

The background of the entire page is a close-up photograph of mechanical components. On the left, a circular pressure gauge is visible, featuring a white face with black markings and a scale from 0 to 100. The gauge has a needle pointing towards the 40 mark. To the right of the gauge, there are several blue, cylindrical mechanical parts, possibly pistons or valves, arranged in a row. The overall image has a technical, industrial feel.

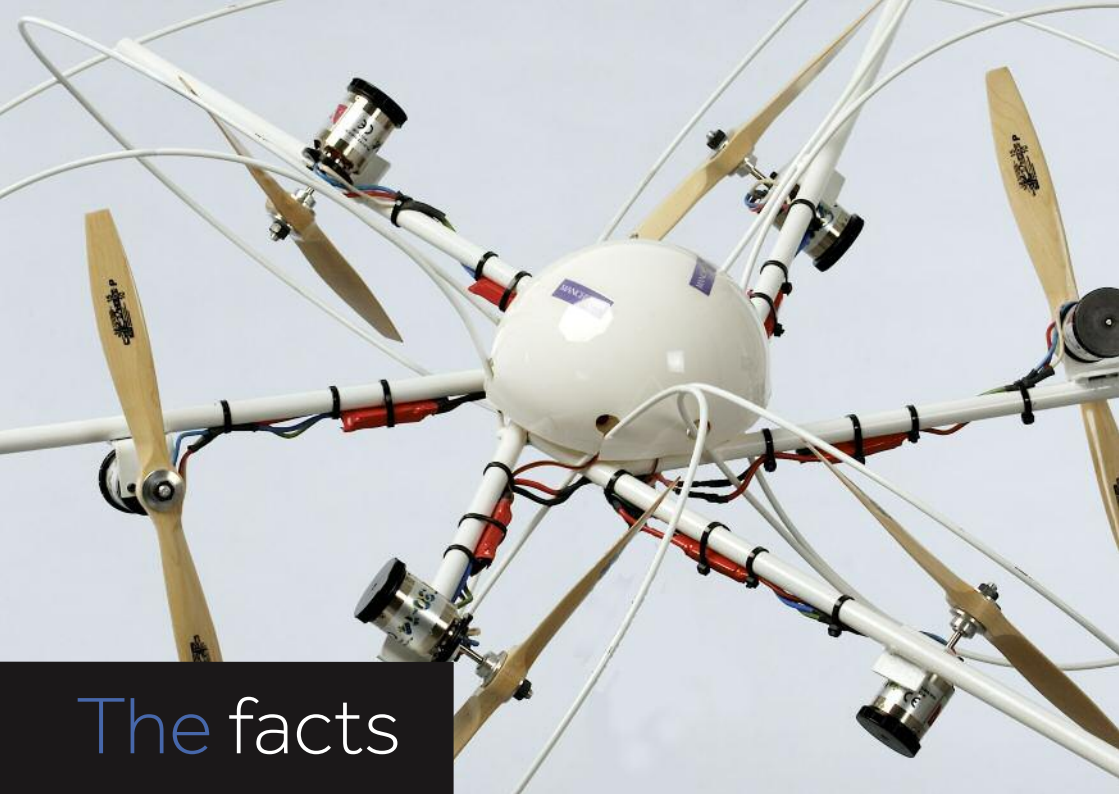
MANCHESTER
1824

The University of Manchester

Mechanical, Aerospace and Civil Engineering

UNDERGRADUATE BROCHURE 2014

www.manchester.ac.uk/mace



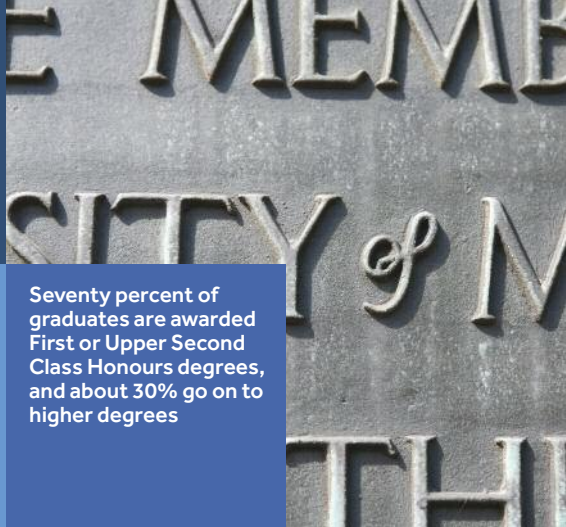
The facts



One of Europe's leading Schools of Engineering, located in the Pariser and George Begg buildings

Eighty teaching staff, about 1,000 undergraduates and 600 postgraduates, with up to 350 undergraduate places each year

Seventy percent of graduates are awarded First or Upper Second Class Honours degrees, and about 30% go on to higher degrees





“ The unique combination of mechanical, aerospace and civil engineering disciplines in the School exposes academics and students to a variety of engineering approaches to problem solving. ”

