BHASVIC

Guide to Higher Education & Employability 22-23

Engineering & Science

Aerospace engineering, Anatomy, Animal science, Astronomy, Biology, Chemical engineering Chemistry, Civil engineering, Electronic and electrical engineering, Food and beverage studies, Forensic science, Genetics, Materials science , Mechanical engineering Microbiology, Physics, Physiology, Plant science, Zoology

Acoustic, aerospace, chemical, construction, mechanical… there are so many different types of engineering course to choose from! Use our list of open day questions to narrow them down…

About the course

- What is the split between theory / practical work in the course?
- Will we get hands-on experience of the course material on field trips or visits?
- Will I be assigned a mentor or personal tutor during my time at uni?
- Will I be able to organise additional tuition with course tutors if I need it?

How much maths is involved?

- How many hours of study a week will I expect to do?
- Is this a four-year MEng course? Will I be a chartered engineer at the end of my studies?

Equipment and facilities

- What books and equipment are necessary for me to buy?
- How much time will I spend in labs, or on practical assignments?

Work experience and placements

- Is there an engineering guild / society for me to join?
- Does the department have contacts in industry?
- Is there an industrial placement involved? Do I organise my placement independently or will I have help?
- Does the uni have a careers office? Are there career fairs and careers advice/assistance for placements and when I graduate?

Assessments

- What is the split between exams / coursework / group work / presentations?
- Do I need to complete a dissertation, or a research-based project?
- Does the department have collections of past papers and revision guides I can use to revise from?

Graduate prospects

- What is the employment uptake like from this course? How many graduates are employed after 1 or 2 years…?
- Does the department organise seminars and conferences that I may be able to attend?
- Can I move on to a related PhD or Masters after my course?

What to ask on a Biological Science open day

Studying one of the sciences – from botany to zoology – will involve some lab work, but how much? Use our list of open day questions to get the answers you're looking for.

About the course

- Who will be teaching me? Do my lecturers still practice in the field of medical research?
- What modules are optional on this course? Is it better to specialise early on?
- Can I choose modules outside this course?
- What skills will I learn on this course?

Equipment and facilities

- What books and equipment should I buy?
- How much time contact time do we have per week and how is this structured?
- How much time do we get in the labs?
- Are the labs modern / state-of-the-art? What areas does the department specialise in?

Placements and field trips

- Are there any research trips I can go on, or vacation projects I can get involved with?
- Will I need to do an industrial placement? Do I organise this, or will the university arrange it?
- Do I need to do some work experience before I start this course?

Assessments

- What is the split between individual exams and group work?
- Do I need to complete a dissertation or research-based project?
- Can I choose the subject of my research?
- If I do a placement, will I be marked on it?

My prospects

- How does this course help me get a job? What sort of jobs have previous graduates gone on to do?
- What percentage of graduates continue into PhD-level study? Can I get funding from the university if this is what I want to do?
- Does the uni have links with industry so I can look for jobs?

What to ask on a Chemistry/Physics course open day

Thinking of studying chemistry, physics or geology? Want to know what's involved? Use our list of open day questions to find out whether the course is right for you.

About the course

- Are my teachers also practitioners – still work in industry?
- Do I need any prior experience in this area before I start the course?
- Where will be learning – in lectures, seminars or in the lab?

Facilities and equipment

- What books/equipment is necessary for me to buy?
- How much time will I need to spend in the library?
- How much time in the labs?
- Placements and work experience
- Are there any industrial placements/field trips?
- Is there a chance for me to study abroad?

Assessment

- What is the split between exam/coursework/Group works/presentations?
- Do I need to complete a dissertation/ research based project?
- What is the weighting for each year of the course?

Graduate prospects

- How can I make the most out of this course?
- What have graduates on this course gone on to do?

Aerospace engineering

If you're seeking a future that revolves around innovation and assisting mankind in reaching new heights (literally), aerospace engineering will stimulate you to no end. Because aerospace engineering deals with the design, analysis, manufacture and operation of highly-complicated structures and equipment – which exist to defy gravity, safely – the field is large-scope, challenging and highly-demanding. The field combines mathematics, physics and computer science with design and engineering. Graduates can proceed into well-paid sectors such as aerospace, commercial airline, military and computing.

- MATHS
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- COMPUTER-LITERATE
- PRACTICAL SKILLS
- PHYSICS
- HIGHLY TECHNICAL
- THEORETICAL PHYSICS

Example course modules

- Properties of materials
- Introduction to aerodynamics
- Circuits, signals and systems
- Mechanics of flight
- Propulsion and turbomachinery
- Thermodynamics
- Control systems
- Aerospace vehicle design
- Structural dynamics

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

A-levels (or equivalent) usually required

- Maths

- Physics

Useful to have

- No Specific Requirements

Application checklist

- January application
- Personal statement
- Interview

Career prospects

The UK aerospace industry employs over 120,000 people across 400 organisations, so there are lots of opportunities for graduates to progress onto. Many go on to roles such as engineers, researchers, designers and maintenance technicians, applying their knowledge to design, develop and maintain everything from commercial airliners, military aircraft, satellites, spacecrafts, and even racing cars. Graduates can go on to work with world-renowned brands like British Airways, Airbus, Formula One and Rolls-Royce. Additionally, you're not just limited to opportunities within the UK; these massive brands and organisations attract the top talent in the world to work for them, so you can expect to work in very international teams.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management.

Jobs where this degree is useful

- Aerospace engineer
- Maintenance engineer
- Manufacturing systems engineer

Other real-life job examples

- Production manager
- Structural engineer
- Automotive engineer

What employers like about this subject

Employers in the aerospace sector look for graduates who will take initiative and split away from the path previously explored, in order to discover new innovations. Many graduates move on to work in teams made up of individuals from various corners of the world. Therefore excellent interpersonal and communication skills will be important in order to prosper in these kinds of environments, especially when large teams are involved – here, a great deal of technical leadership is required. Meanwhile, the math skills and methodical approach to problem-solving are qualities which can be applied to a number of other fields and roles.

Other routes

Apprenticeships

If you want to combine work and study while earning a salary, you could consider an apprenticeship. Which apprenticeships are available, and how you apply, depends on where you live.

Find out more about apprenticeships across the UK.

Higher apprenticeships (Level 4)

- Aircraft maintenance certifying engineer
- Automation and controls engineering technician
- Propulsion technician
- Software tester
- Software developer

Degree apprenticeships (Levels 5 – 7)

- Air traffic controller
- Aerospace engineer (degree)
- Aerospace software development engineer (degree)
- Control/technical support engineer (degree)
- Electrical/electronic technical support engineer (degree)
- Embedded electronic systems design and development engineer (degree)
- Electronic systems principal engineer
- Product design and development engineer (non-integrated degree)
- Systems engineer (degree)
- Through life engineering services specialist

Sources & Links

Aerospace Engineering Subject Guide | Why Study Aerospace? | UCAS

See also end of guide

Anatomy

Are you fascinated by the structure of living things and how the human body works? If so you may be interested in a biomedical science degree in either anatomy or physiology, although courses usually have a mix of both topics. Anatomy focuses on the human skeleton, cells, tissues and organs and may include human dissection. Graduate destinations include university or industry-based research, the pharmaceutical industry, lab-based careers in hospitals, medical sales or further study in medicine.

- TIME IN LABS
- EXAM-INTENSIVE
- MEDICAL
- PRACTICAL WORK
- RESEARCH-INTENSIVE
- BIOLOGY
- PHARMACOLOGY
- CHEMISTRY

Example course modules

- Molecules and cells
- Evolution and biodiversity
- Functional neuroanatomy
- Locomotor system
- Core concepts in anatomy
- Practical human anatomy
- Circulatory and respiratory anatomy
- Clinical applied anatomy
- Advanced neuroanatomy
- Developmental biology

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about anatomy

I found my course very interesting from day one. Compared to some other courses, I have quite a lot of contact hours, although a fair amount is lab work where we go over what we've learned in a practical setting. My modules are set out in a way that I am graded on attendance, practical work and one or two essays per module over the semester, followed by an end of module written exam (and, in some cases, a practical exam too). The facilities on my course are very important in our hands-on learning and are state of the art and very impressive.

3rd year, University of Dundee

My course requires you to attend tutorials and practicals, both of which generally occur on a fortnightly schedule. But you have these things for many modules, so it can build up to something substantial! Most practicals only require answers to a few set questions, with accompanying graphs, but, in some cases, essays with evidence of some self-directed research are expected.

1st year, Cardiff University

The first year is very general and covers the main principles of biology, before you start specialising in second year. This gives you a fantastic basis in your career, as you have a very broad view of biology with the added benefit of having a specialisation. Coursework covers lectures, lab work, essays, spot tests, tutorials, and lab reports.

3rd year, University of Glasgow

A-levels (or equivalent) usually required

- Chemistry
- Biology

Useful to have

- Psychology
- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Career prospects

Anatomy and physiology graduates often take further study – usually moving on to a medical degree, whilst pathology graduates tend to go into work.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Anatomical laboratory technician
- Haematologist
- Medical doctor (after extra training)

Other real-life job examples

- Business analyst
- Events manager
- Work experience coordinator

What employers like about this subject

An anatomy degree will help you develop subject-specific skills in investigating the form, function and development of the human body, in modern scientific theory, in the use of technology in anatomy and in practical laboratory skills. Transferable skills you can develop include excellent communication and reporting skills, team-working, project management, problem-solving, self-motivation, research and excellent numeracy skills. Anatomy is a very specialist subject and many graduates go on to complete a medical degree after completing their anatomy studies. Anatomy graduates usually work in universities or hospitals on graduating.

Sources & Links

See also biology

Animal science

This course involves studying animal biology, how animals function and how we interact with them and depend on them for food and leisure. You'll then learn how to apply this knowledge to issues relating to agriculture, livestock production, bio-ethics and sustainable food production. Courses can also include animal behaviour and welfare. The possible careers are diverse and include animal research and advisory services, animal nutrition, consultancy in the agricultural and food industries and food marketing.

- BSC
- PRACTICAL PLACEMENTS
- TIME IN LABS
- CHEMISTRY
- BIOLOGY
- PRACTICAL WORK
- FIELD TRIPS
- AGRICULTURE
- FOOD

Example course modules

- Principles of animal science
- Concepts in conservation
- Animal health
- Current issues for the animal sciences
- Animal welfare and disease
- Animal husbandry
- Animal nutrition
- Introduction to business practice
- Legislation in the animal industry
- Wildlife conservation in the United Kingdom

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about animal science

For my animal science course, there are quite a few hours of lectures per week, sometimes up to 24. There are

some modules which involve practicals, but the course mainly consists of lectures. There are quite a few essays and reports to write throughout the year and lots of exams in the final term of the year. You receive basic feedback on reports and essays but not on exams. There isn't much chance for hands-on animal experience at the University, but there are some trips throughout the year.

1st year, University of Reading

I am doing equine science and thoroughbred management and the course has been so interesting and challenging that I have loved every minute of it. I have about 12 hours of scheduled contact time with the lecturers, plenty of hands-on practicals to put science and dissecting skills to the test, and a reasonable amount of coursework taking the pressure off exam time.

1st year, Oxford Brookes University

The amount of teaching is just the necessary amount in order to get you interested and motivated, so they do not 'feed you from the spoon' and you're not required do everything by yourself either. On my course I got a lot of interesting visits to different companies and facilities outside university, organised talks with visiting lecturers and met lots of inspiring people!

3rd year, University of Bristol

A-levels (or equivalent) usually required

- Chemistry
- Biology

Useful to have

- Physics
- Mathematics

Application checklist

Here's a guide to what to expect from the application process - also check individual university entry requirements, as these may differ.

- January application
- Personal statement

Career prospects

These stats refer to the prospects for graduates from both general animal studies courses and those for particular animals (such as equine science). Graduates don't generally get jobs as vets when they graduate; the most common jobs tend to be roles caring for animals, such as veterinary nurses. Some of these jobs are not currently classified as professional level occupations, but in reality, graduates report that their degree was necessary in getting the job, and that they got the jobs that they wanted, meaning the stats you see might not completely represent just how useful these degrees are for getting into animal care careers.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Farm manager
- Veterinary nurse
- Fishery manager

Other real-life job examples

- Laboratory technician
- Agricultural scientist
- Animal welfare officer

What employers like about this subject

Studying for a degree in animal science will give you specialist skills including the health, welfare and biology of animals; their care and maintenance and principles and developments in animal sciences. You will also gain useful transferable skills such as good communication, team-working, problem-solving and decision-making skills. This degree does not qualify graduates to work as vets, although animal science graduates do sometimes go on to study veterinary postgraduate programmes after graduating from their first degree. Animal sciences graduates get work in industries such as farming, manufacturing (particularly animal nutrition), pet supplies, zoos and nature reserves and veterinary practices.

Personal Statement tips – Animal Science

A degree in animal science opens up numerous career options working with animals, or could be a stepping-stone into a graduate veterinary medicine course. If it's your degree of choice, here are some personal statement pointers.

