENG AERONAUTICAL

FIVE ELECTIVES: TWO OR THREE FROM ELT4; REMAINDER FROM ELT1 (NOT ALREADY TAKEN AT PART 3) OR ELT6

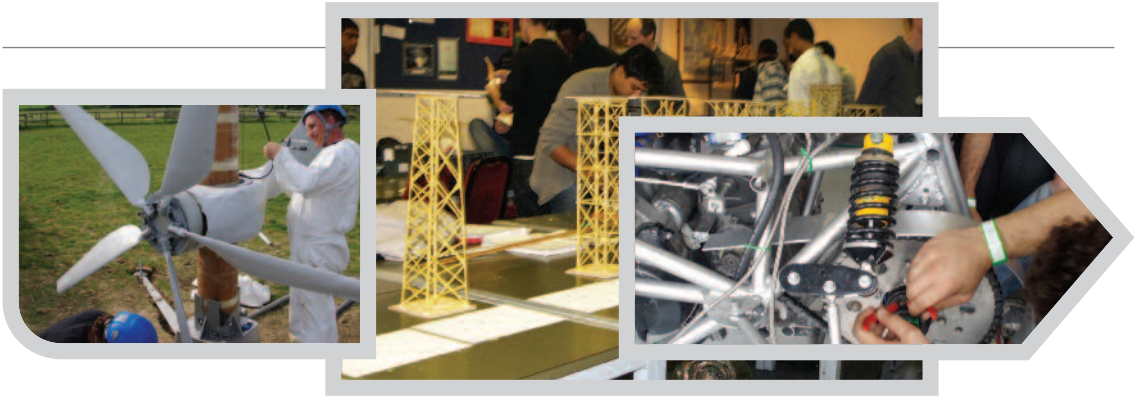
MENG AIR TRANSPORT

FIVE ELECTIVES: ONE FROM ELT4; TWO FROM MSC; REMAINDER FROM ELT1 (NOT ALREADY TAKEN AT PART 3) OR ELT6

ELECTIVE LIST

- AE3203 AERODYNAMICS ELT1
- AE3204 AIRCRAFT STRUCTURES AND MATERIALS ELT1
- AE3210 AIRWORTHINESS AND MAINTENANCE ELT1
- AE3212 AIR TRANSPORT OPERATIONS ELT1
- AE3216 BUSINESS AVIATION OPERATIONS ELT1
- AE3244 GAS TURBINE ENGINEERING ELT1
- AE3213 COMPUTATIONAL FLUID DYNAMICS ELT1/2
- ME3112 ENERGY UTILISATION AND MANAGEMENT ELT1/2
- ME3114 RENEWABLE ENERGY ELT1/2
- ME3107 HEAT TRANSFER AND TURBOMACHINERY ELT2
- ME3108 SYSTEMS RELIABILITY AND INTRODUCTION TO SUSTAINABILITY ENGINEERING ELT2
- ME3113 COMPUTATIONAL ANALYSIS OF ENGINEERING STRUCTURES ELT2
- ME3151 I C ENGINES AND VEHICLE POWER TRAIN ELT2
- ME3152 VEHICLE DYNAMICS ELT2
- ETM063 FORMULA STUDENT ELT3
- ETM065 AERONAUTICAL DESIGN ELT3
- ETM066 EGPR (EUROPEAN GLOBAL PRODUCT REALISATION) ELT3
- ETM069 DEVELOPING TECHNOLOGIES ELT3
- AEM203 AERODYNAMICS OF WINGS AND BODIES ELT4
- AEM226 STRUCTURAL DYNAMICS AND AEROELASTICITY ELT4
- AEM204 FOLLOW-ON RESEARCH PROJECT ELT4/5
- EPM771 CAD ELT4/5
- MEM102 COMBUSTION FUNDAMENTALS AND APPLICATIONS ELT4/5
- MEM103 ADVANCED MECHATRONICS ELT4/5
- MEM105 VEHICLE TECHNOLOGY ELT5
- LAXXXX LANGUAGE ELT6

Employability through experience



INDUSTRIAL PLACEMENTS

Our one year industrial placement scheme enables you to apply the skills and knowledge that you have developed at City to manage real challenges in the workplace.

