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Expert academics
who are pushing forward the boundaries of the subject

Get hands-on experience
with a year out in industry

Develop the skills and knowledge needed to become a Chartered Engineer

Tailor-make your own degree
right from year one

Study abroad opportunities
for a semester or a full year

Build key, transferable skills sought after by top employers

Guidance and advice from your personal tutor, peer mentor and dissertation supervisor

All our courses are accredited by relevant industrial bodies

Ranked 6th in UK for chemical and environmental engineering

The Guardian University Guide 2018

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The Guardian University Guide 2018
Studying chemical and environmental engineering at Nottingham

You will develop core scientific and engineering skills which are highly sought-after by global graduate employers. These will be built through practical lab experience, teamwork and problem solving.

Under the guidance of engineering practitioners, we will equip you with the professional expertise required by industry. Our courses also develop your awareness of challenges faced by industry through site visits, case studies and guest teachers from industry. Project work focuses on solving real industrial problems in chemicals manufacturing and processing, energy, environment, water and waste.

Process design focus
Our courses focus on process engineering, developing whole system professional standard process design, with the level of design increasing in complexity throughout the course. This prepares you for industry and equips you with a competitive edge when securing jobs and placements. Emphasis is placed on the value of group project work.

At a glance
- Join a department with a blend of expertise in research, teaching and engineering practice
- Learn different aspects of process engineering and choose your pathway at the end of year one
- Spend a year in industry and gain significant, professional experience valued by employers

Facilities
We have fully equipped lecture theatres, a design suite to develop your interactive and creative skills, 24-hour access to IT facilities and extensive laboratories. Equipment ranges from lab-scale scientific apparatus for modular experiments, through to pilot-scale rigs.

Careers and industry
Our graduates are well-regarded and find career opportunities in a range of industries including bioprocess, energy, chemical manufacturing, pharmaceutical, finance, food, environmental services, oil and gas, as well as consultancies. Find out more on page 16-17.

why study with us?

Our courses

<table>
<thead>
<tr>
<th>Degree title</th>
<th>UCAS code</th>
<th>Duration</th>
<th>A levels</th>
<th>IB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEng</td>
<td>MEng Chemical Engineering</td>
<td>H810</td>
<td>3</td>
<td>4 years</td>
</tr>
<tr>
<td>BEng</td>
<td>MEng Chemical Engineering including an Industrial Year</td>
<td>H81B</td>
<td>4</td>
<td>5 years</td>
</tr>
<tr>
<td>BEng</td>
<td>MEng Environmental Engineering</td>
<td>H806</td>
<td>3</td>
<td>4 years</td>
</tr>
<tr>
<td>BEng</td>
<td>MEng Environmental Engineering including an Industrial Year</td>
<td>H808</td>
<td>4</td>
<td>5 years</td>
</tr>
<tr>
<td>BEng</td>
<td>MEng Chemical with Environmental Engineering</td>
<td>H8HF</td>
<td>3</td>
<td>4 years</td>
</tr>
<tr>
<td>BEng</td>
<td>MEng Chemical with Environmental Engineering including an Industrial Year</td>
<td>HVH2</td>
<td>4</td>
<td>5 years</td>
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Required subjects
A level or Higher Level (IB) in maths and either chemistry or physics (including a pass in the practical element). General studies, critical thinking and citizenship studies not accepted.

Foundation courses
Applicants who are not eligible for direct entry to undergraduate study may be able to apply for the Engineering Foundation Year Programme. Find out more at nottingham.ac.uk/foundationcourses

English language requirements
IELTS 6.0 (no less than 5.5 in any element). For details of other English language tests and qualifications we accept, please see nottingham.ac.uk/go/alternativerequirements

Academic English preparation
If you require additional support to take your language skills to the required level, you may be able to attend a presessional course at the Centre for English Language Education, which is accredited by the British Council for the teaching of English in the UK.