Dr Darren Juniper, Programme Director and Admissions Tutor for Animal Science at University of Reading, explained what he's looking for and how a well worded, logical personal statement that 'shows where you're coming from and going to' can sometimes be the deciding factor:

'In essence a good UCAS statement for animal science should detail logically what experience(s) you have had with animals and within the animal industry; this can include vets, equine based yards, rehoming centres, and farms. Generally, the more experience the better. You should also indicate what areas of the "animals industries" interest you (captive, veterinary medicine, equine, conservation, rescue etc.) and what it is you hope to achieve by studying animal science. A number of students when starting already have an idea of where they would like their degree to take them.'

For another perspective, University of Bristol's website outlines the evidence they would like from applicants for their animal behaviour & welfare science degree, including an appreciation of the scientific nature of the degree and your thoughts about relevant political and ethical issues.

Astronomy

Are you fascinated by how the universe works and by distant stars and galaxies? If so - and you are good at physics and maths - a degree in astronomy or astrophysics could be for you. Courses are intellectually challenging with in-depth study of physics and core modules in maths. You'll also learn to operate telescopes and other state-of-the-art equipment. Graduates pursue research careers or work in physics jobs such as high-tech product development, nuclear power and medical physics.

- MATHS

- BSC
- TIME IN LABS
- EXAM-INTENSIVE
- MATHEMATICAL NUMBER-CRUNCHING
- THEORETICAL AND CONCEPTUAL
- COMPUTER-LITERATE
- PRACTICAL WORK
- HIGHLY-TECHNICAL
- PHYSICS

Example course modules

- Health issues and ethics
- Foundations of astronomy
- Introduction to astrobiology
- Physics of the sun
- Igneous petrology
- Stars and their spectra
- Relativity
- Cosmology
- Metamorphic petrology
- The physical universe
- Optical physics and electromagnetism

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about astronomy

One of the great things about this course is the amount of opportunities you receive. Not only do you get access to research grade telescopes all over the world, get to travel to other countries to work on telescopes and meet the scientists, you also get to take part in events such as 'Stargazing Live' and 'Astrofest', where you can meet lots of people with the same interests. It is a great way to learn and this is where you realise just how much you have learnt during the course. This really is an enjoyable course, so much so, I hate the summer breaks because I just want to get back to Uni!

1st year, University of South Wales

I have about 18 hours of teaching each week, which is good as you have a lot to learn, but doesn't give you much free time. My course is very interesting and challenging, I'd really recommend it. I usually have a couple of assignments a week, and I've done a few essays, project reports and a presentation.

1st year, University of Sussex

I study natural sciences (physics / astrophysics) and it's very challenging. Far more mathematical than any other physics degree. I have studied astrophysics this year and it has been by far the most interesting and rewarding year of study I have ever had. Essays don't exist within physics. It is more or less 95% exams. There are some computing practicals and experimental labs which make up the remainder.

3rd year, University of Cambridge

A-levels (or equivalent) usually required

- Maths
- Physics

Useful to have

- Chemistry
- Further maths

Application checklist

- January application
- Personal statement

Career prospects

Not a lot of people study astronomy as a first degree, and if you want to be one of the small number of people who start work as an astronomer every year, you will need a doctorate – so 40% of graduates go into further study. Astronomy graduates, however, are versatile, going into all parts of the jobs market. If you want to find out more specifically about the prospects for your chosen subject, it might be a good idea to go on open days and talk to tutors about what previous graduates from your chosen subject went on to do.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Physicist
- Aerospace design engineer
- Astronomer

Other real-life job examples

- Actuary
- Software developer
- Instrumentation engineer

What employers like about this subject

Students on an astronomy degree will gain subject-specific skills including planning, execution and reporting of experiments and data analysis and the relation of that data to theories in physics and astronomy. Transferable skills you can develop will include communication skills, project management, IT skills, time management, team-working, problem solving, data investigation, high-level numeracy and good research skills. Astronomy graduates get jobs in the space, scientific research, IT and finance industries. If you are aiming for a career in research, you will usually need to take a postgraduate qualification (probably a doctorate) after your first degree and so many astronomy graduates take further degrees.

Sources & Links

See also end of guide & Physics

Biology

If you enjoy biology but not sure which area of this vast subject to specialise in, a broad-based biology course may suit you. Biology is the study of living things from tiny micro-organisms, plants and animals to human beings. You will learn about genetics, environmental biology, plant biology, zoology (including animal behaviour), biochemistry and molecular biology with options to specialise as your interests develop. Graduate destinations include research and development, teaching, management and finance.

Example degrees: Human biology, marine biology, molecular biology, cell biology, life sciences, anatomy, Physiology, microbiology

- PRACTICAL PLACEMENTS
- BSC
- TIME IN LABS
- TIME ABROAD
- RESEARCH
- PRACTICAL WORK
- ENVIRONMENTAL
- FIELD TRIPS
- PLANTS
- ZOOLOGY

Example course modules

- Biochemistry
- Evolution and biodiversity
- Marine and terrestrial ecology
- Plant science
- Human physiology
- Habitat ecology
- Molecular methodology for biologists
- Cell structure and function
- Principles of genetics

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about biology

I find my biology course extremely interesting and fairly challenging. I had three areas to my course - biomolecules,

genetics and physiology - all of which required around one three-hour lab practical every week. Lab practicals were scary at first for someone as shy as me but it really develops skills and understanding and is actually really fun.

1st year, Manchester Metropolitan University

I chose the ecology pathway for my biological sciences degree. It's a whole lot better than just trees and insects. I think it's one of those pathways where if you like being outdoors and knowing what things are, how they move, what evolved from what, then you know you want to do ecology, as it was for me. Some course content has been common sense, whilst other bits are a lot more challenging (how jellyfish 'swim' needs a lot of studying), but the field trips, which have consisted of various reserves, a 'green' farm and the zoo (!) have been fantastic.

1st year, Nottingham Trent University

My course is quite academically intense. Although the work isn't that hard, there is a lot of it. The course covers three main areas - cells and genes, organisms, and ecology. In the first year each module is compulsory, though in the second and third years you have a choice of more specialised topics. The method of assessment is through practicals and written exams, as well as a second year project.

1st year, University of Oxford

A-levels (or equivalent) usually required

- Biology

Useful to have

- Chemistry
- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Top 10 Universities for Biology - Complete University Guide 2021

- **Cambridge, Oxford, Imperial, St Andrews, Durham**
- **York, Warwick, Nottingham Trent** – all very high student satisfaction scores
- **Kings College, Sussex, Kent** - all with top graduate prospects

Employability

There are jobs for biologists in science and clinical labs and in the health, food and water industries. But you can actually get all sorts of jobs with biology in sectors ranging from PR to accountancy.

If you choose to go onto medicine and healthcare there are lots of different specialties to choose from (including midwifery), and the most common by far is adult nursing, and for that you will need to study at degree level to be a qualified nurse.

That’s not to say that you can’t do anything else. Some biology students go onto find jobs in health or caring professions, or management. The transferable skills gained from studying biology would be valued in a wide range of professions.

What employers like about this subject

Studying for a degree in the diverse subject of biology means that students can learn a range of subject-specific skills including statistical skills and good laboratory practice. Transferable skills you can develop on a biology course include advanced numeracy; written and spoken communication and problem-solving skills.

Biology graduates are in demand from employers such as hospitals, clinical and scientific analysts, the pharmaceutical industry, government, nature and conservation reserves, zoos and botanical gardens. If you're aiming for a career in research, you will usually need to take a postgraduate qualification (probably a Doctorate) after your first degree.

Transferable skills

Teamwork, Technical ability, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Administration, Analytics, Discipline

Example careers

- Animal physiotherapist
- General practice doctor
- Health promotion specialist
- Physician associate
- Science writer
- Dental Hygienist
- Sustainability consultant
- Laboratory work
- Countryside management
- Veterinary nurse
- Zoologist
- Healthcare

Personal statement advice: biology

We asked a biology admissions tutor what the secret is to writing a successful biology personal statement. Apparently, there isn't one… it's all about genuine passion, enthusiasm and curiosity.

The simple objective to writing a successful biology personal statement is to show that you understand what you're applying for, along with some evidence of your enthusiasm, and commitment to the subject.

A successful biology personal statement

University of Southampton admissions tutor, Dr Malcom East, outlines key ingredients he would like to see evidenced in your biological sciences statement:

- You understand something about the course you're applying for, with a realistic perception of what it involves.
- You're enthusiastic about the subject and can show some commitment to it. You can demonstrate this by writing about your wider reading, Extended Project, work experience or any other way you have engaged with biological science beyond the syllabus.
- Your commitment and appetite for the subject

Admissions tutors at the University of Birmingham are looking out for something you've done, or something you think, that conveys your commitment to the subject:

What topics do you find particularly intriguing?

Have you done anything interesting or unusual that has involved engaging with the subject beyond the syllabus, or through your extracurricular interests or voluntary work?

Have you been on an interesting field course or visited a university laboratory and learned something from it?

A paragraph where you explain what you gained from one or two interests or activities like these would be very effective. Remember to explain things in your own words, ensure it has a good structure, and steer clear of poor grammar and spelling.

Cardiff University's selectors are no different. They want you to demonstrate a commitment, motivation, and determination to further your knowledge in biosciences, along with any experience or other non-academic interests that highlight your personal qualities in general. They also want to see from your statement that you can communicate this in a way that's concise and coherent.

Conveying your enthusiasm

'An enthusiasm for the subject counts for a lot. We're always interested to hear what inspires our applicants about their chosen subject, whether it's a project they are involved in at school, something they pursue as a hobby, or any relevant work experience. We read through every statement we receive and an interesting, thoughtful, personal statement always stands out.' Dr Paul Devlin | Admissions Tutor For Biological Sciences – Royal Holloway University Of London

Paul also told us all their applicants are invited for interview and 'the personal statement is the basis of that interview', so he recommends that you write about things you would like them to ask you about.

So if you're fascinated by the machinery of the cell, human health or disease, the natural environment, any other specific aspects of biology, or just the science of living organisms in general, then make sure you include it. By reflecting on one or two of these interests in your statement, you're likely to make a strong impression.

It's good to include some non-academic content

Admissions tutors at King's College London like to see an element in your statement that reflects on your general reading, debating, contributing to school, college or community life, or any cultural or sporting interests, as they are keen for you to continue this at uni and to contribute to the 'vitality of the College community'.

However, if your home or personal circumstances mean it has been difficult to extend your knowledge or experiences outside of school or college, don't worry. As Cardiff points out, universities will usually be sympathetic to this.

How critical is the personal statement?

If you achieve the required grades and can genuinely demonstrate that you've got the necessary enthusiasm and commitment, then you should be in a strong position. Your personal statement, in combination with your academic reference, will be very important for demonstrating those qualities.

If your statement clearly shows you have also applied for a clinical programme like medicine, veterinary science or dentistry, that lack of commitment to biology is likely to be a turn-off to some universities,

including University of Bristol. However, others take a different view on that, or may consider a separate statement sent directly to them. Do research this in advance!

According to University of Southampton, it's if you don't quite get the grades you need that the personal statement becomes especially critical. If you find yourself in this position, then your statement could turn out to be your lifeline on results day. As Dr East put it: 'If we have a few places left, then the statement will probably determine whether you're in or out'.

Other routes

Degree apprenticeships (Levels 5 – 7)

- Clinical trials specialist (degree)

Biology 	• Biology careers booklet. • Higher Education data for Biology and related courses, including medical careers and engineering. • Information and advice on apprenticeships. • Biology CREST Award portfolio course information. • Access to New Scientist and Biological Sciences Review Magazine.	BHASVLE – Biology > Employability folder/BHASVLE – library/Social media

- Ecologist (degree)
- Laboratory scientist (degree)
- Materials science technologist
- Psychological wellbeing practitioner
- Research scientist

Sources & Links

Biological Sciences Subject Guide | Why Study Biological Sciences? | UCAS

Molecular Biology, Biophysics, and Biochemistry | Subject Guide | UCAS

Society of Biology

Institute of Biomedical Science

UniTasterDays webinar on demand

Future Learn

University of Brighton https://www.brighton.ac.uk/courses/study/biological-sciences-bsc-hons.aspx

University of Bristol Applied Anatomy http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/applied-anatomy/

Biochemistry http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/biochemistry/

Biological Sciences http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/biological-sciences/

Biomedical Sciences http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/biomedical-sciences/

University of Exeter https://youtu.be/A6gCY0JRlJYhttps://www.youtube.com/watch?v=gYGiYKgcfgU

University of Leeds https://www.stem.leeds.ac.uk/information-for-teachers/onlinecourses/

https://www.healthsciences.leeds.ac.uk/events/online-workshop-series-recordings/

Subject Taster https://le.ac.uk/study/undergraduates/taster-days/biological-sciences

https://www.liverpool.ac.uk/study/undergraduate/virtual-open-day/

University of Plymouth https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-biological-sciences

https://www.royalholloway.ac.uk/studying-here/undergraduate/biological-sciences/genetics-with-a-year-in-industry/

https://www.royalholloway.ac.uk/studying-here/undergraduate/biological-sciences/molecular-biology-and-environmental-change-with-a-year-in-industry/

https://www.royalholloway.ac.uk/studying-here/undergraduate/biological-sciences/zoology-with-a-year-in-industry/

https://www.futurelearn.com/courses/play?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_PLAY

University of Sussex https://www.sussex.ac.uk/study/applicant/subjects/biochemistry-and-biomedical-science

https://www.sussex.ac.uk/study/applicant/subjects/biology

https://www.sussex.ac.uk/study/undergraduate/courses/life-sciences-with-a-foundation-year-bsc

Chemical engineering

Chemical engineers are involved in the design, development and operation of systems and procedures that change raw materials into useable and useful end products - which could be anything from pharmaceuticals, to make-up, to plastics. You'll need a strong grasp of maths and chemistry and will develop your knowledge both at a molecular level through to its real-world application in large-scale commercial or industrial environments. Many courses involve work placements and sandwich years for on-the-job training.

