H100: General Engineering

Undergraduate MEng 2019

Essentials

UCAS code	H100
Degree	MEng
Professional accreditation	This programme is accredited on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer, depending on the specialism chosen in Level 4.
Mode of study	Full Time
Duration	4 years
Location	Durham City (www.durham.ac.uk/study/location/durham.city)
A-Level	A*AA
BTEC	D*DD
International Baccalaureate	38
Alternative qualifications	• Other UK qualifications (www.dur.ac.uk/resources/undergraduate/UKequivalencies2017-18.pdf) • EU qualifications (www.dur.ac.uk/resources/undergraduate/apply/EUequivalencies2017-18.pdf) • International qualifications (www.dur.ac.uk/international/country.information/)
Contextual Offers	You may be eligible for an offer which is one or two grades lower than our standard entry requirements. Find out more (www.durham.ac.uk/study/ug/apply/contextualoffers/).
More information	Still have questions? (www.durham.ac.uk/study/askus/)
Department(s) Website	www.durham.ac.uk/engineering

Course Summary

Description

The Master of Engineering degree is a four-year first degree that delivers the breadth and depth that you will need in the world of engineering. It is designed to produce graduates who will go on and lead engineering teams. Your first two years offer you a broad-based engineering education. You are then able to specialise in your third and fourth years.

At Durham in each year of your degree you will take six modules, the year is divided into three terms and there are examinations at the end of each year.

Year 1

You will study four modules in engineering, one in mathematics and one optional module. In your engineering modules, you will receive instruction in the use of 3D CAD software (e.g. SolidWorks) using our computer lab, be taught how to program a computer and take part in a number of practical labs. You will also take part in a group design activity where you have to design, build and test a device. Recent examples include a spring powered dragster and a miniature hydro-electric plant. On the course, you also attend lectures, problem classes and supervisions with academic staff.

Compulsory modules

- Applied Mechanics I
- Electromagnetism and Manufacture
- Thermodynamics and Fluid Mechanics I
- Electronic Measurement
- Mathematics for Engineers and Scientists

And one free elective

The optional (free elective) module may be selected from anything that will fit the timetable and for which you meet the necessary prerequisites. Popular choices in the past have included ‘Introduction to Programming’, ‘Computational Thinking’ and a range of different language modules, but some students have taken modules in History or Poetry.

Year 2

Engineering and mathematics now occupy the full six modules in the timetable.

You will undertake a major design project as part of a small team with guidance from an academic supervisor and an ‘Industrial Tutor’, an engineer from industry. This lets you put into practice the skills you have picked up in the various lecture courses. The end result is usually a series of electronic drawings good enough to manufacture a device from.

Compulsory modules

- Engineering Mathematics 2
- Thermodynamics and Fluid Mechanics 2
- Mechanics 2
- Electrical Engineering 2
- Electronics 2
- Engineering Design 2

Year 3

The course splits into the following streams: Electronic, Mechanical, Electrical and Civil Engineering.

A major team design project now occupies a whole module of the course where you consider the device as a product and do everything from basic market research to design for manufacture. For the Civil stream you undertake a major design exercise providing an understanding of the principles of structural elements in structural steelwork and reinforced concrete. Practical modules cover topics such as surveying, industrial problem solving with interaction with local industry and robotics projects.

The modules for each stream comprise:

Electronic Engineering

Compulsory modules

- Electrical Engineering 3
- Engineering Design 3
- Control and Signal Processing 3
- Electronics and Communications 3
- Advanced Computer Systems and Digital Electronics 3
- Semiconductor Physics and Devices 3

Mechanical and Electrical Engineering

Compulsory modules

- Materials 3
- Applied Mechanics 3
- Thermodynamics and Fluid Mechanics 3
- Electrical Engineering 3
- Engineering Design 3
- Control and Signal Processing 3

Civil Engineering

Compulsory modules

- Structures and Geomatics 3
- Geotechnics 3
- Environmental Engineering 3
- Civil Design 3
- Materials 3
- Applied Mechanics 3

In line with our integrated approach to engineering many of the modules taken in the third year are found in more than one stream.

Year 4

The highlight of the degree is the final year project. This activity, which is half the year in most streams, involves working closely with a supervisor on an area of cutting-edge research and development. The best student projects have been featured in internationally recognised engineering journals, indicating that our students are amongst the finest young engineers in the world. In addition, you will sit modules on advanced engineering.

The five final-year streams are Civil Engineering, Mechanical Engineering, Aeronautics, Electronic Engineering, and New and Renewable Energy. The modules for each stream are shown below, you will typically study three taught modules and the balance of work is project-based.

