

MANCHESTER
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The University of Manchester

Mechanical Engineering

2017



School of Mechanical, Aerospace and Civil Engineering

Mechanical Engineering at Manchester

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Welcome from the Head of School

I am pleased to introduce you to the School of Mechanical, Aerospace and Civil Engineering and hope that you will enjoy finding out more about our undergraduate courses, our facilities, our students and the fantastic career opportunities a degree from The University of Manchester provides.

In this School we offer both BEng and MEng degrees and we have 14 different course options across the three disciplines, including courses with Management and with Industrial Experience, so there is something to suit everyone.

We are a friendly, vibrant community of staff and students who come from all over the world to work and study here. The School has outstanding laboratory facilities and our students get to work with world-leading academic staff who deliver teaching inspired by cutting edge research. We also have many student societies, clubs, sports teams and an award winning Peer Assisted Study Support (PASS) scheme which is run by our current students to support our first year undergraduates in their academic studies, and to help them settle in to life in Manchester.

I look forward to receiving your application and welcoming you to our School.



Prof Andy Gibson, Head of School

80%–90% of our graduates go on to work or study within 6 months

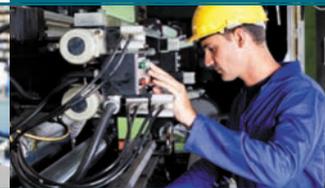
What is Mechanical Engineering?

If cogs, fast cars and rockets spring to mind, give yourself half a mark. Because mechanical engineering is so much more than that!

Mechanical engineering involves applying science and technology to solve real world problems, by designing and creating systems with moving parts. Mechanical engineers invent 3D printers,

Mechanical engineers are needed throughout the world, and almost every industry you can think of relies on mechanical engineering, that's why there's such a huge global demand for mechanical engineers, and why they're paid so well.

Mechanical engineers will find solutions to some of the world's biggest challenges



create prosthetic limbs, design new technology to improve food production and water supplies, and even create robotic manufacturing plants. And yes, Mechanical engineers do also make fast cars!



We rely on Mechanical engineers to find solutions to some of the biggest challenges we face, such as:

- How can we sustain and feed a growing population?
- Where will get our future energy from?
- How can we live more sustainably?
- When and how will we inhabit Mars?

Mechanical Engineering

Teaching and learning

Mechanical engineers are inventors who turn ideas into reality and we rely on them to use their engineering skills and knowledge to create innovative solutions to real world problems. Our courses are curiosity-driven and industry-inspired, so why not join us and help solve some of the world's biggest challenges!

first two years you will study subjects covering the wide variety of topics necessary in modern engineering. Years three and four build on this, through a mixture of core units and optional specialist subjects. During the third year you will undertake an individual project, supervised by a member of academic staff, whilst in year four of the MEng courses there is a substantial group design project.

upon favourably by employers and could give you that extra 'something' on your CV.

We offer both BEng and MEng Mechanical Engineering courses- our BEng course is three years in duration, whereas the MEng Integrated Masters courses include four years of study. All our courses provide great breadth and depth of study

Our Mechanical Engineering programmes produce graduates who are highly valued by employers, with a sound understanding of the engineering science, strong analytical skills, practical judgement, creativity and the ability to work with and manage people. The courses are delivered in a variety of teaching styles, reflecting the range of skills and expertise that a professional engineer must develop. In the

Our BEng and MEng courses share a common first two years which means you have the freedom to switch between courses up to the end of your second year depending on academic performance.

We offer courses with an integrated year in industry, giving our students practical, hands-on experience in the work place. Having work experience is looked

and prepare graduates for a professional career in industry, further research, engineering design and management of major engineering projects.

Mechanical engineers are the inventors who turn ideas into reality

Accreditation

All our Mechanical Engineering courses are accredited by the Institution of Mechanical Engineers which means that your Mechanical Engineering degree from The University of Manchester can be used to apply for Chartered Engineer status. Chartered Engineer CEng is the highest professional qualification for engineers. The qualification process to become a professional Chartered Engineer has three stages:

Stage 1: The Educational Base (accredited MEng, or accredited BEng with MSc);

Stage 2: Initial Professional Development;

Stage 3: A Professional Review;

In order to apply for chartered engineer status, you must hold an accredited degree to Master's level—therefore graduates with an MEng degree fulfil the academic requirements to apply for CEng. Students who graduate with a BEng can then go on to take an accredited MSc course in order to fulfil the academic requirements to apply for CEng status.