Dr Paul Chan 2012



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Our University

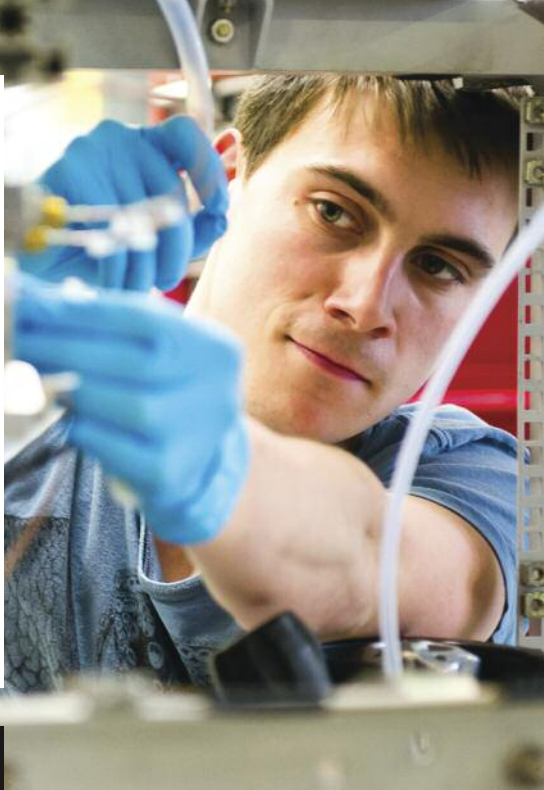
Making things happen

Influential, forward-thinking and down-to-earth, we'll give you an amazing university experience rooted in a rich academic heritage. We turn enthusiasm into achievement and groundbreaking theory into practice.

We accomplish feats of global significance, from splitting the atom to giving the world graphene – the two-dimensional wonder material that is one atom thick but 200 times stronger than steel. With more Nobel laureates on our staff than any other UK university, and strong links to industry and public services, we vitalise our undergraduate courses with pioneering research.

Join us at the heart of Britain's most popular student city.

Learn more about us:
www.manchester.ac.uk



Introducing Manchester

Our city

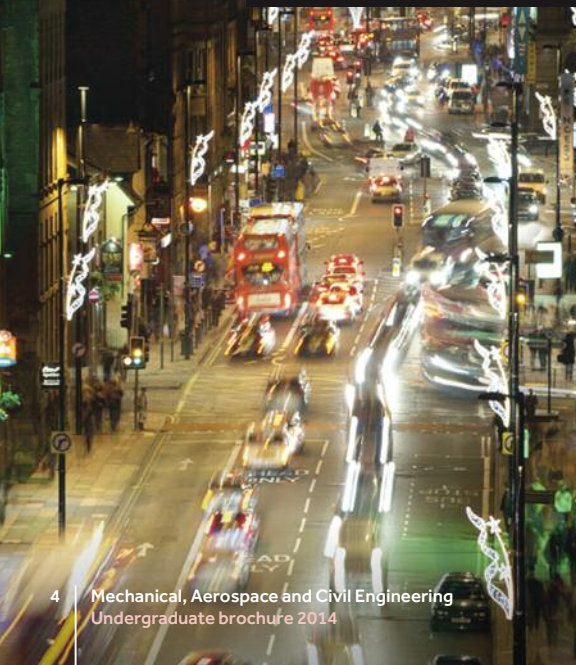
Always moving forward

Manchester lives on the edge of tomorrow, ever a step ahead in science, industry, media, sport and the arts. The Mancunian character, exemplified by the city's central role in the industrial revolution, strives for excellence in all walks of life.

This is a city of many accents, having become a cosmopolitan magnet for students and professionals eager to experience its can-do attitude, independent spirit and cultural wealth.

Never content to live on past glories, Manchester has a passion for progress.

Discover what makes Manchester unique:
www.manchester.ac.uk/cityofmanchester





Your experience

More than just a degree

From the flexible, 24/7 learning environment of the Alan Gilbert Learning Commons to the personal development opportunities and specialist support services we offer, we will empower you to be your best.

We're well underway with the biggest investment programme ever seen in UK higher education, having invested £750 million in our facilities since 2004, with another £1 billion to follow. Away from your studies you'll have access to the UK's largest student union, almost 300 student societies, and excellent sports and fitness facilities.

The only thing you won't experience is boredom.

Hear from some of our students, graduates and staff:

www.manchester.ac.uk/ug/profiles



Your career

On a course to success

We are one of the UK's most targeted universities by employers – 92% of our graduates go straight into employment or further study.

We design our courses with your employability in mind. Our problem-based approach to learning inspires you to think critically, creatively, and independently. You'll also be able to learn new skills through volunteering, personal development programmes and study abroad pathways.

We have the UK's best careers service, providing advice and mentoring services, and connecting you with employers who'll put you on a path to career success.

Take control of your career:

www.manchester.ac.uk/careers

The background is a dark blue image of a chalkboard. It features several hand-drawn diagrams and text in white chalk. On the left, there are two horizontal arrows pointing right, with the symbol U_0 written below them. In the center, there is a circular diagram with a smaller circle inside, and some arrows indicating a path. To the right, there is a diagram of a line with several points and arrows, and the text "alternating vortex" is written below it. The overall theme is engineering and fluid dynamics.

Mechanical, Aerospace and Civil Engineering

at Manchester

Engineering is the art of applying scientific and mathematical knowledge, experience and judgement to produce things that benefit people. Engineers design bridges, aircraft and vehicles, as well as developing processes for cleaning up the environment to ensure a sustainable future. In other words, engineering is the process of producing a technical product or system to meet a specific need.

As an engineer, you can enable human potential more than any other professional, by helping to provide the complex infrastructure for a civilised society.

You will have many jobs to choose from as an engineer. You can become a research engineer, discovering new ideas; a design engineer, with creativity and imagination; a construction or production engineer, making products or systems; or a project manager, controlling complex products and constructions. The excitement is that you don't do the same thing day in and day out.

Nine reasons we should be your number one choice

1. Quality of courses

Our courses are recognised by both employers and the engineering institutions as being of outstanding quality, which leads to the high employment rate of our graduates. The courses are taught by world-recognised specialists in their fields and the quality is constantly monitored to ensure that the standard remains consistent and the material is relevant and up to date.