- COMPUTING
- MATHS
- VOCATIONAL
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- EXAM-INTENSIVE
- PRACTICAL SKILLS
- PHYSICS
- BENG

Example course modules

- Material sciences and engineering
- Introduction to process engineering
- Process modelling and thermodynamics
- Introduction to petroleum engineering
- Engineering design fundamentals
- Mass and energy balances
- Industrial chemistry
- Process design project
- Chemical reaction engineering
- Cell biology

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about chemical engineering

I have about 20 hours timetabled each week, including lectures (8 hours), problem based learning (6 hours), PASS (1 hour), computer-based learning (2 hours) and laboratory work (3 hours). The course is varied and challenging, but a nice step up from A-levels. My coursework involves online or in-class tests every few weeks, and occasionally a written piece which involves solving mathematical / engineering problems based on the lectures. These require further reading behind the subject and a fair bit of personal work.

1st year, University of Manchester

My course gears heavily towards employment after graduating and tries to prepare you for going into industry, including great support for industrial placements should you choose to add an extra year to your degree for the experience. Personally I would say that in order to perform highly on this course it is important to apply yourself and have a good work ethic to gain a firm knowledge and understanding of process engineering, which is essential when it comes to design. Once you understand the subject you may begin to think about problems more abstractly to aid solving them.

3rd year, University of Surrey

My course has about 16-20 hours of contact time a week. The course content is challenging as it's a new concept for most of the people studying it, as there are no A-levels in engineering. However, every other week in the first term you have meetings with the personal tutor which helps you to sort out any questions and problems.

1st year, University of Bath

A-levels (or equivalent) usually required

- Maths
- Chemistry
- Physics

Useful to have

- Further maths
- Design technology

Application checklist

- January application
- Personal statement
- Interview
- Work experience

Career prospects

Although the chemicals industry, like a lot of manufacturing, had a tough time during the recession, the UK has had a shortage of chemical engineers for a while now so starting salaries are good. In fact, across the UK, only doctors and dentists bettered the average starting salary for chemical engineering graduates, and in Scotland, where the best starting salaries for chemical engineers are to be found (thanks to the oil and gas industry), even dentists lagged behind last year. So if you want to make good money from the start, this is the degree to take. Most graduates take a longer course that leads to an MEng – which is what you need to take if you want to be a Chartered Engineer. Chemical engineers are

also more likely than other engineers to take doctorates and go into research roles, so if you want to take an engineering subject but fancy a research job, this might be a good subject to take.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management.

Jobs where this degree is useful

- Chemical engineer
- Pharmaceutical engineer
- Research and development engineer

Other real-life job examples

- Design engineer
- Production manager
- Glass or ceramics engineer

What employers like about this subject

You will develop a range of subject-specific skills on a chemical engineering course, depending on how you choose to specialise. Students may opt to study anything from the separation and processing of solids, liquids and gases to thermodynamics, the control and prediction of chemical reactions, and the principles of energy efficiency. This is a specialist and sought-after degree among employers and so most graduates stay within the chemicals and other related industries, such as oil and gas and the nuclear industry. Other industries that chemical engineers joined last year included the perfumes industry and water treatment and processing.

Other routes

Higher apprenticeships (Level 4)

- Nuclear welding inspection technician
- Nuclear technician
- Process leader
- Technical dyer and colourist

Degree apprenticeships (Levels 5 – 7)

- Non-destructive testing engineer (degree)
- Nuclear scientist and nuclear engineer (degree)
- Ordnance munitions and explosives (OME) professional
- Power engineer (degree)
- Science industry process/Plant engineer (degree)

Sources & Links

Chemical Engineering | Subject Guide | UCAS

Chemistry

Chemistry is at the root of many cutting-edge scientific discoveries, new processes and products. This course allows you to challenge your understanding of chemistry and put knowledge into practice in the

lab using state of the art equipment. Chemistry graduates work in the chemical, manufacturing and pharmaceutical industries and in areas such as forensics, environmental protection and healthcare. Their problem solving skills are useful for many other areas, too, such as law and finance. Medicine requires Chemistry A-level.

Example degrees: Chemistry, Biomedical sciences, Biochemistry

- BSC
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- EXAM-INTENSIVE
- RESEARCH
- PRACTICAL WORK
- INORGANIC
- ORGANIC
- PHYSICAL

Example course modules

- Solid state chemistry
- Shapes, properties and reactions of molecules
- Organic and biological chemistry
- Chemistry for the physical sciences
- Molecular pharmacology
- States of matter
- Chemistry of materials
- Inorganic chemistry
- The global Earth system
- Mineralogy and petrology

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about chemistry

I study chemistry so in my first year I had around 16 teaching hours per week. This sounds a lot but it was still fewer hours than school! Obviously the practical element in such a course is important and we had one three-four hour lab session per week. The work mainly consisted of completing tutorials and workshops i.e. completing

exam-style questions and having them marked by a tutor. In tutorials we would then go through the questions in order to ensure our understanding. Doing a science subject, I was only required to write two essays during the year. The course is challenging, but not impossible.

1st year, University of Leicester

The course gradually covers all aspects of core, organic, physical, inorganic and biological chemistry in a lot of detail. It is challenging as there are a lot of complicated, yet integral, concepts to grasp, as well as equations and definitions to memorise. It is very interesting as a lot of the content can be applied to the lab work we spend a full day doing each week and the topics are so varied, you are bound to find plenty to captivate you. Each week we have tutorial and workshop assignments to submit, in addition to assessed lab reports and maths homework that also must be handed in weekly.

1st year, University of York

As a chemist at Oxford, your first year would have 20 hours of lectures a week from the four fields: organic, inorganic, physical and maths. There is a set of maths problems to complete each week which run parallel with the lecture course. You also have two days of practicals a week. For this you need to complete a pre-lab, which goes through the practical and asks a few questions to check you understand what you will be doing.

1st year, University of Oxford

A-levels (or equivalent) usually required

- Chemistry

Useful to have

- Biology
- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Top 10 Universities for Chemistry - Complete University Guide 2021

- **Oxford, Cambridge (Natural Science), Durham, Imperial, St Andrews**
- **York, Warwick, Manchester, Nottingham Trent** – all very high student satisfaction scores
- **Liverpool, UEA, Queens, Belfast** - all with top graduate prospects

Employability

The number of students taking chemistry courses hasn't changed much in the last ten years, even as numbers in most other sbjects have risen, and it's felt the UK has a shortage of chemistry grads overall.

But many industries, from the food industry to teaching, need chemistry students, and they're also prized by business and finance employers for their research and data handling skills – anywhere there is

research and data to be explained, you can find chemistry grads. The recession hasn't been too kind to chemists, and current problems, particularly in the pharmaceutical industry (one of the key employers for chemists), mean that the stats are probably a little worse than we'd normally expect – they should improve over the next few years.

What employers like about this subject

By studying chemistry you can learn a number of subject-specific skills including the principles of organic, inorganic and physical chemistry and thermodynamics and other advanced mathematics. Transferable skills you can gain from a chemistry degree include data investigation, excellent numeracy and good research skills. Chemistry graduates are in demand across the economy. Work is available in manufacturing (particularly in agrichemicals, pharmaceuticals, paints, perfumes, food, and plastics); oil and gas; scientific research and development and other industries including finance. If you're aiming for a career in research, you will usually need to take a postgraduate qualification (probably a Doctorate) after your first degree.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Example careers

- Healthcare scientist
- Scientific laboratory technician
- Environmental consultant
- Higher education lecturer
- Management consultant
- Nuclear engineer
- Patent attorney
- Science writer
- Secondary school teacher
- Analytical chemist
- Flavour chemist
- Forensic scientist

Local market information

Coast to Capital have contributed £8million to the newly opened Engineering and Digital Technology Park at the University of Chichester. This has created a new STEAM (Science, Technology, Engineering, Arts and Mathematics) facility for Engineering and Creative and Digital Technology degree students which has the backing of over 40 industry organisations. Personal statement advice: chemistry

Personal Statement tips – Chemistry

Want to find the right formula for a chemistry personal statement that will achieve the reaction you're hoping for? The two key elements are passion and personal – here's how to get the right mix.

Evidence your passion!

According to Andrew Pike, Admissions Tutor at Newcastle University, a 'genuine passion for the subject' is the top ingredient to convey in your statement. 'After all, you will be studying just chemistry for three to four years and would be mad to want to do that if you didn't like the subject'.

He wants to see you actually demonstrate this passion in a way that's unique to you – just saying 'I love chemistry' or 'I have a passion for chemistry' won't cut it. You could explain what it is about the subject that makes you feel sure you will be motivated by it, or how you see it fitting into your longer term plans or career:

'How do you as an individual know that three or four years of chemistry lectures and labs is not going to bore you? Or where do you think you might end up with your degree? Some foresight about this is always a good sign of a mature thinker and not someone who has been pushed into doing the subject.' Andrew Pike | Admissions Tutor – Newcastle University

This doesn't mean you need to know exactly where you want your future career to lead. But it's good to write a sentence or two about what you think you might want to achieve through your chemistry degree, whether in terms of career progression, personal fulfilment, academic curiosity, specific topics you want to learn about, or whatever.

Don't be general, be personal. Tutors also like to see applicants who say something personal in their statement – this sounds obvious but some applicants don't.

'Avoid generalisations. You need to make this personal. It is about you, so you don't need to tell me how a detailed theory works or make a political or environmental point… unless you actually did something about it.' Andrew Pike | Admissions Tutor – Newcastle University

The issue here is that some applicants try to demonstrate their knowledge of chemistry by describing a particular theory or by making some random observations about the subject that don't genuinely resonate with them. It's no good just explaining a theory in your statement, there's nothing personal about that and you're just telling admissions tutors things they know already – they're experts.

They can also easily tell if you've just written something for effect. But what does interest them is anything that has genuinely impacted on your knowledge, understanding or enthusiasm, or on you as a person – it's that personal touch they're after.

Motivation and real-world connection

Dr Simon Gerrard, Assistant Admissions Tutor for chemistry at University of Southampton, is slightly less concerned about your longer-term objectives – although, it's always good practice to briefly mention this in your statement if you have genuinely thought about it. But he does want evidence of your motivation. 'It doesn't matter if you don't know what you want to do after university, what I really like to see is enthusiasm and a passion for the subject'.

One way to really get your passion and commitment across is if you can give an example or two of how you have applied your learning to real life – for example, through work experience, a lecture you attended, a documentary you saw, a podcast you heard, or something specific you've discovered through your wider reading.

'Genuine enthusiasm for the subject is sought. Chemistry underpins everything in the material world (bold statement, but true!). Therefore, it is important to see that candidates are making the connection between chemistry and the real world.' Dr Subrayal Reddy | Senior Lecturer In Applied Analytical Chemistry – University Of Surrey

Hopefully, you can now see ways to really bring your statement alive and prove conclusively that you really do love chemistry!

https://web.ucas.com/ps_chemistry

Other routes

Degree apprenticeships (Levels 5 – 7)

- Advanced forensic practitioner (custody or sexual offence)
- Ecologist (degree)
- Food industry technical professional (degree)
- Laboratory scientist (degree)
- Research scientist
- Technician scientist

Chemistry 	VLE book contains information about: • Studying Chemistry at university. • Careers with Chemistry degrees. • Apprenticeships in Chemistry or related subjects. • Links to ranking tables for universities. • Links to Royal Society of Chemistry and other learned societies. See also information on BHASVIC website	BHASVLE Careers in Chemistry box Royal Society of Chemistry website STEM Sussex Website

Sources & Links

Chemistry Subject Guide | Why Study Chemistry At Uni? | UCAS

Molecular Biology, Biophysics, and Biochemistry | Subject Guide | UCAS

Royal Society of Chemistry

Target Careers

UCAS Chemistry guide

Future Learn

UniTasterDays webinar on demand

University of Aberystwyth subject taster https://www.channeltalent.co.uk/event/biochemistry-parasites-and-proteins-a-taste-of-biochemistry-with-dr-russ-morphew-from-aberystwyth-university/

https://www.birmingham.ac.uk/schools/chemistry/undergraduate/webinars.aspx

https://www.brighton.ac.uk/studying-here/visit-us/open-days/ug-campus-open-days/2020/online-open-day.aspx

http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/biochemistry/

http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/biomedical-sciences/

http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/cellular-molecular-medicine/

http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/chemistry/

http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/pharmacology/

https://www.derby.ac.uk/departments/schools-colleges-liaison/digital-resources/science/

https://www.youtube.com/channel/UCic_P1YBzjFs0sIj0DUlpHQ

https://www.stem.leeds.ac.uk/information-for-teachers/onlinecourses/

https://www.healthsciences.leeds.ac.uk/events/online-workshop-series-recordings/

https://www.youtube.com/channel/UCmRVBjjApUZj-cN6SbCb64Q

https://le.ac.uk/study/undergraduates/taster-days/chemistry

https://www.liverpool.ac.uk/study/undergraduate/virtual-open-day/

https://www.manchester.ac.uk/study/undergraduate/manchester-live/subject-webinars/

https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-chemistry

https://www.royalholloway.ac.uk/studying-here/undergraduate/biological-sciences/zoology-with-a-year-in-industry/

https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-medicine-dentistry-and-biomedical-sciences

https://www.salford.ac.uk/study-chemistry

https://digitalmedia.sheffield.ac.uk/media/1_gfc361es

https://www.futurelearn.com/courses/discover-dentistry?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_DD

https://www.sussex.ac.uk/study/applicant/subjects/biochemistry-and-biomedical-science

https://www.sussex.ac.uk/study/applicant/subjects/chemistry

https://www.sussex.ac.uk/study/undergraduate/courses/life-sciences-with-a-foundation-year-bsc

Civil engineering courses

Civil engineers are involved in the design, construction and maintenance of the infrastructure that holds the country together - and are behind our roads, bridges, pipelines, processing plants, buildings and harbours. As well as the technical nous to apply physics, maths and mechanics to structural design, you'll need to develop strong communication skills when managing projects, on-site teams and client requirements.