Institution of
**MECHANICAL
ENGINEERS**



Engineering
Council
accredited degree

What our students say

Patrick Oliver Kroell

I had the opportunity to be part of the Peer Assisted Study Scheme (PASS) helping out new students who are unfamiliar with the course

Jad Zeidan

The school facilities available are outstanding and encourage students to carry out their own study with passion

Aneeqa Khan

I completed my Mechanical Engineering here and knew it had one of the best nuclear research departments in the world

Mechanical Engineering

Facilities

You will have access to extensive laboratory space and equipment for subjects such as Dynamics, Materials, Control and Robotics. You will also enjoy our excellent teaching facilities such as high-spec CAD cluster, workshop facilities and well-equipped lecture theatres and labs.

Our School also has a National Instruments lab which is equipped with excellent computer facilities allowing students to design, build and run robotics. Our courses are taught through a mix of lectures, tutorials, classes and laboratory sessions, which are supplemented by extensive online resources to help support your study. The web-based student portal will enable you to access the University's student services and information, while our online virtual learning environment will allow you access to your personal timetables, course materials, academic and social groups and much more.

The library is also full of excellent resources, many of which can be accessed online.

Support

All students are assigned an academic adviser—this is a designated member of staff who is here to offer help and guidance throughout your studies. You will be expected to participate in weekly tutorials with your tutor throughout your first year in small tutor groups, as well as one-to-one meetings twice per semester.

In addition to this, the School has a dedicated Student Welfare Officer who is available to support and help students with any issues or concerns they may have. The University also has a Student Support team who are based on Oxford Road to help with anything from academic advice to timetabling and project submission enquiries.



Careers and employability

As the field of engineering is wide and varied, engineers are valued for their transferable skills and therefore the career opportunities for our graduates are also very diverse. From the conception of new ideas, planning and maintenance, or the managing of complex products and constructions, engineering is an exciting profession, and one in which an individual can take pride.

Top-rated for graduate employment, and 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 only the theory behind mechanical, aerospace or civil engineering, but also the skills to put theory into practice. The spectrum of jobs our graduates enter includes consultancy, construction, design,

Our graduates continue into exciting careers in the automotive industry, in biomechanics, manufacturing, as well as going on to further study or research. 33% of the world's most successful companies have a leader with a background in engineering (Microsoft, Amazon and General Motors).

manufacturing, management, and many others.

You could help solve some of the biggest global challenges facing humanity, like climate change, cyber security, ageing populations, food, clean water and energy. Or you could create an invention that changes the world.

Funding

A range of scholarships and bursaries are available or students who choose to study Civil Engineering at The University of Manchester. Several industrial scholarships are also available once you have started your course.

Further details available from:
<http://man.ac.uk/d92Nny>
and,
<http://man.ac.uk/BA5i7>

Dr Robert Heinemann

Our links with industry are strong; which means that students have the chance to get involved in industry relevant research at a very early stage

Prof Paul Mativenga

We are an international centre of engineering education. As a large School, we are close to a one-stop-shop for someone searching for engineering experts

Dr Andy Weightman

I think the most important thing is to make the course interesting and show the relevance of what we are studying in an industrial context

Our courses

Mechanical Engineering

Mechanical Engineering BEng	3 yrs	UCAS code H300
Mechanical Engineering with Management BEng	3 yrs	UCAS code H3N1
Mechanical Engineering MEng	4 yrs	UCAS code H303
Mechanical Engineering with Management MEng	4 yrs	UCAS code H3ND
Mechanical Engineering with Industrial Experience MEng	5 yrs	UCAS code H301

Mechanical Engineering (MEng, BEng)

Our Mechanical Engineering courses give students an excellent grounding in the knowledge of this diverse subject and students gain the skills required to become successful engineers. The course helps to develop strong analytical and problem-solving skills as well as a high level of competence in engineering design. We offer a range of core and optional course units which cover both the theoretical and practical aspects of industrially-relevant topics, which means that students can select units which suit their particular interests and align with their career aspirations.

The first two years of the BEng and MEng courses are the same, then in the third year students study BEng or MEng-specific content. The MEng course allows students to spend an additional year studying Mechanical Engineering and therefore they study more course units and can develop their skills and knowledge even further, which is reflected in the award of an Masters of Engineering (MEng).

Mechanical Engineering with Management (MEng, BEng)

Engineering is not just about technology. It is about people, companies, manufacturing and commerce. Engineering decisions must normally be made within a commercial context and engineers are often found in senior management positions where they are required to be leaders and strategic planners, as well as problem-solvers and designers. Therefore, we also offer our Mechanical Engineering courses with Management which are designed for those students wanting to gain a sound engineering background, coupled with specialism in business, finance and project management.

Mechanical Engineering with Industrial Experience (MEng)

We have strong links with a wide variety of companies, across many engineering sectors, and our Industrial Liaison Panels enable us to ensure our courses remain up-to-date with the current needs of industry.

For those wanting to undertake an industrial placement as part of their course, we offer MEng course with Industrial Experience. The academic content is the same as the 4 year MEng programme, and students will spend one year gaining practical experience in industry.

