IMPORTANT INFORMATION

Information provided by the University, such as in presentations, University brochures and on the University website, is accurate at the time of first disclosure. However, courses, University services and content of publications remain subject to change. Changes may be necessary to comply with the requirements of accrediting bodies or to keep courses contemporary through updating practices or areas of study. Circumstances may arise outside the reasonable control of the University leading to required changes. Such circumstances include industrial action, unexpected student numbers, significant staff illness (where a course is reliant upon a person’s expertise), unexpected lack of funding, severe weather, fire, civil disorder, political unrest, government restrictions and serious concern with regard to the transmission of serious illness making a course unsafe to deliver. After a student has taken up a place with the University, the University will look to give early notification of any changes and try to minimise their impact, offering suitable alternative arrangements or forms of compensation where it believes there is a fair case to do so. Offers of a place to study at the University will provide up-to-date information on courses. The latest key information on courses, entry requirements and fees can be found at courses.leeds.ac.uk. Please check this website before making any decisions.
Chemists understand the properties of atoms and molecules and use this knowledge to investigate how the natural world works. Insights into structure and reactivity let them design and construct new substances which impact our everyday lives and constantly push back the frontiers of scientific knowledge.

Throughout your course, you will study the breadth of chemistry to understand how quantum mechanics controls reactions on the smallest scale. You’ll use this knowledge to design and control the synthesis of molecules, and to explore chemical processes in the natural world.

Chemistry is applicable to a wide range of businesses and industries, from the design of new medicines and biological probes, to novel ways to generate energy and improve materials.

By studying chemistry, you’ll gain a deeper understanding of how the world around us works and learn vital skills that will help you secure the job you want when you graduate.

“The recognition of our commitment to student education by receiving the Teaching Excellence Framework Gold Award is just one reflection of how, by working in partnership, students and staff create a really invigorating and vibrant atmosphere within the School.”

DR RICHARD ANSELL
DIRECTOR OF STUDENT EDUCATION

In recognition of our strong and continued commitment to gender equality, we have received a prestigious Athena SWAN Bronze Award.

This is awarded by the Equality Challenge Unit, the national body that promotes equality in the higher education sector.
Building on more than 70 years of history, the School of Chemistry at the University of Leeds is a world-renowned centre for learning and research.

We’re ranked in the top 150 universities in the world for Chemistry and Natural Sciences (QS World University Rankings by Subject 2018). Additionally, 95% of our research is rated ‘world-leading’ or ‘internationally excellent’ (latest Research Excellence Framework, 2014).

And we’re especially proud of our student satisfaction rating of 92% (National Student Survey 2017). All this means we have good reason to be proud of our reputation at every level: the teaching we do, the research we produce and the people who love to study here.

**DISCOVERY MODULES**

As well as the compulsory and optional modules that make up your course, you’ll have the chance to take discovery modules. These allow you to pursue interests outside of chemistry during your course.

**RESEARCH-BASED DEGREES**

Leeds is a member of the Russell Group of research-intensive universities, making it a natural home for anyone who wants to advance scientific knowledge. Our chemistry degrees are shaped by our research activity and you’ll be given the opportunity to contribute to it, using state-of-the-art facilities to make your own discoveries.

MChem, BSc courses culminate in an exciting research project that sees you apply the training you’ve received to make your own contribution to chemistry. Your project will open your eyes to the investigative nature of chemistry, while giving you the opportunity to follow your own interests. You’ll work collaboratively with your supervisors throughout the project, who’ll be experts in your particular research area.

**FLEXIBLE COURSES**

We offer both BSc and MChem, BSc undergraduate degree programmes. You don’t have to decide which one you want to follow straight away: you can switch between these courses until the end of your second year.

An MChem, BSc is an Integrated Masters course. As well as undertaking a wider range of project work, you’ll study modules at a more advanced level and learn more about why chemistry is important in industrial, economic, environmental and social contexts.

All our courses include the option to study abroad, or alternatively undertake a paid industrial placement for a year.

