Chemical and Environmental Engineering
Meet expert academics who are pushing forward boundaries

Get hands-on experience with a year in industry

Develop the skills and knowledge needed to become a Chartered Engineer

Study abroad opportunities experience a new country and culture

Build key, transferable skills sought after by top employers

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

All our courses are accredited by relevant industrial bodies

 Ranked 3rd in UK for chemical and environmental engineering

*The Times Good University Guide, 2019.*
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 in your future career. 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 process design at professional standard 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.

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 pages 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>
</tr>
</tbody>
</table>

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 preessional 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 preessional 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 specialist areas. Most students on the MEng programme including an industrial year, will undertake their industrial placement at the end of year three.

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).

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 and by the end of the year, you will learn how to carry out site investigations and prepare environmental impact assessment. 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.

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.

Most students on the MEng programme including an industrial year will undertake their industrial placement at the end of year three.

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).

Typical modules

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<tr>
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<th>Year two</th>
<th>Year three</th>
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<tbody>
<tr>
<td>Core</td>
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</tr>
<tr>
<td>▪ Chemistry for Engineers</td>
<td>▪ Analytical Measurement</td>
<td>▪ Air Pollution</td>
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<td>▪ Fluid Mechanics</td>
<td>▪ Calculus, Probability and Numerical Methods</td>
<td>▪ Advanced Transport Phenomena</td>
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<td>▪ Fundamentals of Engineering Design</td>
<td>▪ Environmental Assessment</td>
<td>▪ Design and Project Management</td>
</tr>
<tr>
<td>▪ Introductory Geology</td>
<td>▪ Hydrology and Hydrogeology</td>
<td>▪ Hazardous Waste Management</td>
</tr>
<tr>
<td>▪ Mathematical Methods</td>
<td>▪ Materials and Sustainable Processes</td>
<td>▪ Multicomponent Separations</td>
</tr>
<tr>
<td>▪ Thermodynamics and Heat Transfer</td>
<td>▪ Separation and Particle Technology</td>
<td>▪ Process Engineering Labs</td>
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<table>
<thead>
<tr>
<th>Year four (MEng only)</th>
<th>Optional</th>
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<td>Core</td>
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<tr>
<td>MEng Project – combined design and research group project, planning, executing and reporting on an individual research study.</td>
<td>▪ Air Pollution 2</td>
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<tr>
<td>▪ Air Pollution</td>
<td>▪ Contaminated Land</td>
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<tr>
<td>▪ Environmental Risk Assessment</td>
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<tr>
<td>▪ Energy Storage</td>
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<td>▪ Fossil Energy Resources and Utilisation: Past, Present and Future</td>
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<td>▪ Power Generation and Carbon Capture</td>
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<td>▪ Process Risk Benefit and Analysis</td>
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<td>▪ Process Synthesis and Design</td>
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<td>▪ Renewable Energy from Wastes</td>
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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
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 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. At the end of year two, you can elect to transfer between BEng and MEng courses. This is the most common time for students to take a year out to work in industry or study abroad.

**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.

Most students on the MEng programme including an industrial year will undertake their industrial placement at the end of year three.

**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).

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<tr>
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<td>■ Reactor Design</td>
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<td></td>
<td></td>
<td>■ Water Treatment</td>
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**Year four (MEng only)**

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

Optional
- Environmental Risk Assessment
- Multiphase Systems
- Power Generation and Carbon Capture
- Process Synthesis and Design
- Renewable Energy from Wastes
- 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

How will I study?

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

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.

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

£27,001 was the average starting salary*•

Take your degree further

Our courses have a strong focus on preparing you for professional practice with modules 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

* Known destinations of full-time home undergraduates who were available for work 2016/17. Salaries are calculated based on the median of those in full-time paid employment within the UK.
How to apply

All applications for full-time 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 students, who are defined as 21 years old and over. 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/international

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.

If you wish to declare a disability, please ensure that you have ticked the appropriate box on your UCAS application form. Disclosure of this information will not affect your application.

In 2019/20 the Core Bursary will offer up to £2,000 for each year of undergraduate study.* For more details, see nottingham.ac.uk/financialsupport

* To eligible home fee status students.
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.