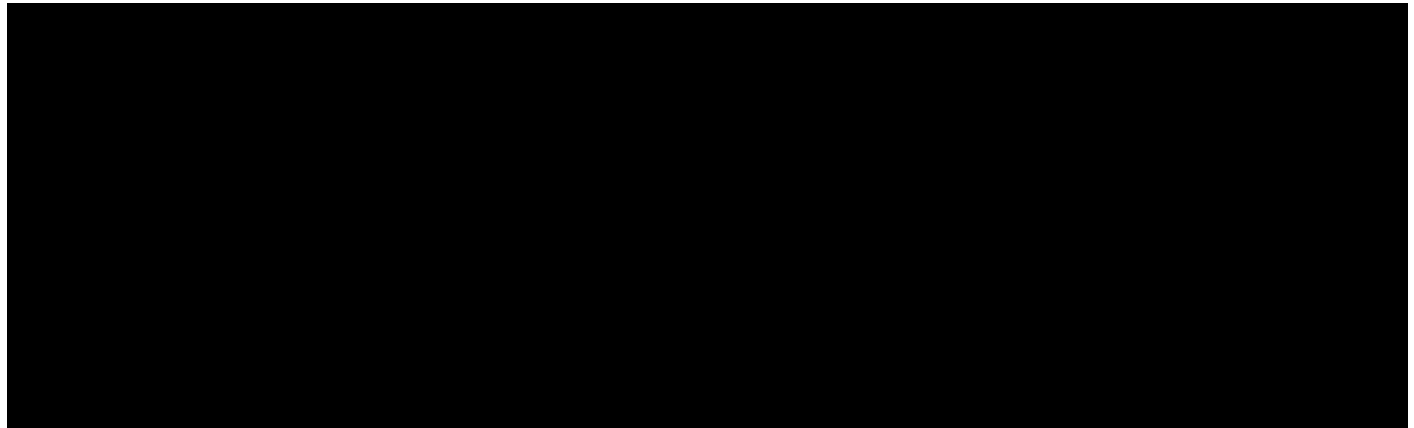




**Northumbria  
University**  
NEWCASTLE

Newcastle  
London  
Amsterdam



# Mechanical Design Engineering (top-up award)

Undergraduate | 1 year full-time | Full Time

Mechanical and Construction Engineering | City Campus, Northumbria University

Newcastle | UCAS Code H303

# Mechanical Design Engineering (top-up award)

## About this course

**If you have a higher national diploma, foundation degree or similar qualification, this course will top it up to an honours degree with just one year of additional study. You will build on your all-round knowledge of mechanical engineering, adding a strong emphasis on design of equipment and mechanical systems.**

The course includes covers topics like how to design reliability into machines, how to predict structural fatigue and stress, and how to manage projects effectively. You'll also carry out a major project in a specific area of engineering design and technology.

Northumbria is ranked 3rd in the sector nationally for the sustained employment of Engineering and Technology graduates five years after graduation. (Longitudinal Education Outcomes (LEO) 2017)

There's plenty of support for you to develop the academic study skills that are required. Whatever your background, we'll help you take the more critical, deeper and research-informed approach that is needed for an honours degree at a UK university.

On graduation you'll be equipped to take up managerial roles within the mechanical engineering sector, having benefited from all that Northumbria University and the city of Newcastle has to offer.

## Modules & Learning

Our teaching methods include lectures, seminars, laboratory sessions and group projects as well as tutor-directed and self-directed research. There's a strong emphasis on problem-solving because we believe that you'll learn best when you're engaged in applying what we teach.

Assessment methods are designed to give you feedback as well as to monitor your level of achievement. They include assessed projects that will enable you to test your skills and understanding. For most modules, though not all of them, the main method of assessment is coursework and not exams.

- [See all the Modules for this course](#)

## Teaching Staff

You'll be taught by tutors who have many years of experience in the various aspects of the engineering industry. Their experience, combined with their on-going active research, will provide an excellent foundation for your learning.

The quality of their research has put Northumbria University among the UK's top 25% of universities for the percentage of research outputs in engineering that are ranked as world-leading or internationally excellent.

(Research Excellence Framework 2014.)

Our reputation for quality is reflected by the range and depth of our collaborations with industry partners. We've built up numerous industrial links during the 50+ years that we've been offering engineering courses. These links help ensure high quality placements and collaborative projects.

Northumbria has the advantage of being located in the North East of England, which is a centre of manufacturing and technical innovation. As well as Nissan, the region's #1 company, there is a strong concentration of automotive, engineering, chemicals, construction and manufacturing companies.

## Facilities

Northumbria University provides outstanding [facilities](#) for engineering. We have specialist laboratories for smart materials and composites, building and construction, control and instrumentation, and fluids and thermodynamics.