A year spent in industry is a valuable opportunity to develop your technical skills and business knowledge and it can often lead to sponsorship and future graduate employment.

After the successful completion of your second year of study you can opt to undertake a period of paid work lasting between nine and twelve months. Salaries vary but you would typically be paid between £15,000 and £22,000 pro rata per year while on placement. You will then return to University to complete your studies.

We find that placement students return to City with more maturity, motivation and a much better understanding of key concepts, having applied them on placement. This often leads to the attainment of a higher class of degree.

FREQUENTLY ASKED QUESTIONS

What support is there for finding a placement?

Our dedicated team of placement specialists, the Professional Liaison Unit (PLU), have extensive experience in helping students to secure placement employment across a range of industries.

The PLU sources exclusive opportunities with a wide range of employers as well as advertising vacancies from the major recruiters. Placements are not guaranteed, you will need to apply directly to companies that interest you.

The unit runs workshops and one-to-one guidance sessions to prepare you for making successful applications and preparing for interviews.

What support is provided while I am on placement?

Your personal tutor will meet with you twice during the year to help you to maximise your professional and academic achievements and ensure that you are undertaking properly supervised work that will contribute towards the experience required for Chartered Engineer status.

"Placement and internship programmes were an important source of fresh talent in 2009. 84.3% of AGR employers converted some of their students or interns into graduate recruits."
The AGR Graduate Recruitment Survey 2010 Summer Review

"Placement students were more likely to be employed six months after graduating and to have higher salaries than the average."
Attainment in higher education Erasmus and placement students. HEFCE November 2009

Talking about work placements

Tobias Backer Dirks

Graduated in 2011 with a 1st class (Hons) degree in MEng Aeronautical Engineering

Currently working at EADS Innovation Works in preparation for postgraduate studies at City University London

"Having attended another London university in the past I thought I knew what lay before me but was pleasantly surprised to find out that City University London is not like other universities. Little things like the staff being interested in getting to know you and your background make a huge difference to the learning experience. The staff, both academic and administrative, are always willing to help with any issues you may be experiencing, academic or personal. The student body is extremely diverse; this results in an exciting and vibrant atmosphere where everyone has a chance to learn and discuss different cultures and customs helping students become more well rounded people, rather than just engineers.

Students are not only prepared for the real world, but actively introduced to it. City has helped me secure an internship at EADS Innovation Works in preparation for the PhD I will be undertaking at the University. I can wholeheartedly recommend City to anyone who wants to enjoy a truly fantastic learning experience, being secure in the knowledge that they will be looked after and rewarded for their efforts in the future."

Priya Talwar

Year 3 MEng Mechanical Engineering

Completed a Professional Placement at National Grid in 2010-11

"Working for National Grid for 14 months has truly been a phenomenal experience. I had the opportunity to be part of exciting departments, such as Gas Operations where I was responsible for launching new excavating technology and managing a team of 5. I am now working on a project called Maintenance Delivery Electricity where I am responsible for solving a noise and vibration problem in a sub-station. I am also gaining an insight in the construction of London Power Tunnels – new infrastructure to meet the increase in demands for electricity. I was able to reinforce many essential skills such as time and activity management, presentation skills, leadership and problem solving skills.

The opportunity to spend a year in industry is hugely beneficial as it allows you to gain an insight in a particular field of engineering and allows you to network and make contacts for the future."

Graduate Careers

When you graduate with a mechanical or aeronautical degree from City University London you will find yourself in demand from organisations ranging from corporate industry giants to dynamic start-up companies.

Employers place great value on the professional education and quality of our graduates, recognising their intellectual skills, professionalism, industry experience and their ability to relate theory to practical problems. Recent graduates have joined employers such as Airbus, SAS, Rolls-Royce Plc, Audi, BA Systems Plc, AgustaWestland, TOTAL Oil, Jaguar Cars, Tube Lines, National Grid, BP, Ford, Group Lotus Plc, Toyota, Shell, London Heathrow Airport, British Airways Engineering and Virgin Atlantic Airways.