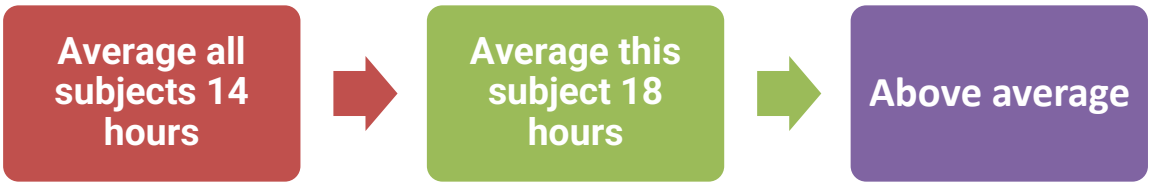
- MATHS
- VOCATIONAL
- PRACTICAL PLACEMENTS
- COMMUNICATION SKILLS
- PROBLEM-BASED LEARNING
- EXAM-INTENSIVE
- PRACTICAL SKILLS
- PHYSICS
- BENG
- CONSTRUCTION

Example course modules

- Civil engineering practice and surveying
- Engineering geology
- Hydraulics
- Water in the environment
- Materials and statics
- Maths
- Structural mechanics and analysis
- Industry and profession
- Soil mechanics

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.



League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about civil engineering

Certain engineering schools have no tutorials, so make sure you can handle the prospect of independent learning. Civil engineering has much more to offer than formulas and drawing - you get to learn about computing and design, write essays on the 'people' aspect of engineering, go on a field trip, meet and network with engineers in the industry and a lot more.

1st year, University of Bristol

Most teaching is done in lectures, supplemented by some tutorials and labs. The amount of lectures varies each semester, typically between 15 and 20 hours per week in first year, decreasing to about six hours per week in third year for my course. However, most work is carried out outside of these times in private study. The work is challenging but interesting and rewarding, and the assignments set vary from the practical aspects of the course to calculations, design work and research essays.

3rd year, University of Strathclyde

I really enjoy my course because I love the subject, so it's really important to pick a subject you enjoy. Teaching time does vary a lot between courses, and engineering can be quite time-intensive compared to some courses. Civil engineering work consists of design projects, lab exercises and reports, occasionally a fairly short essay (apart from the dissertation!) and exams. You'll also have tutorial questions for most classes.

3rd year, University of f Southampton

A-levels (or equivalent) usually required

- Maths
- Physics

Useful to have

- Further maths
- Design technology

Application checklist

- January application
- Personal statement
- Interview
- Work experience

Career prospects

We're still officially short of civil engineers, especially in areas to do with mining, tunnelling and safety, and salaries are well above the graduate average. This is a subject where work experience can be very helpful in getting a job and many students do work for engineering companies while they take their degrees – it's the most common way for civil engineers to secure their first position.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management.

Jobs where this degree is useful

- Flood defence engineer
- Demolitions engineer
- Quantity surveyor

Other real-life job examples

- Structural engineer
- Mining engineer
- Highways engineer

What employers like about this subject

Studying for a degree in civil engineering will provide you with subject-specific skills such as the ability to design and build structures, in applying your judgement as an engineer under pressure, and in effectively managing and working on large building projects. Transferable skills you can gain from civil engineering include team-working, problem-solving, critical thinking and the ability to interpret data. Civil engineers are employed in construction, in the road and rail industries, in the oil and gas industry, in telecoms, in engineering consultancy, in government, and in the finance industry (particularly in accountancy and management consultancy).

Other routes

Higher apprenticeships (Level 4)

- Building services engineering technician

Degree apprenticeships (Levels 5 – 7)

- Building services design engineer (degree)
- Building services engineering site management (degree)
- Civil engineer (degree)
- Civil engineering site management (degree)
- Construction quantity surveyor (degree)
- Design and construction management (degree)
- Nuclear scientist and nuclear engineer (degree)
- Product design and development engineer (non-integrated degree)
- Project manager (degree)

Sources & Links

Civil Engineering Subject Guide | Why Study Civil Engineering? | UCAS

Electronic and electrical engineering

The skills and expertise you'll develop as an electrical engineer will help you to deal with the daily challenges faced to keep the nation's electricity supply running smoothly and reliably, through to the design of efficient and innovative electronic systems for use in communications, manufacturing and the transport industries. Many courses involve work placements and sandwich years for on-the-job training, but you'll also spend your time in labs and working with computers.

- MATHS
- VOCATIONAL
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- EXAM-INTENSIVE
- PRACTICAL SKILLS
- TELECOMMUNICATIONS
- COMPUTING
- BENG

Example course modules

- Analogue electronics
- Analysis of circuits
- Digital electronics
- Electrical and electronics fundamentals
- Sensing and signals
- Computers and control
- Transport technology
- Energy, chemical and sustainable engineering
- Embedded hardware and software
- Motor Control

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about electronic and electrical engineering

In electronic engineering there is a huge range of topics you can study, and the further into your course you go, the more options are available to you. Everything from space robotics to media processing is an option, with certain basic modules in first year compulsory to lay the groundwork for future studies. You can be as varied or as specific as you like, which means there is always something to interest you on the course.

3rd year, University of Surrey

Electronic engineering has quite a number of hours of lectures throughout each week - we have lectures every day with one day a week being a six to seven hour laboratory session. These labs provide a practical approach to the material we normally do in the lectures. The electronic engineering course is very challenging and requires many hours of free time to be spent learning as the university only provides material - you have to learn everything by yourself. Naturally, you wouldn't expect to be writing a lot of essays when studying such a subject - most of the material that we are required to submit are lab/ project reports.

2nd year, Liverpool John Moores University

The course of electrical engineering is very demanding and you need to put a lot in, but the reward of being able to understand and tackle everyday engineering issues is also very pleasing. The work is varied - on my course, you have to write reports, perform synthetic analysis and go through exercises.

1st year, University of Sheffield

A-levels (or equivalent) usually required

- Maths
- Physics

Useful to have

- Further maths
- Design technology

Application checklist

- January application
- Personal statement
- Interview
- Work experience

Career prospects

Most graduates do get jobs quite quickly after university, and starting salaries are pretty good. The most common jobs are in telecommunications, electrical and electronic engineering, but there is some crossover with the computing industry, so many graduates start work in IT and computing jobs. At the moment, there's a particular demand for electrical engineers in the oil and gas industries, electronics and the car and aerospace industries. Bear in mind that a lot of courses are four years long, and lead to an MEng qualification – this is necessary if you want to become a Chartered Engineer.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management.

Jobs where this degree is useful

- Electrical engineer
- Broadcast engineer
- Telecommunications engineer

Other real-life job examples

- Network engineer
- Sound or video editor
- Avionics engineer

What employers like about this subject

Students taking a degree in electrical and electronic engineering will develop subject-specific skills including current electrical or electronic engineering theory and practice; maths and the principles of signal processing and device and circuit operation. Transferable skills you can develop include team-working, problem-solving, time and project management and communication skills. Industries that recruit electronic engineers include electronics, vehicle manufacture, aerospace, oil, gas and mining, computing, electricity generation and supply, the water industry, construction, finance, advertising, the Armed Forces and telecoms.

Other routes

Higher apprenticeships (Level 4)

- Electrical power networks engineer
- Electrical power protection and plant commissioning engineer

Degree apprenticeships (Levels 5 – 7)

- Electrical/electronic technical support engineer (degree)
- Embedded electronic systems design and development engineer (degree)
- Electronic systems principal engineer
- Product design and development engineer (non-integrated degree)
- Systems engineer (degree)

Sources & Links

Electrical and electronic engineering | Subject guides | UCAS

Electrical and Electronic Engineering: http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/electrical-and-electronic-engineering/

Food and beverage studies

A food and beverage studies degree is an excellent basis for a career where you are responsible for the preparation, preservation and serving of food and drink to individuals. This covers the spectrum of food and drink groups, cooking techniques and methods, serving styles, as well as the management of premises and facilities where these acts take place to ensure they meet high standards and do not result in illness. Food and beverage graduates can apply this knowledge to careers in the hospitality and service industry where elements such as menu creation come into play. However graduates can also take on roles which are slightly more “behind-the-scenes” and further up the chain, ensuring that ingredients are sourced, stored and prepared properly.

- LOTS OF READING
- COMMUNICATION SKILLS
- TIME IN LABS
- BA
- SCIENCE
- PRACTICAL SKILLS
- FOOD
- BSC

Example course modules

- Food science
- Food industry in practice
- Food nutrition
- Food business financial management
- Food processing and preservation
- Quality management
- Food standards and quality
- Nutrition and the food web
- Society, lifestyle and food

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

A-levels (or equivalent) usually required

- At least two core science subjects (choose from Chemistry, Biology, Physics and Mathematics

Application checklist

- January application
- Personal statement
- Interview

Career prospects

Food and beverage studies graduates are equipped to work in hands-on roles as catering and service staff in restaurants, hotels, bars and other places where food and drink is prepared and served to customers. However with the knowledge they gain in this field, they can also move into management positions, overseeing these roles and premises as a whole. Graduates should therefore look to career opportunities in large cities or resorts which attract clientele for business and pleasure. These can even be further away from home, providing acclaimed international experience and the opportunity to see the world. It's worth researching areas emerging as new hotspots for tourism to identify career prospects.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Hospital doctor
- Catering supervisor
- Restaurant manager
- Dietitian

Other real-life job examples

- Production manager
- Purchasing manager
- Quality manager

What employers like about this subject

A food and beverage studies degree provides students with an in-depth understanding of how food and drink should be sourced, prepared, stored and presented. While this might seem rather specific, it does sharpen qualities such as attention to detail, which is looked for in a number of contexts. Meanwhile the elements of the course which involve managing individuals and premises draw on your communication skills and ability to respond to problems quickly as they arise.

Forensic science

Forensic science involves using applied science to investigate crime and examine and present evidence. The degree combines study of chemistry and biology with learning forensic techniques such as fingerprinting, crime scene procedures, examining evidence in the lab and report-writing. Bear in mind that forensic science roles in the police or in associated laboratories are very popular and you may have to consider other fields of work where you can use the knowledge and skills you have gained.

- BSC
- COMMUNICATION SKILLS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- COURSEWORK-INTENSIVE
- PRACTICAL WORK
- CRIMINOLOGY
- FORENSIC COMPUTING
- REPORT-WRITING

Example course modules

- Chemiobiology
- Bioanalytical techniques
- Applied statistics
- Biochemical toxicology
- Molecular and cell biology
- Criminal law and evidence
- Genetics and development
- Principles of human disease
- Forensic technologies
- Metabolic regulation

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about forensic science

Good number of lectures and practicals, more than many courses so a fairly busy timetable, usually in four days a week. Variety of assessment methods used: exams, phase tests, essays, case studies, lab reports, expert witness reports, practical

exams. The course can be challenging for people who have not done A-level biology and chemistry and who don't work hard in the first year, but it is easy enough to do well if you put the work in.

2nd year, De Montfort University

We have 15 to 20 contact hours per week. Crime scene science is extremely interesting, but the first year is about getting to know the basics, so some parts are challenging, others not so much. Work includes essays, group collaboration, portfolios, a LOT of practical work and reflective logs, and employment skill-based assignments. Course facilities are excellent - the 15-room crime scene house, vehicle lab and science labs - I cannot fault.