**LEADING FACILITIES**

We continually invest in the School of Chemistry’s teaching and laboratory facilities, ensuring students are using the most up-to-date equipment for synthetic, physical and analytical chemistry.

These include a suite of five NMR machines, a cutting-edge CCD-based X-ray diffractometer, a Nova NanoSEM450 scanning electron microscope, femtosecond laser systems, a category 2 microbiological suite and an automated robotic synthesis and purification laboratory.
YEAR 1
Your first year will be spent learning about modern chemistry, and the fundamentals of its organic, inorganic and physical branches. You’ll also learn the mathematical concepts and practical skills you will need in the lab.

YEAR 2
In your second year, you’ll move on to more advanced topics such as organometallic and f-block chemistry, structure and spectroscopy and organic synthesis. You’ll undertake assessed laboratory work, while also having the option to study things like the commercial applications of chemistry and its role in society.

YEAR 3
Your third year will be divided between advanced compulsory modules in core topics, and a wide array of optional modules including atmospheric chemistry, chromatography, self-assembling materials and supramolecular chemistry. You’ll also participate in advanced lab work. You have the opportunity to study abroad or undertake an industrial placement in your third year.

YEAR 4 (MCHEM)
In your fourth year, half of your time will be spent on a laboratory-based research project. This is your chance to pursue a topic in chemistry that fascinates you, where you’ll collect and evaluate data in the lab before presenting your findings to your peers. The remainder of your time will be spent on advanced study to prepare you for postgraduate research in industry and academia.

A few examples of past fourth-year research topics include:

- Molecularly imprinted sensors and catalysts
- Energy transport in photosynthesis
- Third generation drug discovery: human-on-a-chip
- Chemistry of cosmic dust
- Discovery of drugs and biomarkers for cancer therapy
- Re-engineering bacterial toxins for drug delivery
- Development of novel quantum dot-aptamer biosensors.
Experienced and talented chemists are in high demand. Over 94% of our recent graduates have secured employment or gone on to further study within six months of graduating (DLHE, 2015/16).

The University of Leeds links with industry mean you will have opportunities to spend time in a workplace setting, as well as learning about the commercial applications of modern chemistry on your course. We’re also one of the top ten UK universities targeted by employers (The Graduate Market in 2018, High Flyers Research).

REWARDING CAREERS

Many of our recent graduates have gone on to work as chemists in some of the largest and most innovative companies in the world, including:

- AstraZeneca
- AzkoNobel
- Lhasa Ltd
- Covance
- Merck Sharp & Dohme
- Goldman Sachs International
- IBM
- Sellafield
- NHS
- Unilever
- Cancer Research UK.

Others have secured PhD positions in order to make some of the big discoveries of the future. The career options available to you will be varied and could take you away from the labs to a rewarding career in government agencies, NGOs, healthcare or finance.

CAREER SUPPORT

Our dedicated Faculty Employability Team will support, guide and advise you to ensure you graduate with a clear plan of what you want to do next. In addition to specialist face-to-face meetings, you’ll benefit from:

- timetabled employability sessions
- the opportunity for paid summer internships in local SMEs, charities, University of Leeds departments and multi-national organisations.
- presentations and workshops delivered by employers

Our Employability Team organises an annual Careers Fair which will give you the opportunity to meet over 100 recruiters to gain an insight into graduate jobs and explore work experience and internship opportunities.

Additionally, we offer the optional Future Career Planning for Chemists module, which is designed to give you the time and resources to plan your next steps in life.

Using a mixture of lectures, on campus and at employer workplaces, alongside experiential learning, we explore options available to boost your skills and help you gain a competitive advantage when it comes to looking for internships, placements and graduate jobs.

STUDENT ENTERPRISE

Some students want to start their own business when they graduate. The University’s innovative SPARK initiative can help you with business start-up support, advice and funding to develop your idea into a viable business.

You also have the opportunity to apply for the Year in Enterprise programme, which gives you the chance to take a year out to develop your business – you’ll receive a £5,000 bursary and have access to advice, mentoring and professional networks.