City University London ranks 10th in the UK for employability, according to *The Times Good University Guide 2011*.

Sean Canty

Graduated in 2010 with a 1st class (Hons) degree in MEng Automotive and MotorSport Engineering

Currently working at Ricardo in Technology Innovation and Development and completed a very successful professional placement at Roll-Royce in 2008-09

"City University London was a great place to study in a great location in central London. Studying at City was both challenging and rewarding, the University's leading research ensured that the lecture material was at the cutting edge of technology. Lectures were combined with tutorials and practical laboratory sessions to give a thorough understanding of the subject.

The staff were always on hand to help should you need it. All the taught disciplines culminated in a design project each year. There are a range to choose from and the design and build of a race car for Formula Student event was my highlight. These design projects are run as close as possible to real world engineering businesses, incorporating all aspects from finance and project management to design and manufacture. This experience was vital for me to secure employment after graduation.

City helped me find and supported me through a fantastic placement year at Rolls-Royce Plc between my second and third years. The careers department at City helped me secure a graduate position at Lotus Engineering. I now work at Ricardo, the world's largest independent provider of strategic and technology consulting within the automotive and related industries. I work in Technology and Innovation where I have been developing technologies for a variety of industries. My education at City set me up perfectly for my career in engineering and I still use my old lecture notes from time to time!"

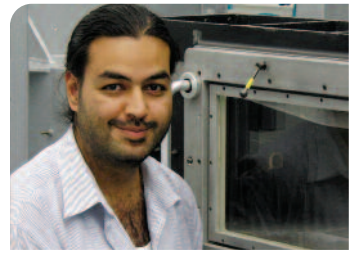
Ray Robinson

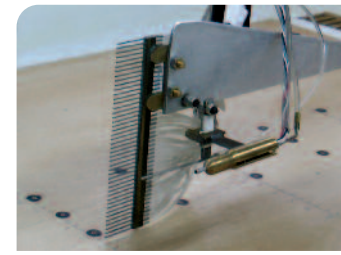
Graduated in 2009 with a 1st class (Hons) degree in BEng Mechanical Engineering

Currently working as Engineering Manager (Operations) for a large company in the power generation industry

"I came to City University London to study Mechanical Engineering. I had completed an engineering apprenticeship in the past and worked for a number of years as a technician in the power generation industry. City University London has helped me to advance in my chosen career, and made returning to study a positive experience. From my first visit I was made to feel welcome as a member of City. I have particularly enjoyed the team working aspect of studying Engineering Design. A team of undergraduate engineers collaborate with other universities internationally, and design and develop working prototypes for an existing engineering company. Working together with a common aim as an international industrial design team, helps to develop many important skills that potential employers will value highly.

I would thoroughly recommend studying engineering at City. A lot of hard work is involved, but teamwork and guidance from the academic staff will help to ensure your success."





Sara González Luque

Graduated in 2011 with a 1st class (Hons) degree in BEng Air Transport Engineering

Currently working at ExecuJet Aviation Group

"When I enrolled at City I expected that having a degree in Air Transport Engineering from the UK would change my professional life for the better in many ways. What I did not expect was how my personal life changed for the better too! City University London provided me not only with all the necessary tools and engineering knowledge to work in engineering but also with great human values. The lecturers at City were very helpful, understanding and comprehensive. They were the reasons for my success.

Studying at City allowed me to meet people from all over the world and experience different cultures, different methods and different ways of thinking which will certainly be very useful in my near future.

I am currently working at ExecuJet Aviation Group, a leading global business aviation organisation headquartered in Zurich. I work at their London offices within the Maintenance and Engineering department. My main tasks are the elaboration of Maintenance Programmes and MELs for our London managed fleet.

Coming to City has been with no doubt one of the best decisions I have ever made!"

