Help Transform Tomorrow.
Undergraduate Courses in Chemical Engineering.
You’ll be open and outward focused, comfortable working in or leading culturally diverse and interdisciplinary teams and be excited to attack complex and wicked world problems.

Here at Sheffield you’ll become an innovative product developer, forward looking, a risk taker and a trail blazer. You’ll be proud of the manufacturing heritage of our university and of our city.

21st century Chemical Engineers at Sheffield need to be both product and process engineers who develop new products, as well as design the processes that manufacture them. Here you’ll learn to develop, characterise and reverse engineer new products for high value manufacturing, biotechnology, and clean fuels.

The Sheffield Chemical Engineer has a passion for science and maths and will be a world class problem solver.

We’ll equip you with everything you need to deliver sustainable solutions to support an ever growing, global population – study at Sheffield and you could literally change millions of lives.

As a Sheffield Chemical Engineer, you’ll generate solutions for 21st century grand challenges in energy, climate change and human health.
What is Chemical Engineering?

Chemical Engineering is a discipline influencing numerous areas of technology. In broad terms, Chemical Engineers conceive and design processes to produce, transform and transport materials — beginning with experimentation in the laboratory followed by implementation of the technology in full-scale production.

The products most commonly associated with Chemical Engineering are petroleum and gas but also include consumer goods, such as shampoo, washing powders, pharmaceuticals and food and drink.

Chemical Engineers working in the chemical industry investigate the creation of new polymeric materials with important electrical, optical or mechanical properties. This requires attention not only to the synthesis of the polymer, but also to the flow and forming processes necessary to create a final product.

In biotechnology, Chemical Engineers help design production facilities that use microorganisms and enzymes to synthesise new drugs to keep us all healthy.

Problems in environmental engineering that engage Chemical Engineers include the development of processes (e.g. catalytic converters, effluent treatment facilities) to minimise the release of, or deactivate, products harmful to the environment.

In addition to these careers in the chemical, oil and gas, pharmaceutical and sustainable energy industries, chemical engineers enjoy increasing opportunities in electronic device fabrication and environmental engineering.

As a Sheffield Chemical Engineer you’re going to be in great demand because a vast number of industries depend on the synthesis and processing of chemicals and materials.

Outstanding Facilities

You’ll get to study in The Diamond building, our largest ever investment in teaching and learning.

The six-storey building boasts specialist teaching facilities, including a range of 3D enabled lecture theatres, seminar rooms, open-plan learning spaces, library and IT services, and space for informal study including a café.

The building also has specific chemical engineering laboratories which offer bespoke learning which include; a thermodynamics lab, fluid mechanics lab, analytics lab and two dedicated biological labs. There is also a virtual reality suite, with dual 4K active wall and floor stereoscopic 3D projection.
“I chose Sheffield to study Chemical Engineering over other universities not only because of the huge range of brand new engineering facilities, but also because of the great vibe I got from the Department on the open day.”

Tom Wilkinson
MEng/Chemical Engineering
Situated in the Diamond our pilot plant is an educational cornerstone for Chemical Engineers. With the plant you’ll test and explore integrated processes with state-of-the-art simulations and world leading control systems in a safe, product oriented environment. You’ll develop as an engineer immersed in physical and virtual systems that address some of the key grand challenges of this century: energy and climate change, affordable medicines, and bioengineered products.

You’ll undertake virtual experiments using simulations as well as physical experiments on the pilot plant.

The plant has three cutting edge integrated manufacturing processes at a pilot scale, incorporating traditional and modern unit operations:

- Manufacturing of high value formulated products e.g. pharmaceuticals
- Next-generation bio-manufacturing using sustainable feedstocks
- Production of sustainable liquid fuels from renewable resources
- Dedicated process control room with industry standard software
- Virtual and augmented reality integrated into teaching

You’ll use the pilot plant and data collected from the pilot to enhance your learning in the core curriculum such as chemical process principles and heat and mass transfer.

The plant provides a rich source of advanced data and inspiration for both calculation exercises and open ended team projects. You’ll revisit the pilot plant for a more detailed hands on experience to support your specialist course.

With these brand new facilities you’ll be in a specialist environment to support modern active, experiential learning. The pilot plant will develop your independent learning skills and important engineering attributes including process safety, health and safety, professional ethics, leadership, team work, management and communication.