Aeronautics

Compulsory modules

- MEng Research and Development Project (or MEng Technical Project and Engineering into Schools)
- Fluid Mechanics and Turbomachinery
- Applied Mechanics 4
- Aeromechanics

Civil Engineering

Compulsory modules

- MEng Research and Development Project (or MEng Technical Project and Engineering into Schools)
- Applied Mechanics 4
- Structures, Highways and Construction 4
- Advanced Geotechnical Engineering and Hydrology

Electronic Engineering

Compulsory modules

- MEng Research and Development Project (or MEng Technical Project and Engineering into Schools)
- DSP and Microwave Engineering
- Communication Systems

- Advanced Semiconductor Devices

Mechanical Engineering

Compulsory modules

- MEng Research and Development Project (or MEng Technical Project and Engineering into Schools)
- Applied Mechanics 4
- Fluid Mechanics and Turbomachinery
- Low Carbon Technologies

New and Renewable Energy

Compulsory modules

- MEng Research and Development Project (or MEng Technical Project and Engineering into Schools)
- Energy Conversion and Delivery
- Low Carbon Technologies
- Applied Mechanics

We review course structures and core content (in light of e.g. external and student feedback) every year, and will publish finalised core requirements for 2019 entry from September 2018.

Study Abroad

Engineering is an increasingly international discipline and living and working in another country is a valuable addition to your CV. For this reason, students are encouraged to apply during their degree for a year-long placement with one of the Engineering Department's or the University's international partners, as an additional year of study. Students may study in English at some of the partner universities, whereas at others foreign language skills are essential. Students are fully supported by the Department both during the application process and during the year abroad. Language tuition is available in the first year in a range of languages as free elective modules and in other years through the University's Languages For All scheme.

Placement Year

You may be able to take a work placement. Find out more (www.durham.ac.uk/placements/).

Course Detail

To find out more about the modules available to students studying at Durham University please click here (www.durham.ac.uk/resources/faculty.handbook/degrees/frameworks/h100.pdf).

Please note: Current modules are indicative. Information for future academic years may change, for example, due to developments in the relevant academic field, or in light of student feedback.

Admissions Process

Subject requirements, level and grade

In addition to satisfying the University's general entry requirements, please note:

- We welcome applications from those with other qualifications equivalent to our standard entry requirements and from mature students with non-standard qualifications or who may have had a break in their study
- Mathematics and Physics at A level or the equivalent are required for all courses
- We do not include General Studies or Critical Thinking as part of our offer
- We do not accept two AS levels in place of one A level
- Typical IB score 38 to include 666 in higher level subjects. Higher level grade 6 in Mathematics and Physics is required
- If you do not satisfy our general entry requirements, the Foundation Centre offers multidisciplinary degrees to prepare you for a range of specified degree courses.
- If you are an international student who does not meet the requirements for direct entry to this degree, you may be eligible to take an International Foundation Year pathway programme at the Durham University International Study Centre (www.durhamisc.com/?ch=uniweb&cc=signposting&cid=uniweb&utm_source=signposting&utm_medium=signposting&utm_campaign=uni
- Please consult the University website for required evidence of English language proficiency.
- We are pleased to consider applications for deferred entry.

Science A levels

Applicants taking Science A levels that include a practical component will be required to take and pass this as a condition of entry. This applies only to applicants sitting A levels with an English examination board.

English Language requirements

Please check requirements for your subject and level of study (www.durham.ac.uk/learningandteaching.handbook/1/3/3/) .

How to apply

www.durham.ac.uk/undergraduate/apply

Information relevant to your country

www.durham.ac.uk/international/country.information/

Fees and Funding

Full Time Fees

EU Student	£9,250.00 per year
Home Student	£9,250.00 per year
Island Student	£9,250.00 per year
International non-EU Student	£24,300.00 per year

The tuition fees shown for **home and EU** students are for one complete academic year of full time study and are set according to the academic year of entry. Fees for subsequent years of your course may rise in line with an inflationary uplift as determined by the government.

The tuition fees shown for **overseas** students are for one complete academic year of full time study, are set according to the academic year of entry, and remain the same throughout the duration of the programme for that cohort **(unless otherwise stated)**.

Please also check costs for colleges and accommodation (www.durham.ac.uk/undergraduate/accommodation/costs/).

