Course Summary: May 24, 2025

Mechanical Engineering BEng Honours

- UCAS code: **H300**
- Full time
- 3 years

This accredited Mechanical Engineering degree will prepare you for a career overcoming the challenges modern-day engineers face.

You are currently viewing course information for entry year: **2025**

Next start date:

- September 2025

Tuition fees (Year 1)

- Home: **£9,535**
- International: **£29850**

Entry requirements and offers

- A-Level: **ABB**
- IB: **32 points**

View contextual offers

UCAS Institution name and code:

- NEWC / N21

Course overview

This three-year Mechanical Engineering degree focuses on developing your knowledge and skills across a wide range of mechanical engineering topics. You'll leave Newcastle University equipped with the abilities you need to succeed anywhere in engineering.

We work closely with industry so that your studies reflect the challenges engineers face in the real world. We ensure your practical, professional and academic skills continually develop through guest lectures, placement opportunities and interactions with the engineering industry through projects and visits.

You'll leave a confident engineer with expert knowledge, enhanced through team projects and studying in areas such as:

- electrical engineering
- engineering design and manufacturing
- engineering mathematics
- engineering operations

You'll build critical teamwork and leadership skills, which are valued by employers, through small team projects and individual engineering investigations.

BEng or MEng?

Both our BEng degree and specialist MEng degrees provide a pathway to becoming a Chartered Engineer. This is one of the most recognisable international engineering qualifications.

Our MEng degrees are a direct route to becoming a Chartered Engineer (CEng). You don't need to study any more qualifications after your degree to work towards chartered status.

Our three-year BEng degree can also lead to Chartered Engineer status. However, you'll need to complete further study, such as an approved master's degree.

Your course and study experience - disclaimers and terms and conditions
Please rest assured we make all reasonable efforts to provide you with the programmes, services and facilities described. However, it may be necessary to make changes due to significant disruption, for example in response to Covid-19.

View our Academic experience page, which gives information about your Newcastle University study experience for the academic year 2024-25.

See our terms and conditions and student complaints information, which gives details of circumstances that may lead to changes to programmes, modules or University services.

Additional information

This degree allows you to explore several engineering disciplines in year one. This flexible route is taught across Civil, Electrical & Electronic and Mechanical Engineering.

You'll gain an understanding of engineering in a multidisciplinary context. You'll develop diverse skills relevant to the needs of industry and today's global challenges.

After successfully completing Stage 1, you'll have the option of transferring on to one of the accredited Civil, Electrical & Electronic or Mechanical Engineering degrees. This is subject to the degree programme regulations and capacity of the degree you are transferring to.

Quality and ranking

Professional accreditation and recognition

All professional accreditations are reviewed regularly by their professional body.

Modules and learning

Modules

The information below is intended to provide an example of what you will study.

Most degrees are divided into stages. Each stage lasts for one academic year, and you'll complete modules totalling 120 credits by the end of each stage.

Our teaching is informed by research. Course content may change periodically to reflect developments in the discipline, the requirements of external bodies and partners, and student feedback.

Optional module availability
Student demand for optional modules may affect availability.

Full details of the modules on offer will be published through the Programme Regulations and Specifications ahead of each academic year. This usually happens in May.

To find out more please see our terms and conditions

Stage 1 will provide a broad introduction to the principles of engineering. You'll get hands-on from the very beginning of your degree, working in a team to design and build a working wind turbine as part of a project.

Modules

Compulsory Modules	Credits
Engineering Mathematics I	20
Electrical and Magnetic Systems	15
Electronics and Sensors	10
Thermofluid Mechanics	15
Properties & Behaviour of Engineering Materials	15
Mechanics I	15
Introduction to Programming Languages (C, Matlab and Python)	15
Sustainable Design, Creativity and Professionalism	15

Stages 2 covers: mechanical, electrical and materials engineering sciences (50%), engineering design and manufacturing (20%), engineering mathematics (18%), and management and professional skills, such as computing and enterprise (12%).

Modules

Compulsory Modules	Credits
Engineering Mathematics II	10
Materials Science II	10
Thermal Engineering	10

Applications of Engineering Fluid Mechanics II	10
AC Electrical Power and Conversion	10
Mathematical Modelling & Statistical Methods For Engineering	10
Business and Law for Engineers	10
Engineering Mechanics: Statics	10
Engineering Mechanics: Dynamics	10
Design and Manufacturing II	20
Mechanical Engineering Professional Skills II	10

In Stage 3, your studies continue to cover a broad range of mechanical engineering topics, so you develop a wide set of skills and knowledge ready to take into the workplace.

You'll also work on a project based in local industry in a small team of your peers and also complete an extended piece of work on a topic selected from a wide range of projects. This is aimed at developing your capabilities as an engineer in areas such as project planning and data analysis.

Modules

Compulsory Modules	Credits
Computational Heat and Fluid Flow	10
Advanced Mechanics and Structural Optimisation	20
Digital Manufacturing Processes and Systems	20
Introduction to Biomedical Engineering	10
Advanced Thermofluid Dynamics	10
Introduction to Mechatronics Design	20

Information about these graphs

We base these figures and graphs on the most up-to-date information available to us. They are based on the modules chosen by our students in 2024-25.

Teaching time is made up of:

- scheduled learning and teaching activities. These are timetabled activities with a member of staff present.
- structured guided learning. These are activities developed by staff to support engagement with module learning. Students or groups of students undertake these activities without direct staff participation or supervision

Teaching and assessment

Teaching methods

Over the first two years you will have around 20 timetabled hours per week; typically half lectures, one quarter seminars and tutorials and one quarter practical and hands-on classes. There are also industrial visits, interviews, business games, management, and a variety of projects.