WE ARE PROUD WINNERS OF THE MOST IMPROVED COMMITMENT TO EMPLOYABILITY AWARD (NUE AWARDS 2018).

The Faculty of Mathematics and Physical Sciences Employability team won the Most Improved Commitment to Employability Award at the National Undergraduate Employability Awards Ceremony in 2018. This is a reflection of the unrivalled support given to our students at Leeds, and the widening pool of work experience opportunities available to students in today’s competitive market.
INDUSTRIAL PLACEMENT

An industrial placement is a fantastic way to gain work experience and find out first-hand how chemistry is practised in a non-academic setting.

You’ll spend a year as an employee of a major firm, gaining a deeper understanding of the challenges and possibilities of the area of industry you want to work in.

Our MChem, BSc Chemistry and MChem, BSc Medicinal Chemistry courses offer programmes with an integrated year in industry, meaning it won’t add an additional year to your studies. On our degrees without an integrated industrial placement, you can add a placement year between years 2 and 3.

Our dedicated Employability team will work with you during a series of placement information and preparation sessions. These sessions will enable you to understand what opportunities are available to you and how to successfully apply for them through interactive lectures and workshops.

Additionally, you’ll have the support of a personal tutor throughout your placement year, who will help you decide how to use your experiences in your studies when you return.

STUDY ABROAD

Chemistry is needed all over the world, and our study abroad programme gives you the opportunity to find out how the science is pursued in other cultures – not just as an observer, but as an active participant.

With the Chemistry and Medicinal Chemistry MChem, BSc courses, you can integrate a study abroad year into your degree. You would typically spend your third year studying chemistry at a partner institution, and then return to Leeds for your final year.

We have over 400 partner institutions to choose from. You’ll have the chance to immerse yourself in another culture, make new connections and have unforgettable experiences, while gaining an overseas education and developing the skills employers seek.

“The University of Leeds has a fantastic Study Abroad programme, which was one of the many reasons why I chose to come to Leeds. After a very simple application process, I am very fortunate to be studying abroad at the University of Calgary next academic year!”

CLAUDIA THOMPSON,
CHEMISTRY MCHEM, BSC
STUDY ABROAD YEAR IN CANADA
As a chemistry student at Leeds, you will discover how chemistry shapes the world around us. You can explore topics ranging from quantum mechanics to planetary atmospheres, from making organic chemicals to producing medicinal drugs, and from bonding in metals to the structures of synthetic and biological materials.

Our chemistry courses aim to help you fulfil your potential, so our degrees take a wide-ranging view of all aspects of chemistry and prepare you for a career in any area of the subject while allowing you to develop as a researcher in a specialism of your choice.

The course modules are inspired by our research strengths in areas such as chemical biology, atmospheric chemistry, materials science and colour science. You will have the opportunity to attend career development workshops, which will help you complete future application forms and prepare for interviews.

In your first and second years you will study the fundamentals of physical, organic and inorganic chemistry and explore how these concepts integrate together. Optional modules allow you to build transferable skills: for example, Chemistry: Idea to Market offers an insight into industrial new product development. You will also have the opportunity to broaden your knowledge and pursue your interests in other subjects from across the University through discovery modules.

As you progress through the course, you will be able to study more advanced topics relating to the research strengths of the School in greater detail. In the final year of the MChem, BSc degree, you will undertake a major research project, working with experienced scientists to advance our knowledge of chemistry.

This degree is accredited by the Royal Society of Chemistry (RSC). Masters accreditation provides access to qualified membership of RSC and fully satisfies the academic requirements for the RSC award of Chartered Chemist (CChem).
MEDICINAL CHEMISTRY

Medicinal Chemistry BSc:
UCAS code F150 / Entry grades AAB / Duration 3 years

Medicinal Chemistry MChem, BSc:
UCAS code F153 / Entry grades AAB / Duration 4 years

Medicinal Chemistry with a Year in Industry MChem, BSc:
UCAS code F154 / Entry grades AAB / Duration 4 years

Medicinal Chemistry with Study Abroad MChem, BSc:
UCAS code F156 / Entry grades AAB / Duration 4 years

Without medicinal chemists, life as we know it would be impossible. Modern medicines give us pain relief, cure bacterial infections and fight viruses and cancer – and there’s always more work to be done.