1st year, Teesside University, Middlesbrough

We have around 20 hours of teaching per week. I'm studying forensic science, so we have a mix of lab work and lectures. Work includes coursework, essays, exams and plenty of practicals. There are plenty of labs to use in and out of lecture time.

3rd year, Bournemouth University

A-levels (or equivalent) usually required

- Chemistry
- Biology

Application checklist

- January application
- Personal statement

Career prospects

The statistics below primarily reflect the prospects for forensic science graduates, as the largest group of students to study a forensic and archaeological science. While there are not a lot of jobs available in forensics itself just at the moment, reflected in the overall unemployment rates for forensic science graduates, there are still jobs for graduates from these subjects. Last year's graduates went into analysis work in labs, technician roles and general research, and for those looking a little wider, IT and management also employed forensics graduates. This is also a good subject for those wanting to work for the police, and if you do, it’s sometimes possible to get sponsorship, so that can be an option to fund your studies and get some relevant – and challenging - experience.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Analytical chemist
- Forensic scientist
- Laboratory technician

Other real-life job examples

- Market researcher
- Data analyst

What employers like about this subject

A degree in forensic sciences will give you subject-specific skills including the application and understanding of the scientific method in the planning, execution and analysis of scientific investigations; in the recording, recovery, scientific analysis, evaluation, interpretation, preservation and presentation of evidence and in the issues and ethical and legal framework around the practice of forensic sciences. You will also gain useful transferable skills in numeracy, communication, report writing and data interpretation. Forensic sciences graduates are in demand from industries including law enforcement, the pharmaceutical industry, scientific testing and analysis, hospitals, computing and the finance industry.

Sources & Links

See also end of guide.

Genetics

Genetics involves the study of the structure and function of genes and how we can use this knowledge to improve society. Geneticists work in ground-breaking areas such as cancer research, design of new antibiotics, inherited diseases, genetic engineering to improve crops and understanding how animal species become endangered. You will study biochemistry, molecular biology and biomedical science with a focus on lab work (collecting and analysing data), in preparation for careers in research, or medical or technical laboratory-based roles.

- BSC
- PRACTICAL PLACEMENTS
- TIME IN LABS
- CHEMISTRY
- EXAM-INTENSIVE
- BIOLOGY
- PRACTICAL WORK
- RESEARCH-INTENSIVE
- BIOMEDICAL

Example course modules

- Principles of human disease
- Research techniques
- Genetic manipulation
- Genes and development
- Eukaryotic gene expression
- Plants for the future
- Genetic toxicology
- Cell and molecular biosciences
- The genome: cell cycle, expression and function
- Microbial diversity

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about genetics

There was roughly 17 to 20 hours of lectures per week, and also lab sessions for some modules and workshops for others. The content was very interesting, but also built upon the A-level biology syllabus, meaning no-one was left behind on their knowledge from school. The range of modules on offer, from animal diversity, vegetation and ecosystems to genetics and metabolism, was great, as there was something related to everyone's specific degree, but also gave you a fundamental grounding knowledge for any biology degree. We were required to write essays, take online tests (usually multiple choice), undertake project work in tutorials and also take end of module exams.

1st year, Aberystwyth University

It's a mixture of lectures, seminars and practicals. The course is very demanding, not many contact hours but a lot of independent background reading, practical work and written coursework. It is assessed through a mixture of written exams, practical lab work, written coursework and occasionally oral presentations.

2nd year, University of Central Lancashire

I am doing a degree in genetics and molecular biology at wolverhampton, and I love it. I have lectures four times a week, and a practical at least once a week, plus some subjects have extra tutorials, either online or after the lecture, where you can do questions and get feedback.

2nd year, University of Wolverhampton

A-levels (or equivalent) usually required

- Chemistry
- Biology

Useful to have

- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Career prospects

Only a few hundred people take genetics courses every year and graduates from these courses are amongst the most likely to go on to do a doctorate when they graduate, as that's the level of qualification you need to go into a career in research. Lab jobs were the most popular outcome for genetics graduates, but whilst other science and technical occupations were also common, you could also find genetics graduates in a range of other roles, particularly business and finance.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Immunologist
- Genetic technologist
- Cytogeneticist

Other real-life job examples

- Chartered accountant
- MLSO (Medical Laboratory Scientific Officer)
- Clinical researcher

What employers like about this subject

A degree in genetics can provide you with subject-specific skills including an understanding of biochemistry, cell and molecular biology and physiology; the function and expression of genes and an understanding of the current state of genetic research, methodology, ethics and technology. Useful transferable skills you can develop include numeracy, data analysis, communication and problem-solving. Genetics graduates are amongst the most likely to go on to further study - around 40% take a postgraduate degree and many careers in the field, particularly in research, require a postgraduate qualification. Employers that recruited first degree graduates in genetics last year included hospitals, universities and the pharmaceutical industry.

Sources & Links

https://www.sussex.ac.uk/study/applicant/subjects/genetics

https://www.sussex.ac.uk/study/applicant/subjects/neuroscience

Materials science

Everything is made of something! Materials science (sometimes referred to as 'Materials Engineering') provides students with a route into the manufacturing industry where they will be charged with developing new materials. These materials must possess innovative qualities to meet the needs of new products as they emerge, each with their own revolutionary functions and purposes. It's an interdisciplinary area which spans chemistry, physics, maths and engineering and offers endless possibilities as materials scientists combine materials in new ways. Graduates move on to roles in management, research and development roles, while others move into sectors like consultancy & IT.

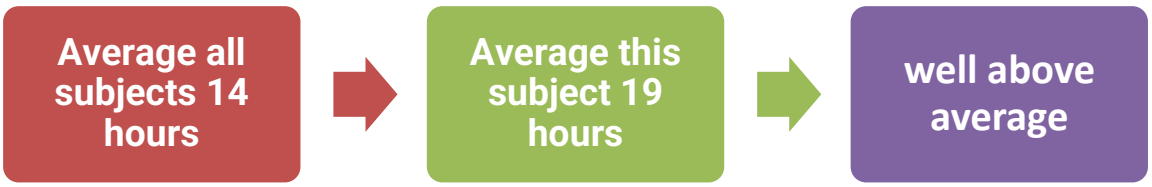
- MATHS
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- CHEMISTRY
- PRACTICAL SKILLS
- PHYSICS
- BSC

Example course modules

- Structure of materials
- Properties of materials
- Transforming materials
- Electronic properties of materials
- Engineering applications of materials
- Characterisation of materials
- Crystallography
- Mathematics of materials science
- Mechanical properties

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.



League tables for this subject

The Guardian | The Complete University Guide | The Times

A-levels (or equivalent) usually required

- Maths
- Physics

Useful to have

- Chemistry

Application checklist

- January application
- Personal statement
- Interview

Career prospects

The good news is that the materials industry is well-regarded as it contributes £200 billion each year to the UK economy. Materials science graduates can pursue a number of career paths including materials engineer, metallurgist and quality manager. Starting salaries range between £20-26,000 but can rise to £27-40,000 as you gain experience. Popular employers sit in the aerospace, armed forces, nuclear and pharmaceuticals industries, also a number of emerging areas such as nanotechnology and biomedical materials. Materials engineering employs more women than other engineering fields.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Materials engineer
- Metallurgist
- Product/process development scientist

Other real-life job examples

- Biomedical engineer
- Higher education lecturer
- Manufacturing systems engineer

What employers like about this subject

A materials science course teaches subject knowledge as well as a number of skills which appeal to employers across a broad range of sectors and industries. Studying for a materials science/technology degree provides you with a strong set of transferable skills. These include numerical, analytical, problem-solving and independent-thinking skills. Materials-based graduate positions often require you to work in teams made up many different departments as well as consulting clients; this requires strong diplomacy and communication skills in order to put your ideas across properly.

Sources & Links

See also physics and end of guide.

Mechanical engineering

Mechanical engineers design and manufacture a diverse range of products from cars, trains and turbines in power stations through to space rockets, satellites, mobile phones and the components that

power medical equipment. Courses involve combining physics, maths and computing to analyse engineering systems and learn the skills to design, make and test the products you have built.

- COMPUTING
- MATHS
- VOCATIONAL
- PRACTICAL PLACEMENTS
- TIME IN LABS
- PROBLEM-BASED LEARNING
- EXAM-INTENSIVE
- PRACTICAL SKILLS
- PHYSICS
- BENG

Example course modules

- Circuit theory
- Solid mechanics
- Thermofluids
- Mathematics and control
- Engineering concepts
- Materials and manufacture
- Dynamics and control
- Materials under stress
- Systems modelling

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about mechanical engineering

I have about 20 hours of teaching each week, mainly lectures, but also tutorials and laboratory experiments. My course covers mathematics, thermodynamics, fluid flow, heat transfer, mechanics, industrial skills, design, computer work (design and programming), experiments and statistics, among others. My mechanical engineering department has lots of laboratories, mainly engine labs. There is also the formula student lab and specific undergraduate laboratories such as beam bending or viscious fluids.

2nd year, University of Birmingham

This engineering course is incredibly demanding with at least 30 hours' contact time with lecturers a week for the first two years, with the same workload of coursework and reading, if not more, than any other degree course. All the content is interesting and challenging with varied and balanced types of work to complete such as lab work, tutorials, essays, project reports, practicals and exams.

3rd year, Newcastle University

The experience is fantastic - a lot of work, but very rewarding. Coursework consists mostly of lab reports, design projects and sometimes particularly difficult problems relevant to the content being lectured at the time. Lab reports can often be challenging, while design projects are more time consuming than difficult. The problem courseworks are by far the most difficult, but still take a fraction of the time of the design projects.

2nd year, University of Nottingham

A-levels (or equivalent) usually required

- Maths

Useful to have

- Further maths
- Design technology

Application checklist

- January application
- Personal statement
- Interview
- Work experience

Career prospects

Graduate employment in this field has been affected by the recession, although things have improved this year. Nevertheless, engineers are in demand across multiple industries, but most stay in engineering, particularly in the oil industry, and in the car industry, in design and manufacturing. Jobs are all around the country, with Scotland and the South East the most likely places for a new mechanical engineer to find work at the moment – starting salaries for mechanical engineers in Scotland are actually higher there than in London, thanks to the oil industry, and only bettered by a handful of courses. Bear in mind that a lot of courses are four years long, and lead to an MEng qualification – this is necessary if you want to become a Chartered Engineer.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management.

Jobs where this degree is useful

- Design engineer
- Mechanical engineer
- Aeronautical engineer

Other real-life job examples

- Manager in manufacturing
- Investment advisor
- Quality control engineer

What employers like about this subject

A mechanical engineering degree will help you gain specific technical training, knowledge of environmental and safety issues and the ability to plan, prioritise and solve problems under pressure and to deadlines. You can also gain a number of useful transferable skills, like numeracy, problem-solving, team-working and the ability to work with people from a wide range of backgrounds. These skills are in demand from employers in the oil and gas industry, aerospace, car industry, electricity generators and suppliers, technical consultancy, defence and the Armed Forces.

Employability

Engineers are in demand across multiple industries, particularly in the oil industry, and in the car industry, in design and manufacturing. Jobs are all around the country, with Scotland and the South East the most likely places for a new mechanical engineer to find work at the moment – starting salaries for mechanical engineers in Scotland are actually higher there than in London, thanks to the oil industry. An engineering degree will help you gain specific technical training, knowledge of issues and the ability to plan, prioritise and solve problems under pressure and to deadlines. These skills are in demand from employers in the oil and gas industry, aerospace, car industry, electricity generators and suppliers, technical consultancy, defence and the Armed Forces.

Local market information - Network Rail Apprenticeships

Network Rail are taking applications for their September apprenticeship scheme production. 50% are based in London and the South East, many of which work on a freelance basis.

Other routes

Higher apprenticeships (Level 4)

- Aircraft maintenance certifying engineer
- Automation and controls engineering technician
- High speed rail & infrastructure technician
- Propulsion technician
- Rail engineering advanced technician
- Road transport engineering manager
- Vehicle damage assessor

Degree apprenticeships (Levels 5 – 7)

- Air traffic controller
- Aerospace engineer (degree)
- Aerospace software development engineer (degree)
- Control/technical support engineer (degree)
- Electrical/electronic technical support engineer (degree)
- Embedded electronic systems design and development engineer (degree)
- Electronic systems principal engineer
- Manufacturing engineer (degree)
- Manufacturing manager (degree)

- Materials process engineer (degree)
- Process automation engineer (degree)
- Product design and development engineer (non-integrated degree)
- Project manager (degree)
- Rail & rail systems engineer
- Rail & rail systems principal engineer (degree)
- Rail & rail systems senior engineer (degree)
- Systems engineer (degree)
- Through life engineering services specialist

Sources & Links

Mechanical Engineering Subject Guide | Why Study Engineering? | UCAS

Mechanical Engineering: http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/mechanical-engineering/

See also end of guide.