Example course units for Year 1

Semester one

Design 1
Exploring Enterprise (with Enterprise)
Fluid Mechanics
Mathematics 1M1
Mechanical Engineering Systems
Structures
Tools for Engineers

Semester two

Electrical Energy Supply & Circuits
Manufacturing Engineering 1
Materials 1
Mathematics 1M2
Mechanics 1
Thermodynamics

Entry requirements

BEng Programmes

GCE A Level/Unit Grades AAB in any order, in Mathematics and Physics and one other subject. We accept all subjects as the third A level, apart from General Studies. We can consider applications from students who are taking Mathematics A level but not Physics, provided they are studying the mechanical modules M1 and M2 in their Mathematics A level.

Please note that if students are taking the newly reformed Physics A level, we will require them to pass the practical assessment included in the A level

BTEC Diploma Grade A at A Level Maths plus the BTEC Standard or Extended Diploma with a minimum of 60 credits awarded at Distinction, 50 credits at Merit and 10 credits at Pass or above

Welsh Baccalaureate Grades AAB including Maths and Physics. WB core will be considered in place of third A level

Scottish Advanced Higher Grades AAB including Maths and Physics

Irish Leaving Certificate Obtain grades of AABBB at Higher/Honours level in the Irish Leaving Certificate, with grades AAA in Mathematics, Physics and Applied Mathematics

International Baccalaureate 35 points overall with 6 in Maths and Physics, both at Higher Level, and 5 in English at Standard level

MEng Programmes

GCE A Level AAA in Mathematics and Physics and one other subject. We accept all subjects as the third A level, apart from General Studies. We can consider applications from students who are taking Mathematics A level but not Physics, provided they are studying the mechanical modules M1 and M2 in their Mathematics A level.

Please note that if students are taking the newly reformed Physics A level, we will require them to pass the practical assessment included in the A level.

BTEC Diploma Grade A at A Level Maths plus the BTEC Standard or Extended Diploma with a minimum of 100 credits awarded at Distinction and 20 credits at Merit

Welsh Baccalaureate Grades AAA including Maths and Physics. WB core will be considered in place of third A level

Scottish Advanced Higher Grades AAA including Maths and Physics

Irish Leaving Certificate Obtain grades of AAABB at Higher/Honours level in the Irish Leaving Certificate, with grades AAA in Mathematics, Physics and Applied Mathematics

International Baccalaureate 37 points overall with 6 in Maths and Physics, both at Higher Level, and 5 in English at Standard level

English qualifications

GCSE or equivalent	Five A-C Grades, including English language, Maths and Physics or Dual Science (We require Grade 4 or above for applicants holding newly reformed GCSEs in England)
IELTS	Overall score of 6 with no component less than 5.5
TOEFL	80 overall with a minimum of 20 in each component



For alternative English qualifications please visit:

www.manchester.ac.uk/mace

How to apply

Applications are made via UCAS www.ucas.com . Application deadline, 15th January.

If you are living in the UK and receive an offer from us, you will be invited to attend a UCAS Visit Day where you will participate in a subject-specific activity. These take place on Wednesday afternoons between November – March.

If you are not able to visit us in person we would encourage you to see our Virtual Open Day to take an online tour around our school <http://man.ac.uk/D49zHt>

Students experience

The University of Manchester is committed to helping you have the best possible student experience throughout your degree, and the School of MACE has a dedicated Student Experience Team with this as their aim. We organise a variety of events throughout the year for students, ranging from quizzes to football tournaments, pizza nights to a summer BBQ. We also keep our students up to date with regular newsletters and via our social media channels, and regularly work in conjunction with the Careers Service to provide you with a wide range of employability events, information and opportunities.

Clubs and societies run by MACE students also organise a range of social functions, as well as an annual careers fair, competitions and sports events.

Societies Mechanical engineering students would generally become members of the Mechanical Engineering Society, which is a student-led society who arrange relevant site visits and industrial speakers as well as social events. Many other active student societies are run in the School by students, for example: the UAV Society, Robotics Society, Formula Student team, Engineers without Borders, as well as Civil and Construction Society, Aerospace Society for our other engineering students.

Sports The University of Manchester provides all students with the opportunity to take part in a huge range of sports, and MACE in particular has a number of sports teams including rugby, netball and football.

Peer-Assisted Support Scheme (PASS) PASS is a student led, student owned scheme, with the purpose of helping first year students with both their academic studies and settling into Manchester. Higher year students are trained as PASS leaders each year to run PASS sessions for first year students. PASS groups meet once a week, giving students the opportunity to ask questions about their course, cover any coursework or tutorial sheets, raise queries about exams, or ask questions about Manchester or the University more generally.



The University of Manchester

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