Civil and Structural Engineering
MEng Honours

UCAS code H242
4 Years

www.ncl.ac.uk/ug/H242
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4 Years

This professionally accredited MEng Honours degree includes an additional year of Master’s-level study, which deepens your knowledge and provides the basis for registering as a Chartered Engineer.

You focus on the design of structures, such as bridges and buildings, through topics including sustainable engineering systems and construction management.

During the fourth year you develop your research skills through an investigative research project. You also study advanced topics in structural engineering, such as:
- seismic resistant design
- unique and unusual structures
- structural reliability and analysis

Highlights of this degree

Quality and ranking
- 2nd in the UK for research power (Research Fortnight)
- top 175 – Engineering and Technology category – Times Higher Education World University Rankings by Subject 2018
- top 150 – Civil and Structural Engineering category – QS World University Rankings by Subject 2019

Professional accreditation
This degree is professionally accredited by the Joint Board of Moderators (JBM), which is made up of the following four professional bodies:
- Institution of Civil Engineers
- Institution of Structural Engineers
- Chartered Institution of Highways and Transportation
- Institute of Highway Engineers

The JBM works with universities to ensure their degree programmes develop professional engineers who will continue to provide a global contribution to sustainable, economic growth and ethical standards.

*All professional accreditations are reviewed regularly by their professional body.

Become a chartered engineer
Both our BEng and MEng degrees provide a pathway to becoming a Chartered Engineer (CEng). This is one of the most recognised international engineering qualifications.

Our Master of Engineering (MEng) degrees are a direct route to becoming chartered. You don’t need to study any more qualifications after your degree to achieve chartered status.

Our BEng degrees can also lead to Chartered Engineer status. However, you’ll need to complete further study, like an approved Master’s degree.

Visit the Engineering Council’s website for information about the benefits of becoming chartered.

Enjoy flexibility, variety and specialisation
The size, success and professional expertise at Newcastle mean that we can offer five study themes in civil engineering.

You’ll study each theme in different proportions, depending on which degree you choose, building to a highly specialised study programme to prepare you for your future career.

Our study themes are:
- infrastructure
- modelling and information systems
- surveying engineering
- environmental systems
- human system demands and impacts

Find out more about what you will study in the Course Details section.

Benefit from our industry links
Graduate with the skills employers look for, thanks to the input of our industry advisory panel into your degree programme.

Network with professional engineers at the regional office of the Institution of Civil Engineers. It’s hosted here at Newcastle.

Learn from speakers from industry, who we use extensively throughout our degrees to bring theory to life.

Receive support and advice from practising engineers on your annual team design project. And showcase your work at our annual exhibition.

Observe professional engineers at work through field visits to live civil engineering sites.

Compete for prizes donated by industry at each Stage. Categories include best overall student performance, best design performance and best project.

Learn in outstanding facilities
Study at Newcastle and you will join our School of Engineering.

We have fantastic facilities to develop professional skills you’ll need in your career.

These include specialist laboratories on campus, where you’ll test your design decisions and learn how different materials behave. For example:
- testing heavy structures, like reinforced concrete beams
- analysing the properties of different materials, like steel and timber
- exploring chemical and biological properties of waters, soils and more
• studying how water behaves in flood or heavy rainfall
• testing highway design with our driving simulator

You can find out more about our facilities on the School website.

You will also have access to full-scale field facilities off campus, including:
• flood defence schemes
• instrumented river catchment system
• hydro-borehole facility
• engineering embankment
• electric vehicles

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 and textbooks.

**Study abroad**

If you want to experience life in another country you can study abroad as part of your degree.

We have partners in Sweden, Singapore, Hong Kong and the USA.

This will boost your CV, your confidence and your communication skills. It also shows employers that you embrace new experiences and enhances your intercultural awareness.

**Defence Technical Undergraduate Scheme (DTUS)**

Do you want to become a technical officer in the Royal Navy, British Army, RAF or Defence Engineering and Science Group when you graduate?

This degree is approved by the Defence Technical Undergraduate Scheme (DTUS).

DTUS is a sponsorship programme for students interested in a scientific, engineering or technical career in the armed forces or the Ministry of Defence.

Find out more on our Armed Forces page.

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**Course Details**

**Modules for 2019 entry**

**Please note**

The module and/or programme information below is for 2019 entry. Our teaching is informed by research and modules change periodically to reflect developments in the discipline, the requirements of external bodies and partners, student feedback, or insufficient numbers of students interested (in an optional module). To find out more read our terms and conditions.

Module/programme information for 2020 entry will be published here as soon as it is available (end of May 2020).

Our degrees are divided into Stages. Each Stage lasts for an academic year and you need to complete modules totalling 120 credits by the end of each Stage. Further information, including the credit value of the module, is available in each of the module descriptions below.

**What you will study - key themes**

You study modules across five themes, in different proportions depending on which degree you choose, including:

**Design**

Design, and designing sustainable solutions to infrastructure problems, is at the heart of our degrees.