Students who successfully complete the presessional course to the required level can progress onto their chosen degree course without retaking IELTS or equivalent. Find out more at nottingham.ac.uk/cele
BEng | MEng Chemical Engineering

These courses give you an insight into the knowledge and skills needed to be a professional chemical engineer.

Year one
The department teaches the same first year across all chemical engineering and environmental engineering courses.

You will be introduced to the fundamental engineering sciences including heat and mass transfer, fluid mechanics and thermodynamics. Safety and environmental aspects are also covered, as are the development of professional skills. Material is taught using problem-based learning, tutorials and laboratory classes. At the end of year one you can choose to transfer onto any courses within the department once you know more about the specialist areas.

Year two
The focus of year two is to develop the fundamental engineering sciences into the key processes and operations that are common within chemical engineering, such as reaction engineering, separations, plant and process design. Laboratory work focuses on unit operations and the exposure to industry and cutting-edge research also increases.

Safety and environmental aspects are an important part of year two. During this year, you will become more independent in your approach to learning.

At the end of the year you can elect to transfer between BEng and MEng courses.

nottingham.ac.uk/ugstudy/chemenv

Year three
In year three, you will develop the practical application of the knowledge and skills that have been gained in years one and two. Laboratory exercises are more open-ended, using large-scale and industrial equipment. You’ll cover project management, business and finance and there is a significant amount of input from industry.

In your third-year, you will undertake a group design project, which simulates a commercial environment where companies tender for a design contract. Projects are industry driven and allow you to develop and demonstrate the skills and competencies necessary to be professional chemical engineers.

Year four (MEng only)
Year four allows you to develop specialist expertise. You will learn independently and will be able to tackle a wide variety of complex, multidisciplinary problems and more advanced chemical engineering concepts. You will undertake a research and development project, giving you first-hand experience in cutting-edge research and the opportunity to develop the more advanced skills that set masters-level students apart from other graduates.

Accreditation
These degrees have been accredited by the Institute of Chemical Engineers (IChemE) and by the Institute of Materials, Minerals and Mining (IOM3). They will provide you with some or all of the underpinning knowledge, understanding and skills for eventual registration as an Incorporated (IEng) or Chartered Engineer (CEng).

Module modules may change, for example due to curriculum developments. The above list is a sample of typical modules that we offer, not a definitive list. The most up to date information can be found on our website at nottingham.ac.uk/ugstudy/chemenv.
BEng | MEng
Environmental Engineering

These courses focus on environmental process engineering and provide you with an in depth understanding of water, air, waste and environmental assessment.

Year one
The department teaches the same first year across all chemical engineering and environmental engineering courses.

You will be introduced to the fundamental engineering sciences including heat and mass transfer, fluid mechanics and thermodynamics. Safety and environmental aspects are also covered, as are the development of professional skills. Material is taught using problem-based learning, tutorials and laboratory classes. At the end of year one you can choose to transfer onto any courses within the department once you know more about the specialist areas.

Year two
The focus of year two is skills building. At the end of the year you can carry out site investigations and prepare environmental impact assessments. A central part of year two is the environmental assessment field course, where you will learn about practical challenges encountered by environmental engineers. You will begin to explore the complexities of waste management and safety, and you will extend your mathematical knowledge. While the teaching still provides a structured learning environment, you will be encouraged to become more independent in your approach to learning.

At the end of year two you can elect to transfer between BEng and MEng courses. This is also the most common time for students to take a year out to work in industry or to undertake a study abroad programme.

Year three
In year three, we further develop the knowledge and skills learned in years one and two. You will explore the impact of industrial processes on air and water, and you will learn how to design treatment processes to minimise pollution. Your contribution to the design project will be associated with renewable energy, waste treatment and clean water provision. Projects are industry-driven and allow you to demonstrate your understanding of the skills and competencies necessary to be professional environmental engineers.

Year four (MEng only)
Year four allows you to develop specialist expertise. You will learn independently and will be able to tackle more complex problems, for example in areas such as contaminated land and resource management. Your research and design project will be the major piece of work, during which you will apply your knowledge of environmental process engineering to develop innovative solutions to cutting-edge research questions.