2. Employability and careers

We are a dominant force in engineering and technology and are top-rated for graduate employment. Any one of our degrees will open up a whole range of opportunities to you. Our courses have a practical base to ensure you leave us with not just the theory behind mechanical, aerospace or civil engineering, but also the skills to put theory into practice. The spectrum of jobs includes consultancy, construction, design, manufacturing and management. A degree from the School is an international currency; we have graduates in almost every country in the world.

As the field of engineering is wide and diverse, so are the career opportunities on offer. From the conception of new ideas, planning and maintenance, or the managing of complex products and constructions, engineering is an exciting profession, one in which an individual can take pride. It is a profession that can enable you to broaden your horizons and realise your potential.

You can find more detailed information on career progression and postgraduate study here by visiting our School website and clicking on the specific course links.

3. Teamwork

Meet new friends, work in groups, learn from each other and share your experiences. Teamwork plays a large part in the life of a Mechanical, Aerospace and Civil Engineering (MACE) student.

4. Clubs and groups

We also help students to run their own engineering societies. The societies organise industrial visits, lectures by guest speakers, a careers fair, sports, and social functions. Currently in the School we have a Formula Student team, the Civil and Construction Society, an Aerospace Society, and a Mechanical Society.

5. Industrial partnership links experience opportunities

The University of Manchester has many collaborative alliances with leading businesses, meaning our courses and research are on the cutting edge of engineering advances. In addition, these links can help students interested in either a summer vacation placement or students who wish to spend one year on an industrial placement to find opportunities.

6. Peer Assisted Study Scheme (PASS)

We encourage a relaxed and informal relationship between staff and students. Founded on the personal tutorial system, our established students organise PASS, a peer group support and mentoring scheme for first-year groups. PASS has proven to be a huge benefit to students and helps resolve any worries or problems, as it ensures our students know that help is always at hand.

7. Excellent research rankings

In research, the School performed extremely well in the national 2008 RAE exercise, with 70% of research activity ranked as “internationally excellent”. The University is ranked third in the UK in terms of research power and we have a combined record of excellence that is among the strongest in the country. The Shanghai Jiao Tong 2012 places Manchester 40th in the world’s top 100 universities.

8. Extensive laboratory facilities

The teaching courses are supported by excellent experimental facilities available to all programmes.

Civil Engineering students have a dedicated structural testing laboratory, a teaching-focused hydraulics and geotechnics laboratory, wind tunnels and a materials workshop. They also have access to leading research facilities, including the largest university hydraulic tilting flume in the world, an extensive range of mechanical property and structural testing facilities at both room and high temperatures, and a range of fire testing facilities.

Mechanical Engineering students have access to state-of-the-art laser laboratories, explosive testing laboratories, a large collection of wind tunnels and a superb environmental research centre. Students studying both Mechanical and Aerospace Engineering get the opportunity to use one of our supersonic tunnels and the School also boasts one of the very few hypersonic tunnels in the world, which can operate at up to six times the speed of sound.

Aerospace students have access to the School flight simulator which is used for teaching aircraft flight across all years. This provides a link between theory and practice and offers insights into aircraft handling characteristics that would be different from academic work alone. Students can experiment with a range of aircraft types, developing and testing their own aircraft configurations. Apart from taught courses, this facility is also available for project work and gives students the opportunity to enter a national flight simulator competition. There is a strong emphasis on the use of small unmanned air vehicles (UAVs) in the Aerospace course. In the first year all students are given their own model glider to be used as part of the aircraft flight course. In the third year there are a number of projects available on the use of autonomous fixed and rotary wing UAVs, and fourth year MEng students are expected to design, build and test their own UAV system.

All students have the opportunity to join the Formula Student programme – this is an entirely student-run scheme, open to students in all years, in contrast to most universities. For more information see <http://racingteam.manchester.ac.uk>.

We also offer students the opportunity to become involved in a new carbon-neutral ship competition. This is so new that we have no specific details at the time of going to print – look at our website for further details.

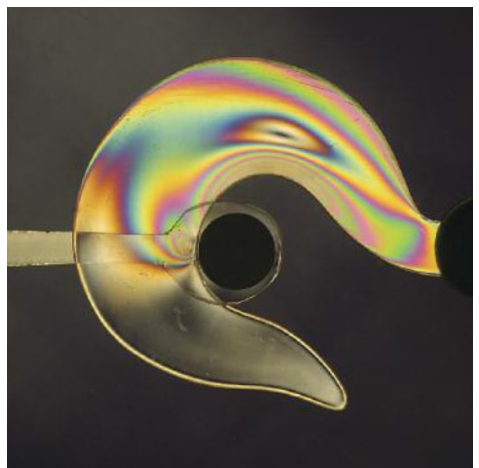
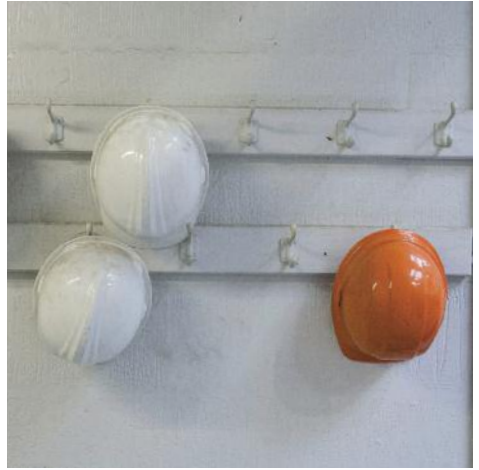
9. We are unique

We are a combined school, which allows us to give more cross-disciplinary input and enables students to get involved in cross-disciplinary research projects. Nevertheless, we still offer specific programmes in the separate disciplines to give our students the specialist knowledge they need to compete in the job market.