DIPP has software and products sponsored by major manufacturing companies including NiTech, Solaris Biotech and GEA. In addition to giving you real world experience, the manufacturers benefit from having around 500 students per year exposed to their products and engineering philosophies. DIPP will also be used for training and upskilling employees of UK companies in modern engineering processes and tools.

“Undergraduate Courses in Chemical Engineering

Undergraduate Courses in Chemical Engineering

Diamond Pilot Plant (DiPP)

The scientific excellence of the University of Sheffield, together with the analytical and technological capabilities of this new plant are a differentiator. I have been impressed with the research and teaching I have seen... this work will contribute to elevate our mastership of powder science and technology.”

Dr Reinhard Behringer
Head Institute of Materials Science at Nestlé

“We have a preference for action over rhetoric; we have a preference to do things, not just talk about them; we have a preference for our students to do things, not just hear us talk about them and the Pilot Plant is as fine example of this as you could hope to see.”

Professor Mike Hounslow
Vice President and Head of Faculty (Engineering) at The University of Sheffield
All of our students are taught together for the first two years of their degree programme. In Year 1 you’ll enhance your knowledge of mathematics and science and be introduced to the principles of chemical engineering, including process design and laboratory work.

You’ll spend time working in teams on a design brief and working in groups with other engineers, producing ideas and solutions to global problems such as waste, clean water and energy.

In Year 2 practical applications of theory will be developed through labs and classes. You’ll spend time focusing on skills essential to employability including communication, networking and leadership. At the end of Year 2 you’ll specialise your study, transferring onto one of the degrees listed in the back of this booklet.

In Year 3 you’ll study advanced concepts and carry out a group industrial process design project. In Year 4 MEng students work on a major individual research project. This directly contributes to departmental research, enabling you to be an industry-ready on graduation.

The Institution of Chemical Engineers (IChemE) recognises our graduates’ excellence - all of our undergraduate courses are accredited by them. We’ve a proud and long relationship with the Institute: our original course was one of the founding chemical engineering courses in the UK to be accredited, in 1957. With over 44,000 members in over 120 countries, an IChemE accredited degree is the ticket to chartership, and enables you to work in industry world-wide.
"I chose Chemical Engineering at Sheffield because it offered me the opportunity to apply and expand my scientific theoretical knowledge into practical solutions."

Gionita Saldanha
MEng/Chemical Engineering
You have the fantastic opportunity to apply for our Study Abroad Programme. Study Abroad is a competitive scheme, and we aim to support your interest by providing help and advice. You’ll have the option to choose between a range of agreed one year exchanges with Universities who offer comparable quality Chemical Engineering education.

Hanna Hussain, MEng Chemical Engineering with Biotechnology student, studied abroad in Australia:

“I had the fantastic opportunity to travel to Australia and study at the University of Queensland in Brisbane. This was an amazing opportunity as it allowed me to become much more confident and social but it also allowed me to interact with other engineers from across the globe. I feel this is very important because employers don’t only want you to have the academic side, they also want additional factors and this allowed me to add much more depth to my CV.”

“While I was in Australia I got involved in Engineers Without Borders Australia and had the opportunity to travel to Cambodia for two weeks. We stayed on a rural island and initially observed their lifestyle to see how we could apply our engineering knowledge and potentially improve their lifestyle. We looked at things such as waste disposal, water sanitation and planting of rice grain and we presented our ideas to the community to see if this was something they would like to implement using their natural resources.”

“This was really an eye opener for me seeing how engineering can be used for a positive impact. Humanitarian engineering is something that I would be interested in now as a result of that.”
Enhancing your employability

Our graduate employment record is excellent. Our graduates find jobs quickly after graduation, in fact 90% of our MEng Chemical Engineering graduates are in a job within 6 months of graduating*. Our degrees are designed with your career in mind. Employability is given the same focus in the curriculum as your academic studies.

Our project work is specially designed to develop the skills you’ll need to thrive in industry, training you to apply your knowledge to problems without known solutions and work as part of a diverse team.

We also have a dedicated Employability Officer who will work with you to enhance your employability, from making the most of opportunities on campus to helping you write outstanding applications to placement and graduate roles.

Industrial experience

The Engineering sector employs 5.4 million people across 542,440 engineering companies in the UK.

Our close links with industry help us to make sure our courses are up-to-the-minute and relevant, and our employability events, such as alumni speed networking and industry days, give you access to industry from an early stage in your degree.

Our graduates are employed in a range of sectors including oil and gas, food, pharmaceuticals, energy, nuclear technology, mining, water and manufacturing, working as engineers for companies such as ExxonMobil, BASF, Johnson Matthey, Essar Oil, Centrica, Cargill, AstraZeneca, BOG and Mondelez, as well as in research, finance, defence and consultancy.