Accreditation
These degrees have been accredited by the Institute of Chemical Engineers (IChemE) and by the Institute of Materials, Minerals and Mining (IOM3). They will provide you with some or all of the underpinning knowledge, understanding and skills for eventual registration as an Incorporated (IEng) or Chartered Engineer (CEng).

nottingham.ac.uk/ugstudy/chemenv

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<tr>
<th>Year one</th>
<th>Year two</th>
<th>Year three</th>
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<tr>
<td>Core</td>
<td>Core</td>
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</tr>
<tr>
<td>■ Mathematical Methods</td>
<td>■ Analytical Measurement</td>
<td>■ Air Pollution</td>
</tr>
<tr>
<td>■ Chemistry for Engineers</td>
<td>■ Differential Equations and Calculus for Engineers</td>
<td>■ Advanced Transport Phenomena</td>
</tr>
<tr>
<td>■ Fluid Mechanics</td>
<td>■ Environmental Assessment</td>
<td>■ Hazardous Waste Management</td>
</tr>
<tr>
<td>■ Fundamentals of Engineering Design</td>
<td>■ Fundamentals of Process Control</td>
<td>■ Multicomponent Separations</td>
</tr>
<tr>
<td>■ Thermodynamics and Heat Transfer</td>
<td>■ Hydrology and Hydrogeology</td>
<td>■ Process Dynamics and Control</td>
</tr>
<tr>
<td>■ Introductory Geology</td>
<td>■ Particle Mechanics</td>
<td>■ Process Engineering Labs</td>
</tr>
<tr>
<td>■ Process Engineering</td>
<td>■ Plant Design</td>
<td>■ Reactor Design</td>
</tr>
<tr>
<td>■ Chemical Processing</td>
<td>■ Process Risk Management</td>
<td>■ Water Treatment</td>
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<tr>
<td>■ Process Dynamics</td>
<td>■ Risk Benefit and Analysis</td>
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BEng | MEng
Chemical with Environmental Engineering

These courses combine the traditional chemical engineering degree with an environmental aspect, where you will learn how to minimise the impact of chemical processes.

Year one
The department teaches the same first year across all chemical engineering and environmental engineering courses.
You will be introduced to the fundamental engineering sciences including heat and mass transfer, fluid mechanics and thermodynamics. Safety and environmental aspects are also covered, as are the development of professional skills. Material is taught using problem-based learning, tutorials and laboratory classes. At the end of year one you can choose to transfer onto any courses within the department once you know more about the specialist areas.

Year two
You will learn about key processes and operations that are common within chemical engineering, such as separations, plant design and process control. A central part of year two is the environmental assessment field course, where you will get an insight into the challenges experienced by environmental engineers. The analysis of safety and environmental aspects allow you to become more independent in your approach to learning.

Year three
In year three, you will develop the practical application of the knowledge and skills that you gained in years one and two. Laboratory exercises are more open-ended, using large-scale and industrial equipment. You will cover project management, business and finance and there is a significant amount of input from industry.
In your third-year, you will undertake a group design project, which simulates a commercial environment where companies tender for a design contract. Projects are industry driven and allow you to develop and demonstrate the skills and competencies necessary to be professional chemical engineers.

Year four (MEng only)
Year four allows you to develop specialist expertise. You will learn independently and will be able to tackle a wide variety of complex, multidisciplinary problems and more advanced chemical engineering concepts. You will undertake a research and development project giving you first-hand experience in cutting-edge research and the opportunity to develop the more advanced skills that set masters-level students apart from other graduates.