In Civil Engineering we offer a wide range of options with specific strengths in structures, the environment, sustainability and management.

In Mechanical Engineering we build on our historic routes at the forefront of the Industrial Revolution with a world-class course that gives a broad education in Mechanical Engineering.

In Aerospace Engineering we cover the core engineering science, interspersed with specialist aerospace units through the course.



Mechanical, Aerospace and Civil Engineering at Manchester

Awards

MACE students' success in the National Final of the 2012 BCSA/TATA Steel Student Design Competition – July 2012



Helen Fospero, Rufus Foster and Grace Richardson

In the National Final of the 2012 BCSA/TATA Steel Student Design Competition, Year 4 MEng students Rufus Foster and Grace Richardson were awarded third prize at the awards ceremony at the Museum of London in July. Shown above is their design for a high-speed rail bridge over an existing motorway and railway line, as well as a photograph of Rufus and Grace with journalist and television presenter Helen Fospero, who announced the awards.

Two undergraduate students from School of MACE, Deepthi Shanmugasundaram and Shaun Woo, won awards in the Greater Manchester area heat of the Institution of Mechanical Engineers' (IMechE) Speak Out for Engineering competition.

This competition was originally established in 1964 to challenge young engineers to prove that they could 'communicate effectively'. The heat in Manchester was organised by the IMechE Greater Manchester Young Members Panel. It attracted speakers from both industry and academia. In a two-hour competition, presentations by fourth year MEng Aerospace Engineering student Deepthi Shanmugasundaram and second year Mechanical Engineering student Shaun Woo triumphed and were awarded the first and second prizes respectively.



I was invited to the American Institute of Aeronautics and Astronautics (AIAA) Aerospace Sciences Meeting and New Horizons Forum in Orlando, Florida on 6 January 2011 to present my entry to the New Horizons challenge, in which I was a runner-up.

"The challenge entailed designing a demonstration competition, and naming a prize amount, that would inspire creative thinking and groundbreaking innovation. My idea for a prize was the 'Spaceplane Prize' – for \$15 million. The prize would be awarded to the first group to demonstrate a single-stage-to-orbit vehicle capable of reaching an altitude of 150km and performing one full orbit around Earth before returning to land. Also stipulated was that the vehicle must be able to take off and land on a conventional runway and have a capacity of three people excluding crew, and be able to conduct two flights in a month.

"I had a great time visiting Orlando and was also able to attend many interesting talks at the conference. It was a great opportunity to meet academics and professionals involved in all aspects of aerospace science and listen to others' ideas on new and future challenges for aerospace technology.

Leo Teeney

Our third year MEng Aerospace Engineering student won 2011 runner-up prize of the New Horizons Challenge, organised by AIAA





Our team who came second in the IT FLIES USA 2013

Congratulations to School of MACE team who came second in the IT FLIES USA competition that took place at the University of Dayton, Ohio, on Saturday 13 April 2013

Merlin Flight Simulation Group IT FLIES is a unique Aircraft Design and Handling competition which is judged in two parts: a presentation on the project material judged by flight test engineers and the flying and assessment of the aircraft design in the flight simulator by a US military flight test pilot. The MACE team, made up of three third year Aerospace students (Abdullah Desai, Ramy Mesalam and Stuart Garthwaite) presented their own design of a lightweight aircraft, designed for pilot training. The team were awarded their second place by Colonel Sam Carbaugh and Colonel Gary Konnert at an AIAA dinner and presentation, which included a talk from Prof. Scott Miller from Wichita State University.

The same team came first in the UK IT FLIES competition in June 2012. As part of their prize, the students won a flying lesson with the Aircraft Owners and Pilots Association (AOPA)- an article written by the students about their experiences on their flying lesson is available on line in the April 2013 edition of General Aviation (page 12/13).

<http://www.mace.manchester.ac.uk/news/achievements-and-awards/our-team-who-came-second-in-the-it-flies-usa-2013.htm>

Scholarships

The School has a range of scholarships available – visit **www.manchester.ac.uk/mace** for details.

Visiting us

The University of Manchester holds open days for prospective students. Further information can be found online at **www.manchester.ac.uk/opendays**. These are usually held in June and October. Booking is essential for the talks and lab tours we offer in Mechanical, Aerospace and Civil Engineering.

Interviews are an integral part of our offer-making process. Well-qualified Home students will therefore be expected to attend a UCAS Visit Day for an interview. Interviews are held between November and March.