Jay Avraj Bhatti

Graduated in 2008 with a 1st class (Hons) degree in MEng Aeronautical Engineering

Currently back as a research student for a PhD investigating City's own flow control technologies being applied to wind turbine blades, after working as a graduate engineer for an aircraft structural engineering consultancy, Cabot Design Ltd

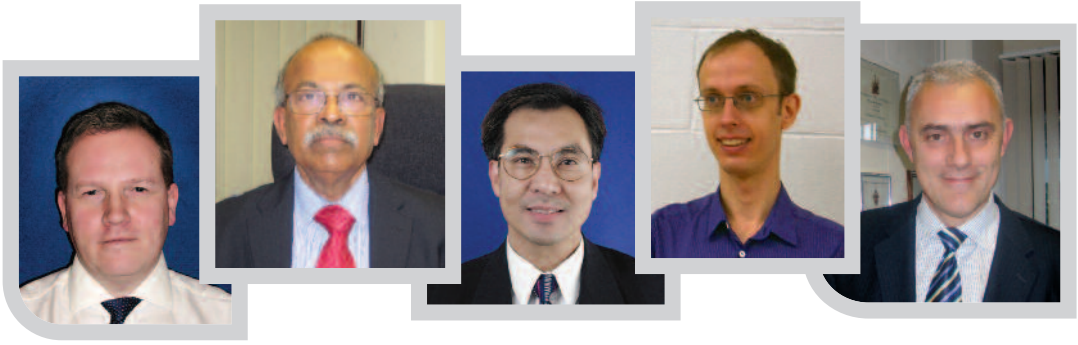
"As an international student, the prospect of choosing a suitable UK university in which to invest for a career in engineering was daunting. My criteria focussed mainly around the practical 'hands-on' skills and the confidence I would gain through experience.

The experience in completing the course at City has more than exceeded my expectations. The course structure was broad and thorough, such that a primary focus is given on ensuring a sound understanding of the basics. In the latter stages, the course became specialised enough to provide me with a leading edge perspective on the fields I chose to specialise in.

The University is home to the awesome Handley Page Aero Laboratory, in which students are trained to work proficiently with experimental and computational methods for analysis. A key advantage here is that almost all the academic staff were full-time engineers and still participate in industry through research. This means that they were, and still are, always updating course material to keep the students up to date with the latest issues, methods and standards. The staff go out of their way to provide unmatched support and mentoring, especially during the final year thesis. In fact, my supervisor supported me to the point where we were able to publish a conference paper based on our findings through the thesis, and participate in the largest conference in the aeronautical field held in Alaska!

I was able to use my skills and rapidly participate as a graduate for an aircraft structural engineering consultancy, specialising in analyses for the wing structure for a large European aircraft manufacturer. However, in summer 2010, my supervisor offered a position in which I would be analysing City's own patented technology – aimed at augmenting the performance of wind turbine blades. An offer that was too good to turn down!"

Meet members of the Mechanical and Aeronautical Engineering academic team



PROFESSOR CHRIS ATKIN
PROFESSOR OF AERONAUTICAL ENGINEERING
Professor Atkin is an expert in boundary layer flow control for aircraft fuel burn reduction, and laminar flow control in particular. Until 2008 he was Head of Aerodynamics and Aeromechanical Systems at QinetiQ plc and is a Fellow, and Member of Council, of the Royal Aeronautical Society. Professor Atkin lectures in aerodynamics and runs the Year 3 individual project and Year 4 aeronautical group design modules.

PROFESSOR RANJAN BANERJEE
PROFESSOR OF STRUCTURAL DYNAMICS
Professor Banerjee has been teaching and conducting research within the technical areas of structural dynamics, aeroelasticity and composite materials for more than 25 years. His contribution in Aeronautical Engineering is related to the solutions of problems in aeroelasticity for metallic and composite aircraft. Professor Banerjee earlier worked in collaboration with NASA and to date he has supervised eight Engineering and Physical Sciences Research Council (EPSRC) projects as Principal Investigator. He has published over 80 papers in peer reviewed international journals. His current research is funded by EPSRC and the American Air Force Base.