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nottingham.ac.uk/ugstudy/chemenv

Typical modules

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<td>- Environmental Assessment</td>
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<tr>
<td>- Introductory Geology</td>
<td>- Particle Mechanics</td>
<td>- Process Simulation</td>
</tr>
<tr>
<td>- Engineering Materials</td>
<td>- Plant Design</td>
<td>- Reactor Design</td>
</tr>
<tr>
<td>- Environmental Assessment</td>
<td>- Probabilistic and Numerical Techniques for Engineers</td>
<td>- Water Treatment</td>
</tr>
<tr>
<td>- Fundamentals of Process Control</td>
<td>- Separation Processes</td>
<td></td>
</tr>
<tr>
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<td>- Waste Management</td>
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</table>

Year four (MEng only)

**Core**
- MEng Project-combined design and research group project, planning, executing and reporting on an individual research study.

**Optional**
- Advanced Computational Methods
- Advanced Reaction Engineering
- Advanced Rheology and Materials
- Air Pollution
- Computational Fluid Dynamics
- Contaminated Land
- Environmental Risk Assessment
- Multiphase Systems
- Power Generation and Carbon Capture
- Process Synthesis and Design
- Water Treatment Engineering

Modules may change, for example due to curriculum developments. The above list is a sample of typical modules that we offer, not a definitive list. The most up to date information can be found on our website at nottingham.ac.uk/ugstudy/chemenv
Degrees with a year in industry

A year in industry is a fantastic opportunity for you to practise and develop your engineering skills, providing valuable professional experience which is key to achieving Chartered Engineer status.

Benefits
A year in industry will give a significant boost to both employment and academic prospects. According to research previously conducted by High Fliers Research, more than a third of graduate jobs are being filled by candidates who already have work experience with that employer. Getting a year in industry placement is therefore a great way into the job market after graduation. The skills and maturity that students develop while out on placement have a positive impact on their final degree results, which of course further enhances employability.

Features
Placements are usually undertaken in the UK, but can be anywhere in the world in companies from major global organisations to smaller consultancies and technology specialists. During a placement, you are classed as an employee of the host company, and will receive a salary. There is a nominal fee for the placement year and you will remain fully registered with the University during this time.

Support
Our dedicated Industrial Placement Team works closely with the Careers and Employability Service to support you in finding the right placement. Companies also visit the University to recruit students for industrial placements. The benefits of a year in industry are well recognised, and as such our degrees with an industrial year are very popular. Likewise, securing a year in industry placement is a highly competitive process, and you are responsible for submitting your own applications, which may include attendance at interviews and assessment centres. We therefore expect you to commit additional time over and above your academic studies to this process.

During my industrial placement, I worked for Transvac who specialise in the design and manufacture of ejectors used in a variety of industries worldwide. It was an opportunity to learn about myself, what I enjoy, and what type of job role would suit me as there are so many for chemical engineers to choose from.

Tsitsi Ndiriwepi, BEng Chemical Engineering, Transvac

nottingham.ac.uk/ugstudy/chemenv
Engaging study, incredible results

We use a variety of teaching methods and work with the latest technologies to create a vibrant study environment.

Depending on the topic, we use a combination of techniques including:
- lectures
- demonstrations
- practical sessions
- small-group projects
- problem-solving classes
- workshops
- tutorials

Personal tutors
All students have a personal tutor. Personal tutors are members of academic staff in the school and they will:
- monitor your academic progress and check on your wellbeing
- provide exam marks and help you reflect on feedback
- act as a first point of contact for any guidance on academic or personal matters

At Nottingham, we still offer small-group tutorials of around eight students. This ensures you have enough time to build a relationship with your tutor and benefit from their support. Your fellow tutees also provide peer support.

Additionally, the school has a dedicated Welfare Officer to help you adapt to university life and provide advice on more complex issues.

How will I be assessed?
Assessment will vary depending on the module being studied. Our methods include:
- practical assessments
- individual and group projects
- coursework
- written exams
- presentations

Key Information Sets
Key Information Sets (KIS) are comparable sets of information about full or part-time undergraduate courses and are designed to meet the information needs of prospective students. All KIS data is published on the Unistats website: unistats.co.uk

For Nottingham’s KIS data, please see individual course entries at nottingham.ac.uk/ugstudy
Outstanding careers support

Our courses have a strong focus on preparing you for professional practice. Modules are designed to meet the standards set by industry.