You’ll have access to our illustrious alumni. Many former students have gone on to great things, working for some of the world’s top companies including BP, Coca-Cola, GlaxoSmithKline, Jaguar Land Rover, EDF, Shell, Phillips, IBM and Sellafield.

Some provide seminars in partnership with us on cutting edge related topics and work with us to arrange student networking programmes. We also have a graduate LinkedIn network where you can speak with former graduates and see regularly updated job opportunities.

Placements

You’ll be supported by us in finding industrial experience to put your academic learning into context, whether you secure a summer internship at any point during your studies or take a full year in industry in the penultimate year of your course.

Our Employability Officer will provide bespoke support to you during the application process, and your experience on campus will be full of opportunities to make your skills stand out.

You’ll discover that placements are an excellent route into securing future employment, and gaining valuable workplace skills.

Alumni

“...I work at Sellafield Ltd. I’ve just finished the Graduate scheme and moved into a role as a Process Design Engineer. I use basic Chemical Engineering principles daily, I work in retrievals and decommissioning which faces many challenges, including the age, inventory and legacy of the plants.”

Jenny Skyes
MEng Chemical Engineering graduate

* at date of publication
“I chose to study at Sheffield because it’s where I felt I would be given the most guidance in order to help me progress forward with my career prospects.”

Hinesh Patel
MEng/Chemical Engineering
We reward excellence

We offer prizes and scholarships to support our students and also to reward the high standard of their work.

As well as Departmental bursaries, there are University wide scholarships available to help fund your study and enhance your learning experience.

You’ll also be able to apply for the Global Scholarship for summer schools in Europe and Asia. The University will pay the air fare, tuition fees and accommodation.

Getting out and about

Field trips are important to our undergraduate degrees. On the trips you’ll develop new skills and view how learning from the classroom can apply to real world problems. Here at Sheffield we find ways to bring your learning experiences to life and our field trips will be a rewarding and enjoyable experience for you.

Through our network of industry partners you’ll have opportunities to visit a variety of industrial sites. This gives you the chance to experience the scale of various plants and to talk to people in industry. Our field trips run during your study, previous trips have included visits to DRAX power station (the UK’s largest biomass/coal power station) and Veolia’s Energy Recovery Facility in Sheffield.

FAQ’s

If I don’t get the grades for the MEng programme I have applied for, will you automatically transfer me to your BEng or Foundation Year programme?

The entry requirements for our BEng are the same as for our MEng courses. Subject to there being space left on the course we will consider applicants for a place on the foundation year if first year entry requirements are not met.

If you have made us your firm choice and do not achieve our offer, please contact the Admissions Team to discuss your options.

I want to take a year in industry as well as a specialism: which course should I apply for?

All of our MEng specialist programmes are available with a year in industry. If you wish to take this route, please apply for H804 MEng Chemical Engineering with a Year in Industry at the UCAS stage.

Can I transfer between programmes?

You will have an opportunity to transfer between programmes at the end of year 2, subject to satisfactory performance.

What should I include in my personal statement?

We are looking for evidence that you have a strong interest in chemical engineering and have done your research into why the subject would suit you. Previous industrial experience is useful but not necessary.

What is the admissions procedure?

We invite eligible applicants to an Applicant Day at some point between November and March. At this event you will meet staff, current students, see our facilities and find out more about the course. You will also take part in a small group problem-solving activity. We make offers to candidates after Applicant Days.

The small group problem-solving activity focusses on an aspect of the design process. Decisions to make an offer are not based on performance in this activity, but should an applicant miss their offer during Confirmation, we will use feedback on performance in the activity to decide whether we can accept the applicant.

Do you offer any scholarships?

For up to date information on our scholarships, please visit our website.

What are the fees for the course?

All fee information can be found at www.sheffield.ac.uk/ssid/fees
The Department is a keen user of social networking, which provides a means for past, present and potential students to keep track of the Department’s work and news.

Our YouTube channel has videos that illustrate students’ views and our research projects
youtube.com/c/CBESheffield

‘Like’ our Facebook page and find out news about developments from the Department and view images of academics, students and their work
facebook.com/CBESheffield

Keep in touch with up-to-the-minute news from us and re-tweets from industry professionals
@CBESheffield

Follow our Instagram to learn what life is really like in the Department
@CBESheffield

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