DR CHAK-WAH CHEUNG
SENIOR LECTURER IN AERONAUTICAL ENGINEERING
Dr Cheung trained as an aeroelastician in the aircraft industry and he currently carries out research in developing mathematical methods and computational tools for the analysis of flexible aircraft structures under the effects of unsteady aerodynamic loads, covering wing divergence, flutter and gust responses. He lectures mainly on aircraft structures and aeroelasticity and contributes to aircraft design teaching for Years 2 and 3 aeronautical and air transport engineering students. He is a Fellow of the Royal Aeronautical Society, Institute of Mathematics and its Applications and the Higher Education Academy.

DR RICHARD GOODEY
LECTURER
Dr Goodey's research involves the modelling of geotechnical problems using City's geotechnical centrifuge facility. His focus is on foundations and other underground structures – how they interact with each other and whether new construction will adversely affect existing structures. He previously worked for the Geotechnical Consulting Group and is still retained as a consultant. Dr Goodey teaches the fundamentals of engineering mechanics and materials science in Year 1 and Year 2.

PROFESSOR AHMED KOVACEVIC
HOWDEN CHAIR IN ENGINEERING DESIGN AND COMPRESSOR TECHNOLOGY
Professor Kovacevic is an expert in the analysis and design of positive displacement compressors. Methods he developed are broadly used in research, modelling, analysis and design of such machines. He is actively helping manufacturers of such machines to implement modern methods and tools and improve their business opportunities. He teaches engineering design courses in mechanical engineering among which EGPR (European Global Product Realisation) allows direct links between students and industry to help them become engineers for the 21st century.

DR RUSSEL LOCKETT
SENIOR LECTURER IN APPLIED THERMODYNAMICS
Dr Lockett's research interests include laser diagnostics, experimental fluid mechanics and combustion. His recent research has focused on the stability of diesel fuels, internal flow and fuel spray atomisation in fuel injection equipment, cavitating flows, instabilities and soot formation in explosion flames and length-scale analysis in cellular structures. He teaches engineering thermodynamics, combustion fundamentals and applications and theoretical aspects of turbo-machinery design.

DR SIMON PRINCE
SENIOR LECTURER IN AEROSPACE ENGINEERING
Dr Prince's research field is experimental and computational aerodynamics, covering subsonic, transonic and supersonic flow regimes with a particular interest in high speed flow control and wind energy. He is the Secretary of the Association of Aerospace Universities, a member of the ESDU Transonic Aerodynamics Committee and a founder member of the Totempower team. Simon has worked on projects ranging from hypersonic missiles, combat aircraft propulsion integration, transport aircraft wing analysis, helicopter rotor blades and wind turbines. His teaching includes fluid mechanics, gas turbine engineering and aerodynamics and orbital mechanics and space transportation.

DR MARIA TOMAS-RODRIGUEZ
LECTURER IN AVIONICS AND CONTROL
Dr Tomas-Rodriguez's research is related to the stability analysis of helicopters and motorcycles. In some occasions, these types of vehicles show dangerous oscillations and undesirable behaviour that may compromise the safety of their users. The nature of these problems needs to be understood in order to design possible improvements. She supports students on international exchanges.

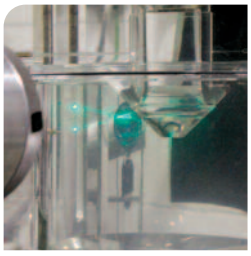
MR CENGIZ TURKOGLU
ADMISSIONS TUTOR
Mr Turkoglu, who lectures on airworthiness and system safety on both undergraduate and postgraduate courses, has a wealth of professional experience as a licensed aircraft maintenance engineer, safety and quality auditor and continuing airworthiness manager. He is also a part time IOSA auditor as well as the Chairman of the Technical Committee of the International Federation of Airworthiness. He is currently conducting research on risk management in the commercial air transport industry.