92.3% of undergraduates from the Department of Chemical and Environmental Engineering secured work or further study within six months of graduation.

£26,071 was the average starting salary with the highest being £31,500.

Take your degree further

Our courses have a strong focus on preparing you for professional practice: modules are designed to fulfil the requirements of engineering institutions and projects often have direct industrial relevance.

Our degrees are balanced and well-rounded and the majority of our graduates who do not continue in further education progress to professional careers in a wide range of engineering industries or in non-engineering sectors.

Amplify your potential

Whether you already have a plan or need some inspiration, your Careers and Employability Service is here to help.

Academic excellence and employability go hand in hand at Nottingham. Your course, and the diverse student experiences we offer, will enable you to develop the skills and professional competencies required to thrive in the job market of the future.

We will help you explore your options, so you feel confident making choices about what you want to achieve. Our team will support you as you build your CV, search for jobs, prepare applications, practise your interview technique, and much more.

Get the Advantage

The career-enhancing Nottingham Advantage Award recognises and rewards your extracurricular activities. With a choice of over 200 modules, you can hone the key skills employers are looking for. From developing your leadership skills and learning a language to public speaking and volunteering, you will leave university with demonstrable experience that sets you apart from other graduates. For further information, visit nottingham.ac.uk/careers/advantage

Key employment sectors for our graduates are:
- engineering professionals
- quality and regulatory positions
- natural and social science industries
- information technology and telecommunications

* Known destinations of full-time home undergraduates who were available for work 2015/16. Salaries are calculated based on the median of those in full-time paid employment within the UK.
How do I apply?

All applications for undergraduate study at Nottingham, including applications by international students, must be made through UCAS.

You can apply online at ucas.com and will be notified of decisions through UCAS Track.

Your personal statement
This is the section of your UCAS form that tells us most about you, and you should make the best use of it. Be as specific and detailed as you can – we would like to see that you are a student who can work hard, be self-motivated and make the best possible use of the opportunities that our courses offer you. We would also like to hear about any skills you have gained through extracurricular activities.

Minimum entry requirements
Unless otherwise stated in individual course profiles, all UK applicants should have GCSE English grade 4 (C) as a minimum.

Alternative qualifications
In this brochure you will find our A level and International Baccalaureate entry requirements but we accept a much broader range of qualifications. For more details, visit nottingham.ac.uk/ugstudy/applying

Flexible admissions policy
In recognition of our applicants’ varied experience and educational pathways, we employ a flexible admissions policy. If we judge that your situation has adversely affected your achievement, then we will consider this when assessing your academic potential. Some courses may make a slightly lower offer. For more information about this policy, see nottingham.ac.uk/ugstudy/applying

Mature applicants
We encourage applications from mature applicants who have a significant gap in education. You should apply through UCAS. Find out more at nottingham.ac.uk/mature

International applicants
The University provides a range of information and advice for international applicants. If you are unable to attend an open day, we can meet you in your country at one of our overseas events or arrange an individual visit to the University. For further information please visit nottingham.ac.uk/go/international-applicants

Deferred entry
Applicants who wish to defer their entry by a year will not be at a disadvantage. Please tell us something about your plans for your gap year in your UCAS personal statement.

Equal opportunities policy
The University aims to create the conditions whereby students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, race, colour, nationality, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, trade union membership, family circumstances, sexual orientation or other irrelevant distinction.

nottingham.ac.uk/ugstudy/applying
This brochure has been drafted in advance of the academic year to which it applies. Every effort has been made to ensure that the information contained in this brochure is accurate at the time of publishing, but changes (for example to course content) are likely to occur given the interval between publication and commencement of the course. It is therefore very important to check our website for any updates before you apply for the course by following nottingham.ac.uk/ugstudy. Where there is a difference between the contents of this brochure and our website, the contents of the website take precedence.