Our rapid prototyping room will make it easy for you to bring your design projects to life, and our modelling workshop offers tools and specialist equipment for modelling your designs. All our facilities are backed up by specialist technicians who will give support and advice when you need it.

To facilitate group projects, there is a working space called The Hub that's well equipped for meetings and working with IT. The Zone is another area that's popular with students undertaking group work or individual study.

## Research-rich Learning

Northumbria's strong research ethos is an essential aspect of how you will develop as a critical, reflective and independent thinker. With our problem-solving approach you'll acquire a wide range of research and analytical skills as you progress through the course. These skills will come together in the major project that you'll undertake, which requires independent research and appropriate techniques of inquiry, critical evaluation and synthesis.

Throughout the course your learning will be directly impacted by the teaching team's active research into their specialist subjects. One of Northumbria's signature research themes is 'Future Engineering', which is about innovation in the engineering and construction industries so that they are fit for purpose in the 21st century. We also have particular interests in novel construction materials, Building Information Management, smart materials and sustainable technologies.

## Career Edge

Our 'learning by doing' approach will give you an in-depth understanding and skills that are sought by employers. The curriculum is designed with a very strong vocational/professional emphasis that's informed directly by the industrial expertise of staff and industrial liaison committees.

Your major project will be an opportunity to demonstrate

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your technical ability and professionalism, not only for assessment purposes but also to potential employers. It will also require you to hone your ability to communicate to technical and non-technical audiences.

The Project Management and Professional Development module will enable you to develop appropriate practices and techniques in managing projects in the workplace. At the same time you'll develop your awareness of the disciplines of professional development to aid your career progression after graduation.

Our [Careers and Employment Service](#) offers resources and support that will help you find roles matching your interests and skills. You will be able to access a range of workshops, one-to-one advice, and networking opportunities.

## Your Future

By the end of this course, you'll have an honours degree that will give credibility to your job applications and unlock new doors. Engineering is a growth industry and currently, there is a general shortage of suitably qualified engineers.

If you wish to undertake further study at postgraduate level, Northumbria offers various masters degrees including MSc Mechanical Engineering.

For those who want to start up their own business, it's good to know that the combined turnover of our graduates' start-up companies is higher than that of any other UK university.

Whatever you decide to do, you'll have strong employability as a result of having acquired the characteristics of a Northumbria graduate. These include critical reflection and self-learning, collaboration and curiosity, and the ability to apply your knowledge to solve problems in ways that are sustainable and ethical.

- [See Alumni profiles for this subject area](#)

## Who would this course suit?

This course is for people who prefer a design approach to mechanical engineering and want to top up their existing qualifications to a full undergraduate degree.

## Entry Requirements 2020/21

### Standard Entry

**BTEC HND/Foundation degree in a related discipline, or equivalent UK/Overseas qualifications.**

If you have taken a BTEC HND programme we will usually expect you to have performed to an average of merit standard.

If you have taken a Foundation Degree we will be looking for performance to commendation level or 60% average.

### International Qualifications:

We welcome applicants with a range of qualifications from

the UK and worldwide which may not exactly match those shown above. If you have taken qualifications outside the UK you can find out how your qualifications compare by visiting our country page [www.northumbria.ac.uk/yourcountry](http://www.northumbria.ac.uk/yourcountry)

### English Language Requirements:

International applicants are required to have a minimum overall IELTS (Academic) score of 6.0 with 5.5 in each component (or approved equivalent\*).

\*The university accepts a large number of UK and International Qualifications in place of IELTS. You can find details of acceptable tests and the required grades you will need in our English Language section. Visit [www.northumbria.ac.uk/englishqualifications](http://www.northumbria.ac.uk/englishqualifications)

## Entry Requirements 2021/22

### Standard Entry

**BTEC HND/Foundation degree, or equivalent**

in a related subject.

If you have taken a BTEC HND programme, we will usually expect you to have performed to an average of Merit standard.

If you have taken a Foundation Degree, we will be looking for performance to Commendation level, or 60% average.

### International Qualifications:

We welcome applicants with a range of qualifications which may not match those shown above.

If you have qualifications from outside the UK, find out what you need by visiting [www.northumbria.ac.uk/yourcountry](http://www.northumbria.ac.uk/yourcountry)

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## Module Overview

Year 1	
KB6007	Advanced Manufacturing Systems
KB6009	Mechanical Design & Analysis
KB6011	Mechanical System Design
KD6004	Design Engineering Project
KF6028	Project Management and Professional Development
KB5031	Academic Language Skills for Mechanical and Construction Engineering

## Finance

### Tuition Fees (UK students)

**2021 entry:** Tuition fees not yet confirmed.

Please note that the tuition fee amount you will pay may increase slightly year on year in line with inflation and subject to government regulations.