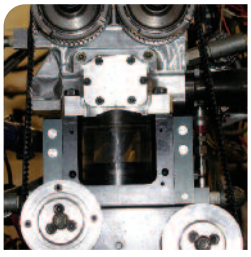
DR YOUYOU YAN
LECTURER IN MECHANICAL ENGINEERING
Dr Yan has research interests in experimental fluid mechanics using laser diagnostics and high speed imaging in the areas of spray characterisation and in-cylinder fuel formations in direct injection gasoline engines, as well as oil transportation between the piston rings and the cylinder liner in reciprocating engines. She is also interested in heat transfer in rotational surfaces. She teaches engineering laboratory and computation. She is the Assistant Dean for research students in the School of Engineering and Mathematical Sciences.

NOTE:
Other members of the team can be found on individual course pages.

Research in the School of Engineering and Mathematical Sciences

Through five research centres, the School of Engineering and Mathematical Sciences aims to tackle the big issues facing society today, from sustainability to national security. Our work is interdisciplinary and often conducted with industry.





The School promotes interdisciplinary and single discipline activities and opens considerable opportunities for the future in both basic and applied research.

Nationally and internationally reputed research in the School features close links with industry, exhibits a strong interdisciplinary character and encompasses comprehensive basic and applied components.

Keenly aware of its central location in London, the School has recognised five areas of significant internal strength and distinction, which provide the main framework for its continued growth and development. The School promotes research excellence in the following research centres:

- Applied Mathematics
- Construction Processes
- Energy and Transport
- Instrumentation and Sensors
- Systems and Control.

These research centres have an international reputation in their fields. This structure is seen as a launching basis for future research activities.

For more information please visit **www.city.ac.uk/engineering-maths/research**

ENERGY AND TRANSPORT (ET)

The Energy and the Environment Group was established in 2001. The Group laboratory is equipped with new laser instrumentation and optical engines. The laboratory also includes test rigs for research in and development of air and refrigeration compressors and two-phase expanders.

The Aeronautics Group traces its origins back to Sir Frederick Handley Page who established in 1909 at the Northampton Institute (now City University London) the first aeronautical laboratory in the UK. The Handley Page Laboratory is equipped with a range of simulators, wind tunnels and computational facilities.

The ET centre is focused on the development of new technologies and operational practice for the ground and air transport industries – towards the achievement of a secure, affordable and environmentally sustainable transportation system – and also on technologies for improved efficiency in fluid power systems. The major research themes for the centre are: internal combustion engines; computational fluid dynamics; alternative energy systems & combustion research; positive displacement compressors; small turbo-compressors; viscous flows and flow control for aeronautical and wind engineering; fixed and rotary wing aeronautical design, including unmanned and micro air vehicles; structural dynamics and aeroelasticity; aircraft reliability and maintenance; air safety management.

A truly international outlook

We offer an internationally focused learning environment. This is primarily achieved by establishing flagship partnerships in teaching and research with appropriate high profile international organisations in countries and regions of strategic importance.

The School has extensive partnerships with high profile overseas institutions engaging in a wide range of collaborative activities in undergraduate taught programmes, Continuing Professional Development, joint research, student and staff exchanges.

These include working with key partners in China, India, Russia, Korea, USA, Hong Kong and most of the EU countries. Such links provide students with excellent opportunities to take part in international exchange programmes, placement opportunities, joint research and other similar provisions that are becoming vitally important for 21st century graduates operating in an increasingly global employment market.

The Lord Mayor of London Scholarships

To acknowledge your achievement we have established the City University London Scholarship for Academic Excellence for UK and EU students starting an undergraduate programme of study at City in 2012. The award will be granted subject to confirmation of your A-level results (or equivalent qualifications).

Rewarding excellence

As an Engineering student you will be eligible for:

- £3,000 a year if you achieve A*AA standard in your three best A-levels or equivalent qualifications
- £2000 if you achieve AAA standard
- £1000 if you achieve AAB standard.

- The Scholarship extends over three or four years subject to satisfactory academic performance with the exception of placement years

- You do not need to apply – once your qualifications are confirmed in August 2012 an award will be made. All applicants achieving the required level will automatically be awarded the Scholarship
- General Studies A-level is excluded.