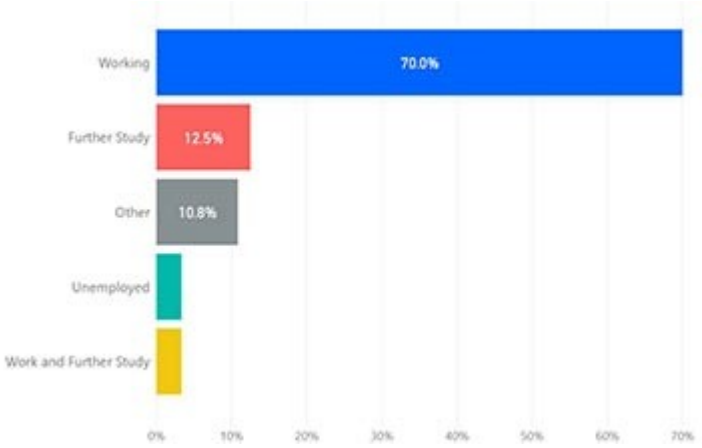
Scholarships and funding

www.durham.ac.uk/undergraduate/finance

Career Opportunities

Department of Engineering

The Department of Engineering runs degree programmes that produce talented graduates with strong academic and scientific competences, aligned to the needs of industry on a local, national and global level.



The Department is amongst a small number of general engineering departments in the UK. Engineering is viewed as an integrated subject and students are given opportunities to develop a diverse technical grounding during their degree courses. We believe this overarching understanding of engineering and how engineers work together, not only provides wider knowledge but also equips graduates to be leaders in their fields.

The Department is closely linked to many industrial partners for both teaching and research purposes, which ensures that graduates are best placed to apply their learning on entry to the working environment.

Work Experience

We have a close working relationship with the University's Careers, Employability and Enterprise Centre (CEEC) (www.durham.ac.uk/careers/) and a dedicated Academic Careers Contact for Engineering. Work experience and placement opportunities are advertised to the students both via the CEEC resources and internally within the Department on our DUO pages. The following activities take place within the Department each year to advertise work placement and graduate recruitment opportunities:

- multi-employer careers fairs
- company graduate
- internship
- placement recruitment presentations

On average there are 10 companies per year that visit for individual presentations, plus the Careers Service provide advisory talks to penultimate year students and mock interviews.

Our students also benefit from an active Industrial Partnership Committee which currently has representation from approximately 20 local and national and international companies, with the Committee forming a direct link between the Department and employers. Its objectives include ensuring that students are given the best possible opportunities in terms of industrial placements and graduate employment.

Professional accrediation

We offer eight 4-year MEng, plus one 3-year BEng, undergraduate degree courses in Engineering. These engineering degrees are fully accredited by:

- The Institution of Civil Engineers

- The Institution of Structural Engineers
- The Institution of Engineering and Technology
- The Institution of Mechanical Engineers.

The MEng programmes satisfy the academic base for a Chartered Engineer under the provisions of UK-SPEC. The BEng programme partially fulfils these requirements.

Open days and visits

Pre-application open day

Pre-application open days are the best way to discover all you need to know about Durham University. With representatives from all relevant academic and support service departments, and opportunities to explore college options, the open days provide our prospective undergraduates with the full experience of Durham University.

Please see the following page for further details and information on how to book a place:
www.durham.ac.uk/opendays

Discover Durham Tours

Discover Durham tours offer a brief introduction to the University. The tour begins at one of our undergraduate colleges, where you will receive an introductory talk from a member of college staff, followed by a tour of the college by current students.

www.durham.ac.uk/undergraduate/live/visit/discoverdurham

Overseas Visit Schedule

www.durham.ac.uk/international/office/meetus

Department Information

Department of Engineering

Overview

Our modern engineers are capable of solving the problems of the twenty-first century, bridging the traditional engineering disciplines; from fly-by-wire aircraft to mechanical devices manufactured on a microchip. You will undertake a common first two years, which allow you to make an informed choice of specialism in your final year, while you can study at an overseas institution as an additional year between Levels 2 and 3. Currently, we have links with universities in Canada, Hong Kong, Singapore, Australia, Denmark, Germany and France. Our Engineering degrees are accredited by the relevant engineering institutions (for example, the Institution of Mechanical Engineers, the Institution of Engineering and Technology, the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation, and the Institute of Highway Engineers).

You will be taught by expert staff, who are all actively engaged in research at the frontiers of modern engineering analysis, design and practice. Their excitement and knowledge are brought into the undergraduate course through design projects, the final-year project and third- and fourth-year modules.

Rankings

- 5th in *The Complete University Guide 2018*
- 4th in *The Guardian University Guide 2018*.

Staff

For a current list of staff, please see the School's web pages (www.dur.ac.uk/ecs/people/).

Facilities

Each week in the first to third years you will do a laboratory class which involves three hours with a set experiment where you follow a lab script writing up the results as you go. We have made a conscious effort to use real pumps, electronics, beams, etc as this gives you a much better idea of how well analytic theory does (and does not) work. Lab classes cover everything from breaking reinforced concrete beams, to building electronic circuits, balancing rotating masses, operating a 1.8 litre diesel engine test bed or a supersonic wind tunnel. Students also make use of our extensive research facilities during their final-year projects.

Website

www.durham.ac.uk/engineering