Course details

Mechanical Engineering BEng 3yrs
UCAS Code H300

**Mechanical Engineering with Management
BEng 3yrs**
UCAS Code H3N1

Mechanical Engineering MEng 4yrs
UCAS Code H303

**Mechanical Engineering with Management
MEng 4yrs**
UCAS Code H3ND

**Mechanical Engineering with Industrial
Experience MEng 5yrs**
UCAS Code H301

Civil Engineering BEng 3yrs
UCAS Code H200

Civil Engineering MEng 4yrs
UCAS Code H201

Civil and Structural Engineering MEng 4yrs
UCAS Code H220

Civil Engineering (Enterprise) MEng 4yrs
UCAS Code H204

**Civil Engineering with Industrial
Experience MEng 5yrs**
UCAS Code H207

Aerospace Engineering BEng 3yrs
UCAS Code H400

Aerospace Engineering MEng 4yrs
UCAS Code H402

**Aerospace Engineering with Management
MEng 4yrs**
UCAS Code H4ND

**Aerospace Engineering with Industrial
Experience MEng 5yrs**
UCAS Code H406

Entry requirements

BEng programmes

GCSE or equivalent

Five A-C grades, including English Language, Maths and Physics or Dual Science

GCE A-level / Unit Grades

AAB Maths (must contain some applied/mechanics elements) and preferably Physics or Further Maths

GCE AS-level acceptability

Two may be accepted in place of the third A-level

BTEC National Diploma

DDM and A-level Maths at grade A

14-19 Diploma

We accept an overall grade B in the Progression Diploma plus grade A in A-level Maths

Welsh Baccalaureate (including A-levels)

Pass and AB in Maths and Physics at A-level

Scottish Advanced Highers

AAB Maths and Physics

Irish Leaving Certificate

AAABB including AAB in Maths, Applied Maths and Physics at the Higher level

International Baccalaureate

Thirty-five points, including Maths and Physics at Higher Level

MEng programmes

GCSE or equivalent

Five A-C grades, including English Language, Maths and Physics or Dual Science

GCE A-level / Unit Grades

AAA Maths (must contain some applied/mechanics elements) and preferably Physics or Further Maths

GCE AS-level Acceptability

Two may be accepted in place of the third A-level

BTEC National Diploma

DDD and A-level Maths at grade A

14-19 Diploma

We accept an overall grade B in the Progression Diploma plus grade A in A-level Maths

Welsh Baccalaureate (including A-levels)

Pass and AA in Maths and Physics at A-level

Scottish Advanced Highers

AAA Maths and Physics

Irish Leaving Certificate

AAAAB including AAA in Maths, Applied Maths and Physics all at Higher Level

International Baccalaureate

Thirty-seven points including Maths and Physics at Higher Level

International qualifications

Please visit www.manchester.ac.uk/international for information on the individual country qualifications that we accept.

Other subjects

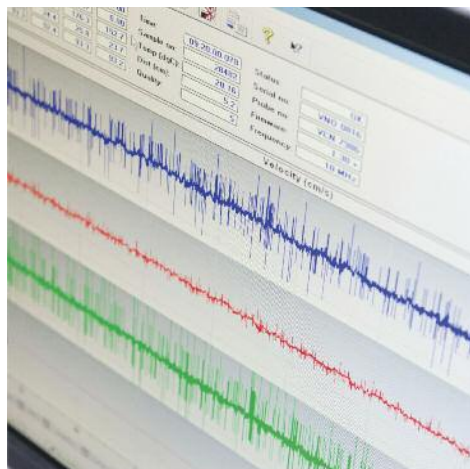
General Studies is welcomed, but will not form part of the standard offer.

English language requirement

TOEFL 550/220 computer based or 80 internet based with a minimum of 20 in each component.

Direct entry to the second year

If you have completed learning equivalent to our first year, you could be considered for direct entry to our second year. Each case is considered individually. In order to be considered for second year direct entry, please email transcripts of all coursework, exam results and pre-university qualifications (if applicable) to ug-mace@manchester.ac.uk.



Mechanical, Aerospace and Civil Engineering at Manchester

MEng or BEng?

We offer a range of degree courses at both MEng (Master of Engineering) or BEng (Bachelor of Engineering) level. The most obvious difference between these is duration: four or five years for MEng, and three years for BEng. Transfer between BEng and MEng is possible and subject to satisfactory progress. The first three years cover most of the engineering science whereas the fourth year looks in more depth at particular applications. But what else could influence your choice?

Many students studying for a degree in engineering aim to become Chartered Engineers, and accredited MEng courses give you the required educational base to achieve this. Accredited BEng courses require you to complete further study in order to achieve the same status. This could take the form of full or part-time postgraduate study, distance learning, or work-based learning.

Professional accreditation

Our courses are accredited by the following relevant professional bodies:

- Institution of Civil Engineers (ICE)
- IMechE
- Institution of Structural Engineers (IStructE)
- Royal Aeronautical Society (RAeS)



Teaching and learning

What teaching methods do we use?

Course unit structures may comprise:

- Lectures
- Tutorial and/or example classes
- Laboratory work
- Studio design work

Lectures

These are fundamental to our teaching process. We provide course notes in both printed and electronic format, the latter via our e-learning system. Your lecturers deliver material using a range of teaching media, such as PowerPoint, black/white boards, video and demonstrations. You will need to take notes to supplement those provided by the lecturer and you are encouraged to ask questions during lectures. There is usually time at the end of lectures to talk to the lecturer directly, or possibly to arrange a meeting if further discussion is needed.

Example classes

These are interspersed with the lectures at appropriate points and help you to understand key topics. As with lectures, your entire class will be present as lecturers together with students, work through specific examples. You can have the chance to prepare for discussion, your own solutions before the class. Of course, you are encouraged to participate; asking questions in front of a large audience is an important skill for you to learn and become confident in.

'Clickers' may sometimes be used: this is an in-class voting system that enables students to respond to specific questions. Feedback from this system is used by lecturers to judge the level of understanding of the class.

Laboratory exercises

Lab classes are designed to give students hands-on experience of practical work as well as to emphasise the material covered in the course.

Personal tutorials

You will meet your personal tutor on a weekly basis in a tutor group of no more than six students. These sessions will cover a mixture of transferable skills, pastoral care and specific help on material covered in lectures.

Project work

This runs through all years of your course.