At each Stage, you undertake a large engineering design task. We have developed these from our world-leading research, in conjunction with our industrial partners.

This ensures you develop the latest research-based and professional knowledge.

You’ll analyse your design theories in our state-of-the-art facilities, which have been independently rated as 'excellent'.

**Infrastructure**

This theme introduces you to the principles of structural and materials engineering that can be applied to the design and building of:
• bridges
• buildings
• transport systems

**Modelling and informatics**

You will develop your fundamental mathematical, analytical and computational skills that you’ll use in your design projects through this theme.

**Environmental systems**

This theme explores our relationship with the environment around us, including water, land and air.
Human and management systems
This theme focuses on the challenges facing civil engineers, such as:
- climate change
- growing populations and scarce resources
- issues such as ethics and management

Surveying
This theme introduces you to:
- engineering surveying
- GPS
- aerial photography
- 3D laser scanning
It will also introduce you to mapping and positioning techniques that underpin any infrastructure project.

MEng final year
In Stage 4, you learn in weekly blocks, often alongside our MSc students and professional engineers from industry.
You’ll work full time on a unit of study for one week, with the following week timetabled for independent study.
You have a choice of modules that offer career-enhancing skills.
This include Global Engineering, an international design and build challenge that has seen students work in Borneo to design and build a water supply for a remote, jungle village.
This also includes Business Enterprise in Science and Engineering that teaches you how to set up and operate a business in the construction sector.
In addition, the Career development module gives you the chance to undertake a work placement, allowing you to benefit from our excellent links with industry.

Modules
Programme modules do change and therefore may differ for your year of entry.

Stage 1
Compulsory modules
CEG1004 Design of Sustainable Engineering Systems 1
CEG1101 Environmental Systems
CEG1201 Geotechnical Properties of Soils and Rocks
CEG1302 Structural Mechanics
CEG1303 Engineering Materials
CEG1501 Fluid Mechanics
CEG1709 Engineering Surveying 1
CEG1710 Geographic Information Systems
ENG1001 Engineering Mathematics 1

Stage 2
Compulsory modules
CEG2001 Design of Sustainable Engineering Systems 2
CEG2002 Statistics and Numerical Methods for Civil Engineers
CEG2101 Treatment of Water and Wastewater
CEG2201 Geotechnics
CEG2301 Structural Analysis
CEG2302 Steel and Concrete Structures
CEG2303 Construction Materials
CEG2401 Land Traffic and Highways
CEG2501 Hydraulics
CEG2712 Engineering Surveying 2

Stage 3
Compulsory modules
CEG3001 Design of Sustainable Engineering Systems 3
CEG3002 Construction Management
CEG3003 Engineering Ethics and Sustainability
CEG3004 Sustainable Engineering Systems Design Project
CEG3201 Geotechnical Design
CEG3305 Computational Engineering Analysis
ARC3020 Introduction to Architecture
CEG3301 Design of Building Systems
CEG3302 Structural Analysis 2

Stage 4
Compulsory modules
CEG8002 Construction Project Management
CEG8003 Public Policy: Infrastructure and Climate Change
CEG8099 Investigative Research Project
Optional modules
You will take 20 credits from the following list:
CEG8005 Global Engineering - An International Design and Build Challenge
NCL8007 Career Development for Masters Level Students
SPG8016 Business Enterprise in Science and Engineering
You will also take 20 credits from the following list:
CEG8304 Structural Reliability
CEG8306 Engineering Mechanics of Composites
CEG8313 Structural Collapse Dynamics and Multiscale Modelling
You will take a further 20 credits from the following list:
CEG8308 Seismic Resistant Design
CEG8309 Finite Element Analysis in Structural Mechanics
Teaching and assessment
You’ll learn through lectures, practical work, site visits, individual study and group work.

A typical week includes lectures each morning with two or three laboratory or design sessions in the afternoons.

In Stage 4, you work full time on a unit of study for one week, with the following week timetabled for independent study.

We’ll assess you through coursework. This may include:

- reports and calculations
- using 3D visualisation tools
- making presentations to practising engineers from industry

Teaching and assessment methods may vary from module to module. More information about each module including specific assessment methods, credits and contact hours, can be found in the Course Details section.

Support and settling in
We provide plenty of support to help you successfully move from school to university study. We’ll help you settle in quickly and are here if you have any issues.

We support you through:

- a personal tutor – a member of academic staff who can help with academic and personal issues
- a peer mentor – a fellow student who can help you settle in and answer any questions you have
- our student-run society, CEGSoc – to help you make friends with your coursemates, with social events throughout the year

Careers

Civil Engineering careers
The quality of Newcastle graduates is well recognised by the engineering profession and our students have an excellent record for obtaining rewarding employment at the end of their degree programmes.

We host a dedicated Civil Engineering professional development fair for second-year students. Many of the sector’s leading employers and professional bodies attend.