In stages 3 and 4, your timetable will allow more time for your major project work.

Assessment methods

You'll be assessed through a combination of:

- Coursework
- Examinations – practical or online

Skills and experience

Practical skills

You'll gain hands-on experience throughout your degree using industry-standard, state-of-the-art facilities in the School of Engineering.

You'll also work with local industry during various projects, and learn about real-world engineering through guest lectures.

Research skills

The teaching of your mechanical engineering degree is informed by the research of our expert staff based in our research institutes, which specialise in bioengineering, design, manufacture and material and fluid dynamic and thermal systems.

These research groups allow you to draw on the expertise of staff and their connections with industry as well as providing access to specialist facilities.

Opportunities

Work placement

Apply your practical skills, increase your confidence and gain real-life work experience to accelerate your career. Take a 9-12-month industrial placement in the UK or abroad. Work placements usually take place in stage 3 of your studies and extend your degree by one year.

Find out more about work placements.

Facilities and environment

Facilities

As a mechanical engineering student you'll be based in the School of Engineering in the heart of our city-centre campus.

You'll have access to a wide range of industry-standard facilities and laboratories such as:

- labs for design-make-test projects: making and testing machines and structures
- strengths (testing) labs with machines up to 500kN and access to machines up to 8MN
- mechatronics/electronics labs for programming robots and automated devices
- bio-engineering lab for bio-materials manufacture and testing of components
- manufacturing lab with good selection of modern CNC machine tools
- composite materials lab with fire test facilities

We also provide high-quality, specialist facilities to support your studies:

- state-of-the-art CAD and CAE 3D design facilities
- HE-Ion and other microscopes with resolutions down to 0.3nm
- wide range of rapid prototyping facilities for projects and research
- engine test cells, wind-tunnel and water flow channels with laser flow management
- Formula Student car design, build and test facilities
- gear and drive system testing machines up to 8MW capacity
- our own 1750hp main-line diesel-electric locomotive

Support

To support you in your studies, all new students entering year 1 or year 2 will receive:

- a tablet so you can download the online learning resources you'll need for your course (helping us to make our campus more sustainable)
- a start-up pack containing essential personal protective equipment

You'll have the support of an academic member of staff as a personal tutor throughout your degree to help with academic and personal issues.

Peer mentors will help you in your first year. They are fellow students who can help you settle in and answer any questions you have when starting university.

Your future

Graduates from our Mechanical Engineering course have gone on to work for a range of high-profile companies and organisations, such as:

- EDF Energy
- Jaguar Land Rover
- Doosan Babcock
- Network Rail
- Nissan
- Ministry of Defence
- Caterpillar

93% of our mechanical engineering graduates were in work or further study within six months of graduating.*

*Destinations of (undergraduate, UK and EU) Leavers from Higher Education Survey 2016/17

Prepare for diverse career paths

Your degree will prepare you for a role in a wide range of sectors, including:

- transport
- logistics
- health
- defence
- manufacturing
- automobile
- renewable energy

The excellent analytical and problem-solving skills you'll gain through studying mechanical engineering will make you an attractive proposition to employers in

finance, business consultancy and public services.

Make a difference

Careers support

Our Careers Service is one of the largest and best in the country, and we have strong links with employers. We provide an extensive range of opportunities to all students through our ncl+ initiative.

Visit our Careers Service website

Recognition of professional qualifications outside of the UK

From 1 January 2021 there is an update to the way professional qualifications are recognised by countries outside of the UK

Check the government's website for more information.

Additional information

Advice on maths and science requirements

If you don't think you will have the exact mathematics and science qualifications referred to in our entry requirements by the time you need them, you may not be sure what to do.

- If you have a maths qualification but will not have it at A Level (or equivalent) when you start your degree, you should apply for the relevant degree with Foundation Year. We may give you the opportunity to take the Newcastle University Pre-Entry Maths Course* and the option to start in Year 1 if we think that this will be the best route for you.
- If you have A Level Maths (or equivalent) already but not at the required grade, you should contact us for advice. We may decide that you could be

considered for Foundation Year entry, or it may be that this course is not the best option for you.

- If you will not have the equivalent of an A Level in the science subject (if any) required, you should apply for the relevant degree with Foundation Year.

If you are still not sure, don't worry. Whatever you apply for, our Admissions Tutors will help you decide which is the best route for you. They may, therefore, make you an offer for a different course from the one you apply for (eg Foundation Year entry instead of Year 1 entry).

*The Newcastle University Pre-Entry Maths Course aims to provide the requisite mathematical skills and concepts needed on our engineering, maths and physics degree courses and to prepare students for the modes of learning they will encounter. The materials for the course are delivered electronically and include opportunities to practise your skills. You study the materials in your own time and, when you are ready, you book your exam with the Engineering School to which you have applied. A fee of £150 is payable at the time of booking the exam or shortly before the date set for examination.

Find out more...

- Go online for information about our full range of degrees: **www.ncl.ac.uk/undergraduate**
- To watch videos about student life in Newcastle, visit **www.ncl.ac.uk/lovenewcastle**
- Visit **www.ncl.ac.uk/tour** to take virtual tours of the campus and city
- Book for an Open Day to come and see us in person **www.ncl.ac.uk/openday**
- Contact us online at **www.ncl.ac.uk/enquiries** or phone +44 (0)191 208 3333

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