A substantial feature of your third year is the individual research project, which allows you to show innovation and application of the knowledge and techniques you have learned.

In your fourth year, you will work on a team design project with four or five other students and academic and industry tutors.

We also use online resources, computational labs and demonstrations.

What ICE says

During your study of Civil Engineering (or a related topic) you will be given information about professional qualifications of Chartered and Incorporated Engineers through ICE. ICE offers guidance and support during your academic study on how to become professionally qualified later in your career and the steps you should take during your academic study.

The University of Manchester maintains close links with ICE. You should take full advantage of any talks or meetings arranged by ICE as they will help in areas such as networking and your CV.

You should also take advantage of the free student membership of ICE by joining on line at www.ice.org.uk/students. If you require more information about ICE in the North West please contact icecube@ice.org.uk



Mechanical, Aerospace and Civil Engineering at Manchester

Aerospace Engineering

Aerospace engineers are involved in every part of the design, development, testing and operation of aerospace vehicles and systems.

The aerospace industry offers exciting career opportunities at the forefront of new technologies. It is the largest industry in the UK manufacturing sector and serves the global economy. Major aerospace projects are massive in scale and involve international partnerships across a range of products from large commercial airliners, next-generation military aircraft, satellites, launch vehicles and interplanetary probes. There is also an emerging market for smaller UAVs developed by smaller, agile start-up companies.

What will you study?

We offer a range of innovative degree courses in aerospace engineering that are supported by excellent computational and experimental facilities. All courses have been developed in consultation with industry. This ensures that they cover the fundamentals, as well as the key aerospace disciplines that are relevant to graduate careers and cutting-edge research.

Particular strengths of a Manchester aerospace engineer are team working, creativity and adaptability. This stems from the breadth of education and the range of enquiry-based learning that you receive.

Core degrees are the three-year BEng and the four-year MEng in Aerospace Engineering. There are MEng courses for students who wish to gain industrial experience or study more management.

The first year of study establishes a strategic overview of the main areas of aerospace engineering and introduces you to underlying science and mathematics. The second and third years develop the key technical knowledge and understanding that you need for entry into industry or postgraduate study. For MEng students, the fourth year provides specialisation in advanced engineering and consolidates practical experience via an advanced aerospace design project.

Throughout all years at Manchester, there is a strong focus on the attainment of transferable skills, such as analysis, design, modelling, organisation and problem-solving. This enables you to pursue careers in a range of high technology fields after graduation, as engineers, consultants, managers, or researchers.

For more information about course content see: www.manchester.ac.uk/mace. These may not be the exact units on offer for current entry as we endeavour to ensure the contents of our courses reflects the latest research and industrial developments, to ensure our graduates have the most appropriate skill set to prepare them for their future careers.

Courses in Aerospace Engineering

MEng (Hons) Aerospace Engineering

MEng (Hons) Aerospace Engineering with Management

MEng (Hons) Aerospace Engineering with Industrial Experience

BEng (Hons) Aerospace Engineering

Project work and enquiry-based learning

A wide range of project-based and enquiry-based tasks are set over the duration of our courses. These are intended to develop different aspects of individual learning, set on the principle that students learn better by 'doing' than by just listening or watching. There are two main approaches, namely group-centric and student-centric, which address the needs to cooperate and collaborate with others, and to exhibit self-motivation and professional commitment, respectively.



Students who enrol on to this course are eligible to become Student Affiliates of the Royal Aeronautical Society.



ROYAL
AERONAUTICAL
SOCIETY

Civil Engineering

Civil engineering is about creating, improving and protecting the environment in which we live. Civil engineers are responsible for the design, project management and construction of everything in the built environment – bridges, roads, canals, hospitals, schools, airports, power stations, water supply, cleaning dirty water, railways, etc. Civil engineers are very much concerned with environmental and sustainability issues in flooding, renewable energy and regeneration, in nuclear waste disposal, sewage treatment and pollution generally.

What will you study?

A course in civil engineering is vocational and provides the academic base for a professional career in the planning, design, construction and management of major projects. The skills learnt in our Civil Engineering courses produce an ability to analyse and solve complex problems by a rigorous approach and to communicate the results effectively. The degree leads to many other career opportunities; our graduates are in demand from all sectors of industry, professions, commerce and public services.

We aim to teach you to aspire to succeed in life not just in work, but also as a person who cares about others and the environment in which we all live.

Civil and structural engineers work on the design and construction of buildings, energy systems, bridges, transport systems, dams, tunnels, docks and harbours. They supply water and fuel and provide the infrastructure to clean up the waste products of our society.

They use scientific disciplines such as mathematics, physics, chemistry, geology, metallurgy and applied mechanics. They communicate by calculations, quantities, specifications, drawings, letters, reports and making technical and commercial presentations. They plan, budget, estimate and control finances, and work and interact with many people from other trades, professions and businesses.

All our Civil and Structural Engineering courses have a compulsory field course, currently in Year 2, in the English Lake District. There is an additional cost associated with the field course and you will be notified of this well in advance.

For more information about course content see: www.manchester.ac.uk/mace. These may not be the exact units offered for current entry as we endeavour to ensure the content of our courses reflects the latest research and industrial developments, to ensure our graduates have the most appropriate skill set to prepare them for their future careers.



'Civil Engineering' was originally the term used for engineering that did not have any military applications. Today it is one of the base disciplines of the construction industry.

The world can only support one billion people. The fact that it is supporting almost seven billion is in part due to the resilience of nature, in part due to civil engineering.