Microbiology

Microbiologists study micro-organisms, the diseases they cause and the benefits they can bring, and use this knowledge to improve the world we live in. Topics include global health issues, such as HIV and TB, forensics for criminal investigations, ecosystems and the genetic engineering of crops. You will spend time in the lab and on fieldwork. Microbiologists work in research, universities and hospitals, pharmaceutical industries, biotechnology companies, forensic science labs, water and food industries and environmental organisations:

- BSC
- PRACTICAL PLACEMENTS
- TIME IN LABS
- CHEMISTRY
- EXAM-INTENSIVE
- BIOLOGY
- PRACTICAL WORK
- RESEARCH-INTENSIVE
- FIELD TRIPS
- BIOMEDICAL

Example course modules

- Genetic manipulation
- Metabolism and molecular biology
- Molecular ecology and evolution
- Genome expression and organisation
- Advanced microbial function
- Bacterial genetics
- Animal biodiversity
- Virology
- The multicellular organism
- Principles of pharmacology

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about microbiology

The amount and type of teaching received tends to vary for each degree programme. Science degrees have a few more teaching hours per week than the average arts or humanities degree, and the teaching is usually through formal lectures and practicals, with regular seminars. The biomedical science course covers a broad subject area, as topics include microbiology, genetics, cancer and cell biology, with opportunities to specialise in areas of interest. These areas can be quite complex if you want to specialise in them, but they are very interesting and students often prefer that to very general teaching about many different topics.

3rd year, University of Hull

I had around nine hours of lectures each week, plus a practical slot of around three hours. The modules are varied and interesting, there will be a few you'll love and a few you'll want to forget, but overall I think it's a good variety for first year. There are exams in January and May for the majority of modules, usually worth 60-70%. The other 30-40% is made up from coursework marks, from essays or practical write-ups. The practical lab facilities for our course are good, and the farm is excellent.

1st year, Aberystwyth University

Having taken a science degree, my workload is fairly packed, with about 25 to 27 hours a week of lectures and practicals. The facilities are top-notch, with plenty of materials and equipment and interesting experiments. The work can be challenging but is always interesting, with a wide range of subjects, from microbiology to physiology.

1st year, University of Leicester

A-levels (or equivalent) usually required

- Biology

Useful to have

- Chemistry
- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Career prospects

If you want a career in microbiology, then this is the degree to take. Although jobs are very competitive, microbiology graduates who want to leave the lab can find jobs in most industries - not just in health and hospitals, but in the food and drink, water and ecology sectors, too. Only a few hundred people take microbiology courses every year, and going on to further study is fairly common for graduates. Last year was a bit difficult for new microbiology graduates, so the figures above are a bit gloomier than you'd usually expect, but we'd hope they'd improve in the next few years.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- MLSO (Medical Laboratory Scientific Officer)
- Microbiologist (includes bacteriologists, virologists and mycologists)
- Clinical research associate

Other real-life job examples

- Toxicologist
- Quality assurance officer
- Immunologist

What employers like about this subject

Students taking a microbiology degree can gain a range of subject-specific skills including genetics, biochemistry and the use of microbiology in industry. Transferable skills you can develop include advanced numeracy, written and spoken communication, presentation, project management and research skills, and microbiology graduates are in demand from employers such as hospitals, universities, clinical and scientific analysts, the pharmaceutical industry, the food industry and the water industry. If you are aiming for a career in research, you will usually need to take a postgraduate qualification (probably a doctorate) after your first degree, and so postgraduate study is a common option for microbiology graduates.

Sources & Links

See also biology and chemistry and end of guide.

Physics

Are you fascinated by how the universe works or the structure of materials? Physics is the study of the nature and properties of matter and energy from the tiny sub-atomic particle to vast galaxies and has applications in cutting-edge technology such as medical imaging and laser communication systems. You will need a good aptitude for both physics and maths. Typical graduate careers are academic or industrial research, product development and scientific consultancy. Example degree courses: Astrophysics, Theoretical Physics

- BSC
- TIME IN LABS
- PROBLEM-BASED LEARNING
- EXAM-INTENSIVE
- RESEARCH
- COMPUTER-LITERATE
- PRACTICAL WORK
- ASTROPHYSICS
- THEORETICAL PHYSICS
- NUCLEAR PHYSICS

Example course modules

- Laboratory physics
- Contemporary physics
- Mathematical techniques
- Quantum physics
- Newtonian and relativistic mechanics
- Fabric of physics
- Plasma and fluids
- Special and general relativity
- Analysing the nanoscale and magnetism
- Stellar physics

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about physics

I came to this course kind-of liking physics... I have been at this university for two years now and I have fallen in love with it. Most of the modules are fascinating, and the ones somewhat-less-intrinsically-gripping (e.g. statistics) are well-taught and useful. The type of work is problem-based worksheets and sometimes labs.

2nd year, Queen Mary University of London

For my course I easily have 20 to 25 hours of contact time a week, not including external work. You are expected to, and often need to do, at least double the lecture time on your own work. My physics course is very broad and has some really interesting content, from quantum mechanics to cosmology. Most of the work is questions sheets.

2nd year, Loughborough University

My typical week consists of 20 or more hours in uni, about half of which are normal lectures, the rest consisting of tutorial lectures where you are in smaller groups, focusing on work you don't understand or find difficult. My course includes three maths modules and three physics modules. All the modules are OK-going if you put the time in to attend ALL lectures and partake in private/ group study out of uni. The type of work I do consists of written assignments, reports, lab reports and written homework questions.

1st year, University of Central Lancashire

A-levels (or equivalent) usually required

- Maths
- Physics

Useful to have

- Chemistry
- Further maths

Application checklist

- January application
- Personal statement

Top 10 Universities for Physics - Complete University Guide 2021

- **Oxford, Durham, St Andrews, Imperial, Birmingham**
- **Warwick, Lancaster, Nottingham, Exeter** – all very high student satisfaction scores
- **UCL, Bristol, York, Liverpool** - all with top graduate prospects

Employability

Although the subject has seen a bit of resurgence in recent years, the UK is still felt to be short of physics graduates, and in particular physicists training as teachers. If you want a career in research – in all sorts of areas, from atmospheric physics to lasers - you'll probably need to take a doctorate (the government funds many physics doctorates. Physics is highly regarded and surprisingly versatile, which is why physics students who decide not to stay in education are more likely to go into well-paid jobs in the finance industry than they are to go into science. IT and engineering – also commanding decent salaries - are other popular industries for physics graduates.

What employers like about this subject

Studying for a degree in the diverse subject of biology means that students can learn a range of subject-specific skills including statistical skills and good laboratory practice. Transferable skills you can develop on a biology course include advanced numeracy; written and spoken communication and problem-solving skills.

Biology graduates are in demand from employers such as hospitals, clinical and scientific analysts, the pharmaceutical industry, government, nature and conservation reserves, zoos and botanical gardens. If you're aiming for a career in research, you will usually need to take a postgraduate qualification (probably a Doctorate) after your first degree.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Example careers

- Material Science (a real growth area)
- Engineer
- Investment analyst
- Meteorologist
- Nuclear engineer
- Operational researcher
- Patent attorney
- PPC specialist
- Software engineer

Local market information

Coast to Capital have contributed £8million to the newly opened Engineering and Digital Technology Park at the University of Chichester. This has created a new STEAM (Science, Technology, Engineering, Arts and Mathematics) facility for Engineering and Creative and Digital Technology degree students which has the backing of over 40 industry organisation.

Personal statement advice: physics

Are you a future physicist in the making? You'll need a strong personal statement that communicates what inspires you about the subject. We spoke to physics admissions tutors to find out more:

With keen competition for places on physics courses, Professor Jim Al-Khalili from the University of Surrey is looking beyond grades to select the best students:

'We are now seeing more attention being paid to personal statements. What motivates the candidate? Are they really inspired by physics or have they just drifted in that direction?' Jim Al-khalili Obe, Professor of Physics and Professor of Public Engagement in Science – University Of Surrey

Motivation and honesty

Try to give tutors evidence in your personal statement that demonstrates why you are genuinely inspired by physics. What is it that motivates you about the subject personally? Write about this in an interesting and reflective way – and be honest, too. Our guide to studying physics at university may offer some useful pointers.

As an admissions tutor from Lancaster University puts it, 'if the Big Bang theory sparked your interest in physics, explain why.' Likewise, guidance on the University of St Andrews website says: 'we do expect you to know clearly why you wish to follow a degree programme in physics (and astronomy)… use your personal statement to tell us.'

Remember, if you're invited to an interview, your statement is sure to form the basis of at least one or two of the questions. This could also be the case if you're invited to an applicants' open day, where your personal statement may act as an ice-breaker in an informal interview or discussion with staff. Keep this in mind, and don't write anything that you wouldn't be happy to talk about in more detail if you were asked.

Wider reading

What will always go down well is if you give an example of an interest in physics you've explored for yourself, outside your school or college syllabus, and especially any wider reading you've done.

Be selective in your choice – admissions tutors often tell us that they read about the same books over and over again in personal statements. So either choose something that's slightly more unusual or obscure or, if it's one of the more popular science books, then make sure you give your own personal take on it, or write about it in a reflective way that reveals something about what it was that inspired you specifically.

Whatever you do, don't just say 'I read New Scientist.' All the other applicants probably read it too. So either be specific, like picking out one article and explaining how it impacted on you, or choose something you've read that's a little more obscure.

Roddy Vann, Senior Lecturer in the Department of Physics at University of York, went a step further when he told us that he is unimpressed by applicants who just say things like 'I have read A Brief History of Time.' He would prefer you to express your opinion on a contemporary issue, like your views on whether we should build more nuclear power stations. It's not so much what you read, it's what you think about what you read that matters.

More physics personal statement pointers

Individual university websites are a great resource for advice. Durham University says it looks for 'a genuine interest in science and technology,' so here's where your evidence needs to come in. If you designed a water bottle rocket-launcher, and subsequently learned it was Newton's second and third laws that made it work, then selectors will probably be very interested to read a short, reflective paragraph about this. They'll remember you for it too. Tutors at the University of Bath, meanwhile, want to see something that:

- is honest, original, to the point, grammatically sound, and not too quirky
- gives them some evidence of your interest, motivation, and commitment to the subject, including your wider reading or any events you've attended, and your extra-curricular activities and interests

They also say that they 'rarely reject a student because of a personal statement' but that 'in the case of a student who has narrowly missed their offer grades, we may look to the statement for signs of something special.' The University of Bristol is looking for evidence that you appreciate the importance of maths in a physics degree, as well as explaining why you want to pursue a degree in physics.

Don't forget your other extra-curricular interests and perhaps devote a short paragraph to these – whether it's sport, the creative arts, a part-time job, or something you do that helps others.

For more advice on drafting your personal statement, see our article on how to get writing your personal statement.

https://web.ucas.com/ps_physics

Sources & Links

Physical Sciences Subject Guide | Why Study Physics At Uni? | UCAS

Molecular Biology, Biophysics, and Biochemistry | Subject Guide | UCAS

Institute of Physics

https://www.unitasterdays.com/ondemand/webinar/88/physics

https://www.sussex.ac.uk/study/applicant/subjects/physics-and-astronomy

Institute of Physics http://www.iop.org

Physics.org http://www.physics.org/

https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/physics

Future Learn https://www.futurelearn.com/subjects/science-engineering-and-maths-courses

https://www.brighton.ac.uk/studying-here/visit-us/open-days/ug-campus-open-days/2020/online-open-day.aspx

http://www.bristol.ac.uk/study/undergraduate/visits/open-days/

Chemistry, Chemical Physics and Chemistry with Scientific Computing: http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/chemistry/

Earth Sciences - Geology, Geophysics, Environmental Geoscience, Palaeontology & Evolution: http://www.bristol.ac.uk/study/undergraduate/visits/open-days/subject-sessions/earth-sciences/

Engineering, Technology and Maths - https://www.derby.ac.uk/departments/schools-colleges-liaison/digital-resources/engineering-technology-and-maths/

Science - https://www.derby.ac.uk/departments/schools-colleges-liaison/digital-resources/science/

https://www.stem.leeds.ac.uk/information-for-teachers/onlinecourses/

https://www.healthsciences.leeds.ac.uk/events/online-workshop-series-recordings/

https://www.liverpool.ac.uk/study/undergraduate/virtual-open-day/

https://www.manchester.ac.uk/study/undergraduate/manchester-live/subject-webinars/

https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-design

https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-engineering

https://www.royalholloway.ac.uk/studying-here/undergraduate/physics/astrophysics-bsc/

https://www.royalholloway.ac.uk/studying-here/undergraduate/earth-sciences/digital-geosciences/

https://www.futurelearn.com/courses/discover-dentistry?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_DD

https://www.futurelearn.com/courses/technical-report-writing-for-engineers?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_TECH

https://www.solent.ac.uk/prospectus/resources/2021-course-brochure-maritime-engineering-yacht-design.pdf

https://www.youtube.com/watch?v=rtxc6mSt2qg&edufilter=NULL

Physiology

Are you fascinated by the structure of living things and how the human body works? If so you may be interested in a biomedical science degree in either physiology or anatomy, although courses usually have a mix of both topics. Physiology focuses on how living things function and how different systems in the body interact. Graduate destinations include university or industry-based research, the pharmaceutical industry, lab-based careers in hospitals, medical sales or further study in medicine.