Without the arsenal of drugs at their disposal, doctors would be unable to cure many common diseases. It is the ability of medicinal chemists to have a positive impact on the health and wellbeing of millions of people worldwide that motivates many of our students on this course.

Through studying medicinal chemistry at Leeds, you will be able to gain a broad understanding of chemistry and detailed knowledge of how drugs interact in the body. We also provide opportunities for you to develop the transferable skills that employers seek.

The course structure shares many elements with our Chemistry course, but you will focus your study more on the organic elements of chemistry with an enhanced level of teaching on drug synthesis, pharmacology and how drugs work in biological systems.

The first year of the course develops your understanding of the fundamentals of chemistry. From the second year onwards, you will focus more on organic chemistry, with advanced teaching on drug synthesis and pharmacology. In your third year, you’ll analyse strategies used in the development of drugs in key therapeutic areas, such as the treatment of cancer and bacterial infection.

In the final year of our MChem, BSc course, you will undertake a major research project. You’ll have the chance to work with interdisciplinary groups at Leeds, which contain medics, biologists and chemists who work collaboratively to discover new therapeutic strategies.

This degree is accredited by the Royal Society of Chemistry (RSC). Masters accreditation provides access to qualified membership of RSC and fully satisfies the academic requirements for the RSC award of Chartered Chemist (CChem).

“At A-level I studied chemistry, maths and psychology and I was struggling to decide which of the three to take to degree level. After much deliberation, I realised that a chemistry degree had the capacity to encompass all three aspects, from quantum mechanics to drug discovery for mental health.”

CHARLIE STEVENSON, MEDICINAL CHEMISTRY MChem, BSc
CHEMISTRY AND MATHEMATICS

Chemistry and Mathematics BSc:
UCAS code FG11 / Entry grades AAB / Duration 3 years

Chemistry and Mathematics MChem, BSc:
UCAS code FIGC / Entry grades AAA / Duration 4 years

Both physical and theoretical chemistry can be greatly enhanced with an advanced understanding of mathematics. Soft matter, chemical kinetics theory, chemoinformatics, atmospheric modelling and process chemistry are just some of the topics relevant to both sciences.

Using the tools of advanced mathematics to understand the diversity and complexity of the chemical world is what really drives students on our chemistry and mathematics joint honours degrees.

On this course you’ll study alongside single honours chemists and mathematicians who are learning the same concepts and reaching the same depth of knowledge as you.

You will combine your mathematical skills with the study of chemistry to understand how and why molecules react and the methods that are employed to study them. You will also have the option to specialise in organic, inorganic or physical chemistry.

As a core part of your chemistry modules, you’ll have extensive practical sessions in the laboratory, allowing you to perform experiments that reinforce the material taught to you in the lectures. In addition, small tutorial groups are used to support the teaching so you get regular feedback from the academic staff helping you solve any problems that you might have with a particular topic.

In studying mathematics, you will develop your skills in core subject areas such as linear algebra and calculus. A wide range of optional modules available from your second year onwards will allow you to pursue areas ranging from quantum mechanics to probability theory, fluid dynamics, computational modelling, statistical analysis and combinatorics.

After your second year, you’ll be able to choose additional mathematics or chemistry options, or even take a third elective subject available from a wide range.

Taking certain options in this course can result in accreditations from the Royal Statistical Society and the Royal Society of Chemistry, and others can receive exemptions from the Institute of Actuaries.

“The labs section of the course is good, particularly the physical chemistry labs where you are handling large amounts of data and presenting it scientifically - this gives the opportunity to apply a lot of skills learned through the maths side of the course.”

NICOLA PEREE
CHEMISTRY AND MATHEMATICS BSC
“I am currently undertaking my industrial placement with GlaxoSmithKline (GSK), one of the largest pharmaceutical companies worldwide. They specialise in the research, development and supply of vaccines, pharmaceuticals and consumer goods.