### Tuition Fees (International students)

**2021 entry:** Tuition fees not yet confirmed.

Please note that the tuition fee amount you will pay may increase slightly year on year in line with inflation and subject to government regulations.

### Additional Costs (All Students)

**2021 entry:** There are no Additional Costs

### Financial Support

Northumbria University is committed to supporting our students. We offer scholarship packages for students depending on their abilities.

You can find out more information on our individual packages at [www.northumbria.ac.uk/study-at-northumbria/fees-funding/ug-fees-funding](http://www.northumbria.ac.uk/study-at-northumbria/fees-funding/ug-fees-funding)

Financial support opportunities have associated eligibility conditions, therefore it is essential applicants consider all requirements and observe the application process and deadlines.

## Other Additional Costs

### Accommodation Costs

Many students find that staying in University accommodation enhances their student experience, and Northumbria has a fantastic selection available for you. Visit our [accommodation pages](#) to investigate your options for living and studying in Newcastle. All costs incurred are optional and students should select the most appropriate accommodation for their needs.

### Disability Support

In order to access disability or dyslexia support, students may be required to provide evidence of their disability. This evidence is often provided by an external body (for example, by a medical specialist or GP) and these external bodies may charge for providing this evidence. Also, if a disabled student is eligible for DSA funding for computer equipment, depending on their funding body, the student may be required to make a contribution of £200 towards the cost of any computer equipment. For more information about how to access disability support, contact [Student Support and Well-being](#).

### Healthcare Costs

Students, depending on their circumstances, may incur some charges for accessing healthcare or medication from the National Health Service. These include charges for prescriptions, charges for dental checks and treatment, and charges for other services, such as providing vaccinations or for certain types of medical evidence (for example, evidence to support a Personal Extenuating Circumstances/PEC claim at the University, if required). These charges are set and charged by NHS services, rather than by the University, and will be subject to change.

Certain applicants who apply for a UK visa will pay an Immigration Health Surcharge. International students from particular countries may also be required to pay to have a tuberculosis (TB) test.

We also strongly recommend that all EU and international students take out their own insurance policy to cover costs which are not met by the National Health Service. It is your responsibility to ensure you pay for adequate insurance cover for the duration of your stay in the UK.

For more information about healthcare-related charges in the UK, you can speak to the [Welfare, Immigration and Funding team](#) based in Student Support and Well-being.

### Congregation Costs

When you graduate you will be invited to attend your graduation ceremony. Congregation ceremonies have associated costs, for instance **to take part you will be required to hire a graduation gown and cap**, you may also wish to purchase a professional photograph or additional guest tickets. To give you an approximation of costs, for students graduating in 2018/19, the price of an additional guest ticket was £12.50. Please be aware that the associated costs of graduation ceremonies are subject to

review each year. Gown hire and photography are purchased from external providers, therefore the University cannot demonstrate prices.

### Library Costs

Your University Library provides a postal service for books and journal articles which will be sent world-wide to Northumbria students who are studying part-time, by distance learning or are work based learners. Students who are placement for more than six week are eligible to use the service whilst on placement.

There is no charge for posting books out, but you will be required to pay the cost of any return postage. We recommend that items are returned by recorded delivery. You can of course, return books in person to either University Library campus.

Overdue charges apply to all library loans to encourage you to return items on time when they have been recalled for use by another reader. Loan renewal is automatic for up to four months or until another reader requests that item. Charges are entirely avoidable by returning items on time, but where incurred will vary according to loan status and the length of time an item is overdue. Overdue charges exist to ensure the Library Collection benefits the whole student community.

Library books which have been lost or damaged beyond repair will be charged at the replacement cost of the item and a non-refundable handling charge.

If you lose your University smart card there is a replacement charge of £10 to obtain a new one. This cost is waived if your smart card has been stolen and you can provide a police crime reference number.

### Placement Costs

Placements in industry are a core element of many of Northumbria's courses. Whilst many of these placements are optional, some are mandatory. They offer you a great opportunity to gain hands-on experience, giving you a distinct edge in the job market. To undertake a placement, you will need to budget for any accommodation and travel charges.

### Printing & Photocopying Costs

Students will receive a printing credit of £10 in 2019/20 and 2020/21\*. This will provide 1,000 pages of A4 single-sided black and white printing. Any additional printing is paid for by the student.

\*Newcastle and London campus only. Amsterdam endeavours to be a paperless campus and printing of submission is not required. Costs at Newcastle Campus may be subject to change for 2020/21.

### Visa Costs

International students will be required to pay visa application fees, and associated fees as required - such as the Immigration Healthcare Surcharge, Tuberculosis tests, fees to renew or extend a visa, and fees associated with

appealing a visa/immigration decision. These fees are set and charged by the UK government, rather than by the University, and are subject to change. More information about these fees can be found on the [UK Government's website](#), and information about applying for a visa to study at Northumbria can be found on our [here](#).