- BSC
- TIME IN LABS
- CHEMISTRY
- EXAM-INTENSIVE
- MEDICAL
- BIOLOGY
- PRACTICAL WORK
- RESEARCH-INTENSIVE
- PHARMACOLOGY

Example course modules

- The cell
- Chemistry for the life sciences
- Staying alive - adaptation in physiological systems
- Epithelial physiology
- Intergrative neuroscience
- Cardiovascular physiology and pharmacology
- Human endocrinology
- Neurobiology
- Experimental techniques in human physiology
- Inherited disorders

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about physiology

Due to doing a science degree, last year I had 20 hours of contact time, which was half lectures and half labs. The course was broken up into physiology (the systems of the body), pharmacology (drugs acting on the body), and anatomy (structure of the mammalian body. I was required to do quizzes on 'eBioLabs', essays, practicals, and mainly multiple-choice exams.

1st year, University of Bristol

I'm doing the medical science programme at the University of Birmingham. I have on average about 23 hours of lectures/ labs/ tutorials a week in the first and second year. There is less lab work in this course compared to other similar courses (only a couple of hours a week) and a lot more of the theory, as they are gearing you towards becoming researchers rather than working in clinical labs. You learn about so many interesting things, including pharmacology, the cardiovascular system, the digestive system, infection, and many more.

2nd year, University of Birmingham

I really enjoy my course. It has a great balance of learning, all the scientific anatomy and physiology of the human body combined with getting to learn and understand the practical skills that we'll be doing every day in our job. Even though the course is based over at the hospital, the travelling isn't that noticeable, and getting a bus pass if you live in halls in the first year definitely helps! We have a number of small classrooms set aside for us (the maximum year intake is 25, so we don't need anything massive) and also have our own clinical skills lab, with all the equipment we could possibly need to prepare us for placement.

1st year, University of Southampton

A-levels (or equivalent) usually required

- Chemistry
- Biology

Useful to have

- Psychology
- Physics
- Mathematics

Application checklist

- January application
- Personal statement
- Interview

Career prospects

Anatomy and physiology graduates often take further study – usually moving on to a medical degree, whilst pathology graduates tend to go into work.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Medical researcher
- Physiological scientist
- Exercise physiologist

Other real-life job examples

- Retail pharmacist
- Perfusionist

What employers like about this subject

A physiology degree will help you to develop subject-specific skills in understanding the mechanisms that underlie the function of the body in health and disease, and in pharmacology, biochemistry, neuroscience, genetics and anatomy. Transferable skills you can develop include excellent communication and reporting skills, problem-solving, research and numeracy skills. Physiology is a very specialist subject and many graduates go on to complete a medical degree after completing their physiology studies. Physiology graduates usually go to work in hospitals or universities after graduating, but other industries that recruit them include the life sciences, sports, retail chemists and the finance industry.

Sources & Links

See also medical careers guide and end of this guide.

Plant science

Plant science is the study of the biology of plants, their relationship to the environment and how we can use this knowledge to solve major problems such as climate change and food and energy shortages. You will spend time in the lab as well as on field trips. This type of course can lead to research careers in universities or bioscience companies or employment in agricultural, horticultural, environmental services or conservation fields.

- BSC
- TIME IN LABS
- CHEMISTRY
- BIOLOGY
- PRACTICAL WORK
- ENVIRONMENTAL
- RESEARCH-INTENSIVE
- FIELD TRIPS
- HORTICULTURAL
- AGRICULTURAL

Example course modules

- Genes, cells and populations
- Ecosystems and environmental change
- Plant biodiversity
- Reproduction, development and growth
- Data transfer, analysis and presentation
- Whole organism biology
- Sex, flowers, and biotechnology
- Genetic improvement of crop plants
- Plant microbe interactions
- Field crops

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about plant science

Doing a science-based course on my campus means that I actually do have a lot of lecture time. The lectures are very easy to talk to no matter what the problem is, and very understanding. Facilities are excellent, as there are specific buildings for my course, and it has also allowed me to explore some of the other campuses at the University. Coursework and exams have been fairly equal, and I have had the opportunity to choose modules that I want and fine tune my degree to create the most enjoyable course that I want to do.

2nd year, University of Nottingham

There is enough of a balance of teaching and private time to balance your life if you use it correctly, the same as if you spend enough time on the challenging parts of a course, revision will be easier. Doing assignments as soon as they're set releases a lot of stress and the knowledge is fresh.

1st year, University of Nottingham

A-levels (or equivalent) usually required

- Chemistry
- Biology

Useful to have

- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Career prospects

Only a handful of students take botany or plant science for a first degree - the subject is mostly studied at Masters or doctorate-level graduates. Last year's botany graduates were most likely to be working six month after graduation, but it might be a good idea to go on open days and talk to tutors about what previous graduates from your chosen subject went on to do.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Biologist (research, marine, soil etc.)
- MLSO (Medical Laboratory Scientific Officer)

Other real-life job examples

- Conservation officer
- Field trials officer

See also biology and end of this guide.

Zoology

Do you like the sound of studying animal behaviour in an exotic location, or working in wildlife conservation? To take a zoology course you'll need an aptitude for science as you'll be studying animal anatomy and physiology, genetics and cell biology as well as animal behaviour and ecology. Graduates from zoology courses work in lab-based research posts as well as field research and in conservation and environmental management (perhaps in that exotic location, or a little closer to home...).

- BSC
- PRACTICAL PLACEMENTS
- TIME IN LABS
- EXAM-INTENSIVE
- PRACTICAL WORK
- ENVIRONMENTAL
- RESEARCH-INTENSIVE
- FIELD TRIPS
- CONSERVATION

Example course modules

- Plant science
- Genes and cellular control
- The animal kingdom
- Immunity, parasites and control of parasitic infections
- Animal behaviour
- Quantitative methods in biology
- Science and success
- Diversity of life
- Patterns of life and their evolution

Teaching hours / week

The time you'll spend in lectures and seminars each week will vary from university to university, so use this as a guide.

League tables for this subject

The Guardian | The Complete University Guide | The Times

What students say about zoology

For zoology, the course content focuses a lot on general theories and science in the first year. There'll be a lot on evolution and a fair bit on molecular biology, too. A lot of this year (especially the first half) will just be catch-up on your A-levels. You have to wait for the next years in order to branch out a bit more. We've been assessed with multiple-choice exams, practical exams and essays.

1st year, University of Sheffield

The course content both builds on A-level and introduces completely novel concepts, which can be quite challenging, especially if you haven't studied chemistry at A-level. There isn't too much coursework - a few essays, a few other practical write ups, and some long spreadsheets to fill in after practicals - in the biological chemistry module.

1st year, Imperial College London

I'm studying wildlife conservation with zoo biology. We did many assignments over the year, which were a mix of essays, computer work, reports and practical field trips. The trips were fantastic. They really aided my learning. We went to Malham Cove for soil studies, and often went to the Peak District / Yorkshire to do wildlife surveys. There were many zoo trips at the start of the year.

1st year, University of Salford

A-levels (or equivalent) usually required

- Chemistry
- Biology

Useful to have

- Psychology
- Physics
- Mathematics

Application checklist

- January application
- Personal statement

Career prospects

Zoology isn't just about working in zoos (although if you want one of these highly sought-after jobs, be prepared for some serious competition), because zoology graduates can be found in all sorts of jobs. Nearly a quarter of graduates take some kind of further qualification when they leave – mostly Masters degrees in zoology or related subjects, like biology or ecology – but a graduate from a zoology course can go into pretty much anything, with science, conservation, management, finance and marketing some of the most popular areas.

Transferable skills

Teamwork, IT & Technology, Problem solving, Social Skills, , Lab Experience, Organisation, Numeracy, Communication, Attention to detail, Creative thinking, Analytics, Project Management

Jobs where this degree is useful

- Environmental campaign manager
- Nature reserve warden
- Zoological field surveyor

Other real-life job examples

- Animal welfare officer
- Financial analyst
- Environmental consultant

What employers like about this subject

A degree in zoology will help you gain subject-specific skills in the study of animal behaviour; the physiology, genetics and biology of animal species; an understanding of ecological and conservation issues, and good laboratory practice. Useful transferable skills you can develop on a zoology degree include communication and presentation skills, problem-solving and decision-making. Industries that employed zoology graduates last year included zoos and nature reserves, conservation organisations and charities, universities, scientific and field research organisations and environmental consultancies.

Sources & Links

Zoology Subject Guide | Why Study Zoology At Uni? | UCAS

https://www.sussex.ac.uk/study/applicant/subjects/zoology

BHASVIC Higher Education information – Science and Engineering

In Sept 2022, 180 BHASVIC students went onto study Science and Engineering degrees at universities including Bangor University

Bangor, Bristol, UWE, Brunel, Cardiff, Coventry, Durham, Heriot-Watt University, Imperial, Keele, King's College London, King's College London, Lancaster, Liverpool John Moores, London South Bank, Loughborough, Manchester Met, Newcastle, Nottingham Trent, Queen Mary, Swansea, Edinburgh, UCL, Birmingham, Bath, Birmingham, Brighton, Bristol, Cambridge, Essex, Exeter, Glasgow, Greenwich, Kent, Leeds, Leicester, Liverpool, Manchester, Nottingham, Oxford, Plymouth, Portsmouth, Reading, Sheffield, Southampton, St Andrews, Surrey, Sussex, Warwick, University of West London, Westminster, York.

Top 10 Universities for Science & Engineering - Complete University Guide 2022

- **Bristol, Cambridge, Oxford, Imperial, Durham**
- **Cardiff, Bristol UWE, Liverpool John Moores** – all very high student satisfaction scores
- **London South Bank, Bournemouth, Exeter** - all with top graduate prospects

Examples of degrees and combined degrees for BHASVIC student's 2019-22 entry

- Aeronautics and Astronautics
- Aerospace Engineering
- Aeronautical Engineering
- Aeronautics and Astronautics
- Aeronautics and Astronautics / Spacecraft Engineering
- Aerospace Electronic Engineering with Foundation Year
- Aerospace Engineering with Foundation Year
- Aerospace Engineering with Industrial Experience
- Aerospace Engineering (Foundation)
- Aerospace Engineering (with Foundation Year)
- Aerospace Engineering (with placement).
- Aerospace Engineering including an Industrial Year
- Aerospace Engineering with a Foundation Year
- Aerospace Engineering with an Integrated Foundation Year
- Aerospace Engineering with Foundation Year
- Aerospace Engineering with Management
- Aerospace Engineering with Pilot Studies
- Aerospace Engineering with Pilot Studies (with Foundation Year)
- Architectural Engineering
- Architecture and Environmental Engineering
- Automotive Engineering
- Automotive Engineering (with placement year)
- Animal Biology

- Animal Science
- Architectural Engineering
- Architectural Engineering (Year in Industry)
- Automotive and Transport Design
- Automotive Engineering
- Automotive Engineering (with Foundation Year)
- Automotive Engineering (with Integrated Foundation Year)
- Bakery and Patisserie Technology
- Baking Science and Technology
- Biochemistry
- Biochemistry (3 years)
- Biochemistry (MBiochem)
- Biochemistry (Molecular and Cellular)
- Biochemistry with Medical Biochemistry
- Biochemistry with a Modern Language
- Biochemistry with Industrial Placement
- Bioengineering
- Biological Sciences
- Biological Sciences (Biochemistry)
- Biological Sciences (Neuroscience)
- Biological Sciences (Zoology) with Professional Training Year
- Biological Sciences Foundation (1+3)
- Biological Sciences with Placement Year
- Biological Sciences with Professional Placement
- Biological Sciences (Biotechnology with Enterprise)
- Biological Sciences (Biotechnology)
- Biological Sciences with a Foundation Year
- Biology
- Biology with Science & Society
- Biology (With Professional Placement)
- Biology and Sustainable Development
- Biology with Foundation
- Biology with Industrial / Professional Experience (4 years)
- Biomedical Engineering
- Biomedical Science
- Biomedical Science BSc
- Biomedical Sciences
- Biosciences with a Foundation Year
- Biosciences with Foundation Year

- Biotechnology
- Chemical Engineering
- Chemical Engineering (International Study) (4 years)
- Chemical Engineering (with placement)
- Chemical Engineering with (foundation year)
- Chemical Engineering with a Year in Industry
- Chemical and Nuclear Engineering
- Chemical Sciences
- Chemistry
- Chemistry with a Placement year Abroad
- Chemistry with Biological and Medicinal Chemistry
- Chemistry with Foundation Year
- Chemistry with Medicinal Chemistry
- Chemistry with Medicinal Sciences
- Chemistry with Study Abroad
- Chemistry for Drug Discovery
- Chemistry with a year abroad
- Chemistry with a Year in Industry
- Chemistry with a Year in Industry/Research (MChem)
- Chemistry with a year in York
- Chemistry with an International Study Year
- Chemistry with Biomedicine
- Chemistry with Business Management
- Chemistry with External Placement
- Chemistry with Forensic Investigation
- Chemistry with Industrial Experience
- Chemistry with Research Abroad
- Chemistry with Scientific Computing
- Chemistry with Study Abroad
- Chemistry with Study in Continental Europe
- Chemistry with year-long industry experience
- Civil Engineering
- Civil Engineering (Year in Industry)
- Civil Engineering (with Integrated Foundation Year)
- Civil Engineering (Year in Industry)
- Construction Management
- Conservation Biology
- Culinary Arts Management with Placement
- Design Engineering