David Bellamy



Mechanical, Aerospace and Civil Engineering at Manchester

Courses in Civil Engineering

MEng (Hons) Civil Engineering

MEng (Hons) Civil and Structural Engineering

MEng (Hons) Civil Engineering (Enterprise)

MEng (Hons) Civil Engineering with Industrial Experience

BEng (Hons) Civil Engineering

The first and second years are common with those of the MEng course in Civil Engineering. Subject to satisfactory performance, it is possible to transfer to one of the MEng courses.



Mechanical Engineering

Mechanical engineering is a broad discipline that has a strong impact on our everyday life. Automobiles, jet engines, trains, ships, power stations, water-supply pumps, air-conditioning equipment, home appliances, life-saving medical equipment and implants, and machines of all conceivable shapes, sizes and complexity are all created by mechanical engineers.

The economic impact of mechanical engineering is enormous and there is no major economy that does not have a dynamic and vibrant mechanical engineering industry. It is a highly challenging topic to study that stretches students of the highest intellect.

A professional mechanical engineer needs a sound understanding of the engineering science, strong analytical skills, practical judgement, creativity and the ability to work with and manage people.

What will you study?

Our Mechanical Engineering courses aim to produce graduates that are highly valued by employers. The courses are delivered in a variety of teaching styles that reflect the diversity of topics covered in modern mechanical engineering and also the range of skills and expertise that a professional engineer must develop.

In addition to the main mechanical engineering degree courses, the School offers courses in mechanical engineering combined with management, and mechanical engineering with a year's industrial experience. There is commonality across these courses, especially in years one and two, so transfer between courses is possible.

For more information about course content please see: www.manchester.ac.uk/mace. These may not be the exact units offered for current entry, as we endeavour to ensure the content of our courses reflect the latest research and industry developments, to ensure our graduates have the most appropriate skill-set to prepare them for future careers.

Degree courses in Mechanical Engineering

MEng (Hons) Mechanical Engineering

MEng (Hons) Mechanical Engineering with Management

MEng (Hons) Mechanical Engineering with Industrial Experience

BEng (Hons) Mechanical Engineering / Mechanical Engineering with Management



Akinola Afolabi
MEng (Hons)
Mechanical Engineering 2011
Graduate Design Engineer
Cameron International



What is your current role?

I am currently a design engineer on Cameron International's rotational engineering programme. The programme is split into five placements based in our Leeds plant, each lasting three months, working in different product groups, from engineering to production, followed by two overseas placements in Germany and the US to meet key personnel and get a feel of the global Cameron products and brand.

Day-to-day roles include creating 3D models and 2D detail drawings, engineering procedures, bills of materials, design files, new engineering initiatives and product development. I have gained contacts in most areas of the business, including Engineering, Quality, Purchasing, Aftermarket, Project Management and Production.

How has your career progressed since graduation? What was your first role and how did you secure that position?

Straight after graduation I took up a four-month project internship at a small engineering firm just outside Manchester. After coming across my CV on a job website, they invited me to interview and offered me the position few days later. Even though this wasn't my chosen career path, I realised I would get opportunity to work in an engineering environment where I could develop and apply the knowledge gained during my study at Manchester.

I first heard of my current employer, Cameron International, at a graduate recruitment fair in Manchester. Their graduate rotational development programme sounded like a great opportunity, with the chance to develop in different areas and learn a variety of skills. First I submitted my CV and answered few competency questions online. The second stage was a telephone interview. Finally, there was an assessment day, which consisted of a face-to-face interview, psychometric testing, group tasks and a plant tour.

How has your qualification helped you in your career?

My degree gave me a great insight into the development and enactment of creative ideas, and the theoretical and practical knowledge which forms the foundation of what I do in my current job. The presentation and influencing skills I gained are developing into effective management skills. In addition my roles as a peer mentor and student ambassador at the University have contributed to my teamwork, interpersonal, organisation and communication skills.

What advice would you give to someone thinking of pursuing a similar career route? What skills/experience are necessary?

It's beneficial to gain some industrial experience during study to help you choose the right career path, gain insight into what engineering involves in the real world and improve your chances of getting a job right after study. Experience and determination play a significant role when applying for any job so always try to identify your key competencies in areas such as engineering knowledge, teamwork, problem awareness and solving, presentations, and communication. These skills and competencies form the basic groundwork to a successful engineer.

What did you most enjoy about your time at Manchester?

University life proved to be rewarding as well as challenging. I had the opportunity to work and interact with students from different backgrounds. This helped me to improve my teamwork and interpersonal relations. I also enjoyed working as a student ambassador; this role gave me the chance to develop myself as an individual and a community member.



Alumni profiles



Sara Abdulla
BA (Hons) Architecture
and MSc Management of Projects
Architect
Salah Al Kooheji Consultancy



Please summarise your career progression since graduation and detail your first relevant role in the area in which you work now and how you secured that position.

After graduating from the University in 2010, I worked as an architect and took part in a project management team on several prominent projects in Bahrain for a year. I worked in a small firm, which guaranteed a greater responsibility on projects I took part in. Securing the position, in my opinion, was greatly influenced by having confidence in what I do, especially with working in project teams of much more experienced colleagues than myself.

How has your degree helped you in your career?

My degree helped in terms of getting to know the architecture profession well, and the way our studio time was structured was very much similar to the real world, so I can safely say I was well equipped for what I was about to get myself into. In terms of personal skills, my degree helped me with confidence building, proposing and selling innovative ideas and designs, and dealing with criticism.

What is your greatest achievement to date?