In recent years, our graduates have gone on to work for a range of leading companies and authorities such as Atkins, Arup, AECOM, CH2M Hill, Mott MacDonald, MWH, Transport for London, and Balfour Beatty.

As well as civil engineering careers, graduates have gone to work in the mining, nuclear, oil and gas, and renewable energy industries.

Some graduates have chosen to undertake advanced study (eg PhD or MSc) in civil engineering or related subjects. Others take up commissions in the Armed Forces.

An engineering degree will also equip you with the skills for a career in a wide variety of areas such as general management, administration, banking and insurance, with organisations such as HSBC and IBM.

Find out more about the career options for Civil Engineering from Prospects: The UK’s Official Careers Website.

What our graduates go on to do: employment and further study choices
See what our recent graduates went on to do and view graduate destinations statistics. These statistics are based on what graduates were doing on a specific date, approximately six months after graduation. Take a look at the most recent data available for our graduates.

The destination data is available in varying levels, beginning with the University and moving through Faculty and School down to individual course reports. This final level may give you some useful ideas about possible options after your course or a course you are considering.

Careers and employability at Newcastle
Newcastle University consistently has one of the best records for graduate employment in the UK.

96% of our 2017 UK-domiciled UG/PG graduates progressed to employment or further study within six months of graduating.

85.5% of our graduates are in graduate level employment or further study within six months of graduating.

We provide an extensive range of opportunities to all students through an initiative called ncl+. This enables you to develop personal, employability and enterprise skills and to give you the edge in the employment market after you graduate.

Our award-winning Careers Service is one of the largest and best in the country, and we have strong links with employers.

Fees & Funding

<table>
<thead>
<tr>
<th>Tuition Fees (UK students)</th>
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<tbody>
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<td>2020 entry:</td>
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<td>For programmes where you can spend a year on a work placement or studying abroad, you will receive a significant fee reduction for that year.</td>
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Take a virtual tour at www.ncl.ac.uk/tour
Tuition Fees (UK students)

Some of our degrees involve additional costs which are not covered by your tuition fees.

Please note:
The maximum fee that we are permitted to charge for UK students is set by the UK government.

As a general principle, you should expect the tuition fee to increase in each subsequent academic year of your course, subject to government regulations on fee increases and in line with inflation.

See more information on all aspects of student finance relating to Newcastle University.

Scholarships and Financial Support (EU students)

You may be eligible for one of a range of Newcastle University Scholarships in addition to government financial support.

Newcastle University Scholarships
Government financial support

Tuition Fees (EU students)

2020 entry:
£9,250 You will pay the same tuition fees as UK students for the duration of your course.

For programmes where you can spend a year on a work placement or studying abroad, you will receive a significant fee reduction for that year.

Some of our degrees involve additional costs which are not covered by your tuition fees.

Please note:
As a general principle, you should expect the tuition fee to increase in each subsequent academic year of your course, subject to government regulations on fee increases and in line with inflation.

See more information on all aspects of student finance relating to Newcastle University.

Scholarships and Financial Support (International students)

We offer a range of scholarships to eligible international students:

Vice-Chancellor’s International Scholarships
Vice-Chancellor’s Excellence Scholarships
Vice-Chancellor’s Global Scholarships

We also offer International Family Discounts which are available for all international students with a close family member who has graduated from or is now studying at Newcastle University.

Newcastle University offers Sanctuary Scholarships for eligible undergraduate students (excludes MBBS and BDS students) from asylum-seeker and refugee backgrounds.

Some of our subject scholarships and sports scholarships are also available for international students.

Tuition Fees (International students)

2020 entry*:
£22,800

*Please note:
You will be charged tuition fees for each year of your degree programme (unless you are on a shorter exchange programme).

The tuition fee amount you will pay may increase slightly year on year as a result of inflation.

If you spend a year on placement or studying abroad as part of your degree you may pay a reduced fee for that year.

See more information on all aspects of student finance relating to Newcastle University.

Scholarships and Financial Support (UK students)

You may be eligible for one of a range of Newcastle University Scholarships in addition to government financial support.

Newcastle University Scholarships
Government financial support

Apply

Applying to Newcastle University through UCAS

To apply for undergraduate study at Newcastle you must use the online application system managed by the Universities and Colleges Admissions Service (UCAS).

UCAS codes for Newcastle University
• institution name - NEWC
• institution code - N21

UCAS buzzword
Ask your teacher or adviser from your school or college for the UCAS buzzword. You need the buzzword when you register on the Apply system. This makes it clear which school or college you are applying from.

All UK schools and colleges and a small number of EU and international establishments are registered with UCAS.

If you are applying independently, or are applying from a school or college which is not registered to manage applications, you will still use the Apply system. You will not need a buzzword.
Making your application
On the UCAS website you can also find out more about:

- application deadlines and other important dates
- offers and tracking your application

Application decisions and enquiries
Find out more about our admissions process and who to contact if you need help with your application.

The Robinson Library has 1.5 million books and lots of study space.