NOTE:

The 2012 City University London Scholarships arrangements are subject to final approval in the University and we reserve the right to make changes.

Please visit **www.city.ac.uk/study/undergraduate/scholarships** for the latest information.

Student life at City

CENTRAL LOCATION
We are located in the heart of London, close to the capital's leading financial, legal, media and medical institutions. You can take advantage of London's famous cultural, sporting and social opportunities.

STUDENT CENTRE
Our Student Centre offers practical help with your finances, learning, health and housing. They can also help with advice on your course, career and University facilities.

Visit **www.city.ac.uk/studentcentre** for more information.

SPORTS ACTIVITIES
We support a range of sporting activities including badminton, basketball, cricket, fencing, football, hockey, netball, rugby, squash and table tennis.

ACCOMMODATION
Whether you want to live in halls of residence or private rented accommodation, our Student Centres housing advisers can help.

For further details please visit **www.city.ac.uk/accommodation**

LIBRARY SERVICES
The main University library occupies five floors in the Northampton Square building. Our library stock is more than 280,000 volumes and you can borrow up to 15 books for as long as 3 weeks.

Please see **www.city.ac.uk/library**

STATE-OF-THE-ART FACILITIES
We recently undertook a multi-million pound project to refit all our lecture theatres with state-of-the-art audio-visual equipment and provide over 1,000 Windows PCs, 200 Apple Macs and 57 Linux workstations.

CAREERS SERVICES
Our professional networks help to build your skills and gain industry insights. You can discuss your career plans in one-to-one appointments and explore our extensive careers resources including computer-aided guidance packages and aptitude testing systems. In the autumn and spring terms major employers visit the University to give presentations and run skills sessions.

Find out more at **www.city.ac.uk/careers**

ALUMNI
When you embark on your course with us, you begin a lifelong association with both the University and its wider community of former students.

Find more information at **www.city.ac.uk/alumni**

A GREAT STUDENT EXPERIENCE
We seek to provide high quality equipment and facilities to enhance your learning experience. The Students' Union organises a wide range of social events to keep you entertained and we have over 50 clubs and societies which cater for a broad range of interests. If that isn't enough the London nightlife is famous, there are many venues to visit, some of which are discounted or free for students.

How to apply to City

Applications for degree courses *must* be made through UCAS.

You can apply through your school or college using the UCAS Apply system at **www.ucas.com/students/apply/**

WHEN TO APPLY

Applications for entry September 2012 should arrive between 1 September 2011 and 15 January 2012.

When your application has been acknowledged by UCAS you will receive a personal identification number so that you can access your records via 'Track' at **www.ucas.com/students/track/** on the UCAS website.

ENQUIRIES

If you have any questions about the admissions process please contact the Undergraduate Admissions Office:

T: +44 (0) 20 7040 6050
E: semsug@city.ac.uk

FURTHER INFORMATION

- You can apply for up to five universities
- Take care when entering your course code
- UCAS has an 'invisibility choices' policy, meaning each university can only see their entry and not those of other universities you have chosen
- Submit your completed application to UCAS with a £21 application fee
- If you only wish to apply for City you can make a single choice application at a reduced rate of £11
- The University code for City University London is C60

UCAS CONTACT DETAILS

Universities and Colleges Admissions Service (UCAS)
www.ucas.com

Callers in the UK
0871 468 0468

Callers outside the UK
+44 (0) 871 468 0468

INTERNATIONAL STUDENTS

We have put together some practical information to help you when planning your arrival to the UK and City University London please visit **www.city.ac.uk/international/international-students**

SCHOLARSHIPS BURSARIES AND AWARDS

City University London has a range of scholarships and prizes available for undergraduate students. Some of these are generously funded by charitable foundations, former students, and other bodies and can be applied for each academic year.

Visit **www.city.ac.uk/engineering-maths/scholarships** for more information.