I don't think I could name an achievement per se, but to me, last year as a whole was an achievement. Playing a prominent role in the firm, simultaneously pursuing my studies in a PGCert in Quantity Surveying and Financial Management, and

establishing with a group of friends For Bahrain, a very successful charity organisation to provide for the less fortunate in Bahrain.

What advice would you give to someone thinking of pursuing a similar career route and what skills/experience do you consider to be necessary?

Take initiative in learning, innovating, etc. Being the youngest and least experienced in the workplace doesn't mean you don't have anything new to bring to the table. In fact, all workplaces are looking for new, fresh ideas and employees.

What did you most enjoy about your time at Manchester?

The University was an experience in itself, the Library, the city so full of life. Manchester has so much to offer for students; everyday is an adventure.

Why would you recommend the University as a good place to study?

Manchester is one of the most prestigious universities in the UK and Europe; it gives you the ultimate 'student experience'. It has such a huge network of social and professional organisations, giving students opportunities to get involved in absolutely anything. Last but not least, the University is a melting pot of so many ages, races and cultures. Students should definitely take advantage.





Vincent J Mulgrew
BEng(Hons) Mechanical Engineering 2008
Process Engineer
Jaguar Cars Ltd



What is your current role and your main responsibilities?

I work in delivery of Jaguar Land Rover (JLR) engineered-to-order products from their Halewood and special vehicles workshop. This involves the leadership of suppliers, designers, production operatives and dealer network to ensure premium customer expectations are met when choosing a JLR product.

Please summarise your overall career since graduation, but in particular, what was your first relevant role to the area in which you work now and how did you secure that position?

I graduated in May 2008, then started at JLR the following September as a paint shop production engineer. I have been in my current role since July 2011.

How has your qualification helped you in your career?

The mechanical engineering and process elements of my course helped with the role in paint shop; my fluid mechanics and manufacturing dissertation gave me a good submersion in the basics of manufacturing projects. I also volunteered on the Manchester Leadership Programme, which gave me an excellent insight into what makes a leader. This has been crucial to my current role within JLR as a launch leader. The prestige of The University of Manchester also impresses employers.

What is your greatest achievement to date?

The launch of Range Rover Evoque in July 2011. I developed a significant part of the product and it's fantastic to see these vehicles on the road 12 months later.

What advice would you give to someone thinking of pursuing a similar career route and what skills/experience do you consider to be necessary?

Complete every task to the best of your ability, always look to be developing yourself and take on tasks that move you out of your comfort zone.

What did you most enjoy about your time at Manchester?

It's a great city with great students, and the University has some very influential lecturers.

Why would you recommend the University as a good place to study?

There is a good student network and sense of community, and a campus that encourages you to assist and coach others.



Find out more online



Accommodation

Discover your new home:

www.manchester.ac.uk/accommodation

Admissions and applications

Everything you need to apply:

www.manchester.ac.uk/ug/howtoapply

Alan Gilbert Learning Commons

Take a look around our 24/7,
independent learning space:

www.manchester.ac.uk/library/learningcommons

Careers

Take control of your career:

www.manchester.ac.uk/careers

IT Services

Online learning, computer access, IT support
and more:

www.manchester.ac.uk/itservices

Library

We have one of the UK's largest and
best-resourced university libraries:

www.manchester.ac.uk/library

Maps

Find your way around our campus, city and
accommodation:

www.manchester.ac.uk/aboutus/travel/maps

Prospectus

Download or order a copy of our prospectus:

www.manchester.ac.uk/ug/courses/prospectus

Childcare

Balancing your studies with your caring
responsibilities:

www.manchester.ac.uk/childcare

Disability support

Talk to us about any support you need:

www.manchester.ac.uk/dso

Funding and finance

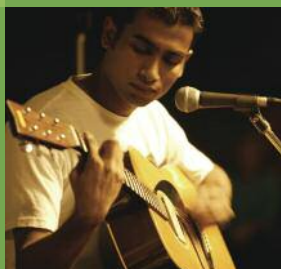
Get to grips with fees, loans, scholarships and more:

www.manchester.ac.uk/studentfinance

International students

Let us help you prepare for your time here:

www.manchester.ac.uk/international



Sport

Get active with our clubs, leagues, classes
and facilities:

www.manchester.ac.uk/sport

Support

Let us help with any academic, personal,
financial and administrative issues:

my.manchester.ac.uk/guest

Students' Union

Immerse yourself in societies, events,
campaigns and more:

manchesterstudentsunion.com

Videos

Learn more about us on our YouTube channel:

www.youtube.com/user/universitymanchester





Contact details



Disclaimer

This brochure is prepared well in advance of the academic year to which it relates. Consequently, details of courses may vary with staff changes. The University therefore reserves the right to make such alterations to courses as are found to be necessary. If the University makes an offer of a place, it is essential that you are aware of the current terms on which the offer is based. If you are in any doubt, please feel free to ask for confirmation of the precise position for the year in question, before you accept the offer.

For further information about our courses, or about qualifications, please contact us at:

Address

Student Recruitment and Admissions Office
School of Mechanical, Aerospace
and Civil Engineering
The University of Manchester
Pariser Building
Sackville Street
Manchester
M13 9PL
United Kingdom

tel +44 (0)161 306 9210

email ug-mace@manchester.ac.uk

All information is subject to change so, for the most up-to-date course information, please visit our website:

www.manchester.ac.uk/mace

School of Mechanical, Aerospace and Civil Engineering
The University of Manchester
Oxford Road
Manchester
M60 1QD
United Kingdom

tel +44 (0)161 306 9210
email ug-mace@manchester.ac.uk
www.manchester.ac.uk/mace

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