- Design Engineering with Integrated Foundation Year
- Ecology and Conservation Biology with Placement Year
- Economics and Mathematics
- Economics and Statistics
- Electrical and Electronic Engineering
- Electrical and Electronic Engineering (with Foundation Year)
- Electrical and Electronic Engineering with Innovation
- Electronic and Information Engineering
- Electronic Engineering
- Electronic Engineering with Artificial Intelligence
- Electrical and Electronic Engineering
- Electrical and Electronic Engineering with Foundation Year
- Electrical and Electronic Engineering with Robotics
- Electronic & Electrical Engineering (Communication Systems) with Placement
- Electronic and Computer Engineering
- Electronic and Electrical Engineering (with a Foundation Year)
- Engineering
- Engineering (with a foundation year)
- Engineering and Science (Bachelor Degree Accelerator Foundation Programme)
- Engineering and Technology with Foundation Year
- Engineering Mathematics
- Engineering with Foundation Year
- Engineering (Chemical)
- Engineering (with a foundation year)
- Engineering and Physical Sciences with Foundation Year
- Engineering Geology and Geotechnics
- Engineering Mathematics
- Engineering with an Integrated Foundation Year
- Ecology and Conservation Biology
- Ecology and Wildlife Conservation with Foundation
- Environmental Geoscience
- Environmental Management
- Environmental Management and Sustainability
- Environmental Science
- Environmental Sciences
- Flexible Combined Honours
- Flexible Combined Honours with UK Work Experience
- Flood and Coastal Engineering
- Food Science and Technology

- Forensic Investigation with Foundation Year
- Forensic Science
- Forensic Biology
- Forensic Science with a foundation year (4 years)
- Forensic Science with a Professional Placement
- Forensic Science (MSci 4 years)
- Forensic Science with Foundation Year
- General Engineering
- Geophysics
- Human Biology (with placement year)
- Human Biosciences
- Human Sciences
- Industrial Design and Technology
- Integrated Mechanical and Electrical Engineering (with placement)
- Integrated Masters in Equine Science
- Life Sciences (with a foundation year)
- Marine Biology
- Marine Biology and Coastal Ecology
- Marine Biology with Foundation Year
- Marine Science
- Marine Biology
- Marine Biology and Coastal Ecology
- Marine Biology with foundation year
- Marine Biology with Oceanography
- Marine Sciences
- Marine Zoology
- Materials Science
- Materials Science and Engineering
- Mathematics and Physics
- Mathematics and Physics (Placement)
- Mathematics with Applied Mathematics/Mathematical Physics
- Mathematics with Ocean and Climate Sciences
- Mechanical and Electrical Engineering
- Mechanical Engineering
- Mechanical Engineering (with Integrated Foundation Year)
- Mechanical Engineering (with placement year)
- Mechanical Engineering including an Industrial Year
- Mechanical Engineering with a Foundation Year
- Mechanical Engineering with a Year in Industry

- Mechanical Engineering with International Study
- Mechanical Engineering with Robotics
- Mechanical Engineering with Year in Industry
- Mechanical Engineering/Mechatronics
- Materials Science and Engineering
- Mechanical Engineering (with an industrial placement year)
- Mechanical Engineering (with Placement)
- Mechanical Engineering / Naval Engineering with Industrial Placement Year
- Mechanical Engineering with a Year Abroad
- Mechanical Engineering with Industrial Experience (5 years)
- Mechatronic Engineering
- Mechatronic Engineering with Industrial Experience (4 years)
- Mechatronics and Robotics
- Mechatronic and Robotic Engineering with a Year in Industry
- Medical Genetics
- MEng (Hons) Robotics Engineering 5SW
- Molecular and Cellular Biology (with Biotechnology)
- Music and Sound Recording (Tonmeister)
- Music, Multimedia and Electronics
- Natural Sciences
- Natural Sciences (with Year Abroad)
- Natural Sciences (Study Abroad)
- Natural Sciences with International Study
- Ocean Exploration and Surveying
- Ocean Science and Marine Conservation
- Physics
- Physics (Study Abroad)
- Physics (4 years)
- Physics (4-year MPhys)
- Physics (with Year Abroad)
- Physics and Philosophy
- Physics with a foundation year (4 years)
- Physics with Astrophysics
- Physics with Particle Physics and Cosmology
- Physics with Professional Placement
- Physics with Quantum Technologies with Foundation Year
- Physics with Study Abroad in a Modern Language
- Physics, Astrophysics and Cosmology
- Physics (research placement)

- Physics and Astronomy (with a foundation year)
- Physics and Astrophysics (4 years)
- Physics and Astrophysics with a Year in Industry
- Physics with Astrophysics
- Physics with Astrophysics with Foundation Year
- Physics with International Experience
- Physics with Medical Applications
- Physics with Scientific Computing
- Renewable Energy
- Product Design Engineering with Foundation Year Engineering Mathematics
- Renewable Energy Engineering
- Robotics (with Foundation Year)
- Science with Foundation Year (Integrated Honours Programme)
- Science Education with Qualified Teacher Status
- Science with Foundation Year
- Ship Science
- Surveying and Mapping Sciences
- Sustainability and Environmental Management
- Theoretical Physics
- Wildlife Conservation with Zoo Biology
- Wildlife Ecology and Conservation Science
- Viticulture and Oenology
- Zoology
- Zoology with Foundation
- Zoology with Foundation Year
- Zoology with Professional Placement

Engineering admissions tutors explain why you'll need a 'personal', 'relevant' and 'reflective' personal statement if you want to tick all the right boxes.

Engineering your personal statement

'We want people who can think and who show a bit of spark. I'm looking for the person who says something interesting, or has done something interesting – something a bit different from the others. I like to see applications that say things like 'I want to be an engineer because…' or 'I visited somewhere and enjoyed it because...' or 'I got some work experience and found it valuable because…'. In other words, what turned you on to this subject?' Civil Engineering Admissions Tutor, University Of Southampton

How to provide evidence

You will need to be enthusiastic about engineering and show evidence of this in the personal statement is the simple advice from University of Dundee. So, here are some ideas on how to do this:

Work or extracurricular experiences: This doesn't necessarily have to be directly in an engineering field. Try and give examples of things you've done that highlight your technical aptitude, teamwork skills, leadership, or problem-solving abilities. Similarly, reflect on any extracurricular achievements that demonstrate good time management and self-organisation.

Relevant skills: Admissions tutors are looking for creative people with initiative, curiosity, and a bit of originality. So, if you're interested in how things work, sketching new ideas, or taking things apart and repairing them, include this here. Perhaps you've taught yourself to code or made your own burglar alarm? Reflect on what you learned or the skills you developed.

Extra reading: Include any examples of things you've read that have influenced your interest in engineering. Don't just list them though – elaborate on one or two specific issues you read about recently and the impact it made on you.

Your future plans: If you have a particular goal in mind, then mention what you plan to do with your engineering degree, whether it's your long-term career aspirations or just your ambition to make the world a better place.

Course suitability: Engineering is a challenging discipline, so demonstrate that you have the ability and motivation to complete the course.

What not to do

Don't be irrelevant: The University of Bath says, 'The best engineers have a wide range of interests… but don't let important information about yourself be buried in irrelevant detail'.

Don't say 'when I was a child': An admissions tutor doesn't want to know that the first word you ever uttered was 'hydraulics', or that you played with lego as a child. What you did recently is much more relevant than what you did when you were six.

Don’t list interests or experiences without reflecting on them: It’s not enough just to say 'I have always been interested in X, Y and Z...'. Instead, describe a work experience placement, project or piece of coursework you did and explain what you found interesting or challenging about it (and why).

Don’t ignore key advice: Check out the department websites of the universities you're applying to, as some explain what they're looking for in a personal statement. Each engineering degree course at the University of Bristol, for instance, has its own list of requirements - starting with leadership for its engineering design degree.

Structuring your statement

As well as relevant detail, Dr Will Whittow from the The Wolfson School of Mechanical, Electrical and Manufacturing Engineering at Loughborough University wants to see a statement that is properly structured. This way you’ll clearly promote your skills and showcase your technical experience.

There are no cast iron rules about the structure, but we’ve taken some tips from Dr Whittow to draw up a framework you could use:

Your motivation: In your first paragraph, explain your motivation and why you’re enthusiastic about the course, giving specific examples of what interests you and a glimpse of any specific knowledge you already have.

Mention your career ambitions too. Just don’t waste space listing your A level subjects, telling them what an engineer does, or starting with a quote ‘Ever since I was a child…’.

Your relevant insights or experience: In your second and third paragraphs, show your passion by providing evidence of what you’ve learned from any relevant experience, insights, interests or achievements, starting with your strongest point. This will be all the more impressive if it was outside of school or college, like relevant work experience, engineering taster days or CREST Awards. Commenting on what you’ve learned from your EPQ or a similar school or college project would fit well here too, but it really needs to be relevant.

Your transferrable skills: In your final paragraph mention anything else that takes up a lot of your time, like a part-time job, caring for a family member, or other interests, responsibilities or extracurricular activities. But draw out the transferable skills you’ve learned from them, like time management, teamwork or leadership. And be specific. Just saying you play badminton or took the Duke of Edinburgh’s Award means nothing – either say something interesting about it that provides relevant evidence or, better still, choose something that not so many people do.

Like the civil engineering admissions tutor advised at the start, try to show a bit of spark and talk about something a bit different from everyone else.

https://web.ucas.com/ps_engineering

Other routes: Engineering & Technology

Higher apprenticeships (Level 4)

- Aircraft maintenance certifying engineer
- Automation and controls engineering technician
- Brewer
- Electrical power networks engineer
- Electrical power protection and plant commissioning engineer
- Fashion and textiles product technologist
- High speed rail & infrastructure technician
- Nuclear welding inspection technician
- Process leader
- Propulsion technician
- Rail engineering advanced technician
- Road transport engineering manager
- Technical dyer and colourist
- Vehicle damage assessor

Degree apprenticeships (Levels 5 – 7)

- Aerospace engineer (degree)
- Aerospace software development engineer (degree)
- Control/technical support engineer (degree)
- Electrical/electronic technical support engineer (degree)
- Electronic systems principal engineer
- Embedded electronic systems design and development engineer (degree)
- Food and drink advanced engineer (degree)
- Manufacturing engineer (degree)
- Manufacturing manager (degree)
- Marine surveyor
- Marine technical superintendent (degree)
- Materials process engineer (degree)
- Materials science technologist
- Non-destructuve testing engineer (degree)
- Nuclear scientist and nuclear engineer (degree)
- Ordnance munitions and explosives (OME) professional
- Packaging professional (degree)
- Power engineer (degree)
- Process automation engineer (degree)
- Product design and development engineer (degree)
- Project manager (degree)
- Rail and rail systems principal engineer (degree)
- Rail and rail systems senior engineer (degree)
- Risk and safety management professional (degree)
- Science industry process/Plant engineer (degree)
- Systems engineer (degree)
- Through life engineering services specialist

Sources & Links

GRADUATE PROSPECTS

WHICH? STUDENT SURVEY

HESA & HEPI-HEA

https://targetcareers.co.uk/uni/degree-subject-guides

https://www.whatuni.com/advice/guides/subject-guides/

https://www.thecompleteuniversityguide.co.uk/courses

https://universitycompare.com/guides/subject/

https://www.timeshighereducation.com/student/advice/which-subject-should-you-study-university

https://targetcareers.co.uk/career-sectors

Engineering & Technology | Subject Guide | UCAS

WISE Campaign

Institution of Civil Engineers

Tomorrow's Engineers

Institution of Mechanical Engineers

Engineering at City, University of London • City, University of London

https://www.derby.ac.uk/departments/schools-colleges-liaison/digital-resources/engineering-technology-and-maths/

https://www.stem.leeds.ac.uk/information-for-teachers/onlinecourses/

Tomorrow's Engineers Quiz https://mtfy.org.uk/

https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-engineering

https://www.plymouth.ac.uk/about-us/plymouth-on-demand/pod-design

University of Sheffield https://digitalmedia.sheffield.ac.uk/media/1_gfc361es

https://www.futurelearn.com/courses/robotic-future?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_ROBO

https://www.futurelearn.com/courses/discover-dentistry?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_DD

https://www.futurelearn.com/courses/technical-report-writing-for-engineers?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_TECH

https://www.futurelearn.com/courses/media-data?utm_source=taster&utm_medium=referral&utm_campaign=TUOS_24_04_2018_DATA

https://www.solent.ac.uk/prospectus/resources/2021-course-brochure-maritime-engineering-yacht-design.pdf

https://www.sussex.ac.uk/study/undergraduate/courses/life-sciences-with-a-foundation-year-bsc

https://www.sussex.ac.uk/study/applicant/subjects/engineering-automotive-and-mechanical

https://www.sussex.ac.uk/study/applicant/subjects/engineering-electrical-electronic-and-foundation

https://www.sussex.ac.uk/study/applicant/subjects/genetics