FINANCIAL SUPPORT

There are a range of options available to you to help you cover your living costs while you study at City University London. For information on Government support as well as other potential sources of funding please visit **www.city.ac.uk/study**

Map and contacts

CONTACTING US

You can contact our Undergraduate Admissions team as follows:

UNDERGRADUATE ADMISSIONS TEAM

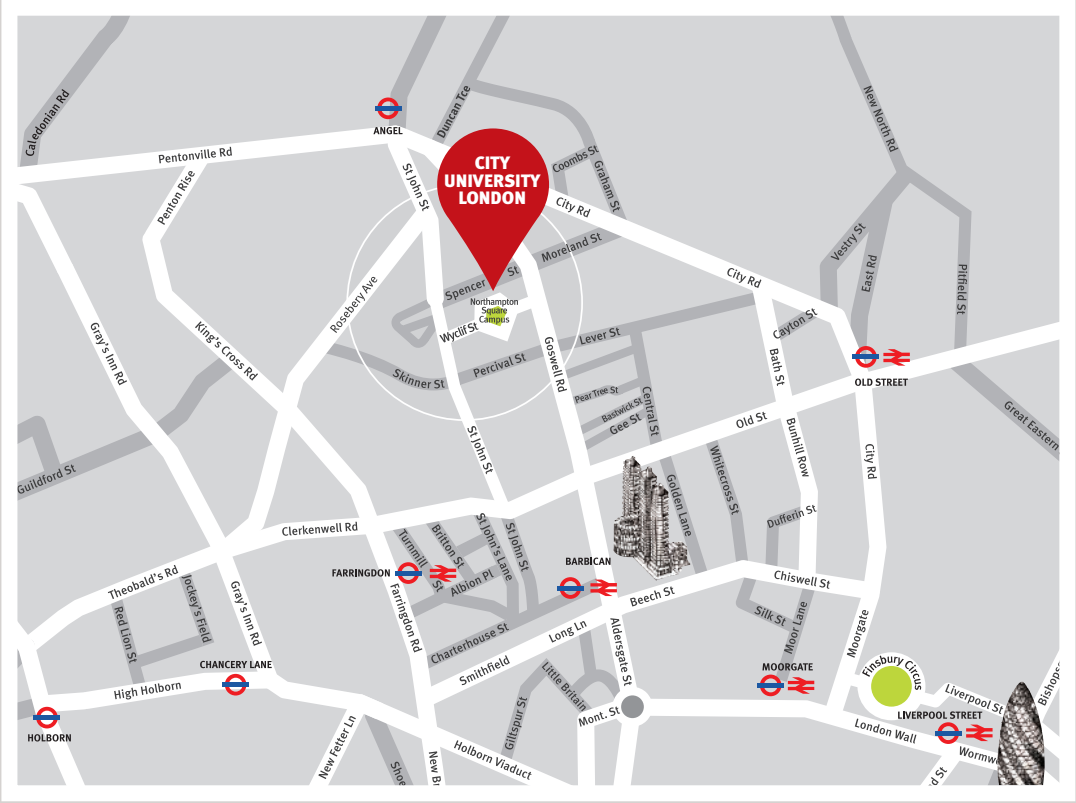
Programmes Office
School of Engineering and Mathematical Sciences
City University London
Northampton Square
London EC1V 0HB
United Kingdom

T: +44 (0) 20 7040 6050
E: semsug@city.ac.uk

If you are enquiring about the progress of an application you have made through UCAS, please remember to provide your UCAS application number.

ADDITIONAL INFORMATION

You can find more information on our undergraduate web page at **www.city.ac.uk/engineering-maths/undergraduate**



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www.pslondon.co.uk

CITY UNIVERSITY LONDON

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semsug@city.ac.uk

Phone enquiries:
+44 (0) 20 7040 6050

Find out more at:
www.city.ac.uk/engineering-maths/undergraduate

City University London
Northampton Square
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United Kingdom

- MEng/BEng Aeronautical Engineering
- MEng/BEng Air Transport Engineering
- MEng/BEng Automotive and Motorsport Engineering
- MEng/BEng Energy Engineering
- MEng/BEng Mechanical Engineering