The most satisfying aspect of my role is seeing a route progress from idea to application. It is truly rewarding to overcome the challenges in designing and improving a synthesis, as well as further planning for the future of the project.

I applied for the industrial placement scheme at GSK as it is a fantastic opportunity to learn from and work alongside first-rate scientists, utilising knowledge from university to tackle challenges within healthcare.”

MIA CALLENS
MEDICINAL CHEMISTRY MCHEM, BSC
INDUSTRIAL PLACEMENT YEAR AT GLAXOSMITHKLINE
# MODULIES

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Chemistry</th>
<th>Medicinal Chemistry</th>
<th>Chemistry and Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Modern Chemistry</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Fundamentals of Physical Chemistry</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Fundamentals of Inorganic Chemistry</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Fundamentals of Organic Chemistry</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Mathematical and Physical Concepts for Chemists</td>
<td>C</td>
<td>C</td>
<td>-</td>
</tr>
<tr>
<td>Practical Skills in Chemistry</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Studying in a Digital Age (Chemistry)</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
</tbody>
</table>

Chemistry and Medicinal Chemistry students will also study 30 credits of optional or discovery modules. Chemistry and Mathematics students will study 60 credits of compulsory Mathematics modules. Please refer to the course page on the website for more details.

<table>
<thead>
<tr>
<th>Year 2</th>
<th>Chemistry</th>
<th>Medicinal Chemistry</th>
<th>Chemistry and Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure and Synthesis of Materials</td>
<td>C</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Introduction to Drug Design</td>
<td>-</td>
<td>C</td>
<td>O</td>
</tr>
<tr>
<td>Introduction to Organic Synthesis</td>
<td>C</td>
<td>C</td>
<td>O</td>
</tr>
<tr>
<td>Chemical Kinetics and Thermodynamics</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Structure and Spectroscopy</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Organic Structure and Mechanism</td>
<td>C</td>
<td>C</td>
<td>O</td>
</tr>
<tr>
<td>Quantum Mechanics and Spectroscopy</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Organometallic and f-block Chemistry</td>
<td>C</td>
<td>C</td>
<td>O</td>
</tr>
<tr>
<td>Equilibrium and Analysis: from Ions to Proteins</td>
<td>C</td>
<td>C</td>
<td>O</td>
</tr>
<tr>
<td>Laboratory Work</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Science and Society: The Critical Interface</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Chemistry: Idea to Market</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Advances in Colour and Polymer Sciences</td>
<td>O</td>
<td>O</td>
<td>-</td>
</tr>
</tbody>
</table>

Chemistry and Mathematics students will also study 40 credits of compulsory Mathematics modules, and at least 10 credits from a wide selection of optional Mathematics modules. Please refer to the course page on the website for more details.

c = compulsory, o = optional, - = not available

These are typical modules/components studied and may change from time to time.
<table>
<thead>
<tr>
<th>Modules</th>
<th>Year 3</th>
<th>Year 4 (MChem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Organometallics and Catalysis</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Chemical Bonding and Reactivity</td>
<td>C</td>
<td>0</td>
</tr>
<tr>
<td>Organic Synthesis</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Chemistry at the Molecular Level</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Advanced Lab Work for MChem</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>The Medicinal Chemistry of Drug Development</td>
<td>-</td>
<td>C</td>
</tr>
<tr>
<td>Laboratory Work</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Atmospheric Chemistry</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chromatography and Analytical Separation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Properties and Applications of Materials</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity in Organic Chemistry - Principles and Applications</td>
<td>0</td>
<td>C</td>
</tr>
<tr>
<td>Soft Matter: Self-Assembling and Polymeric Materials</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fundamental Supramolecular Chemistry</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Big Data, Big Science</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chemistry: Making an Impact</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ethical Issues in Chemistry</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chemistry into Schools</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Chemistry and Mathematics students will also study at least 40 credits from a wide selection of optional Mathematics modules. Please refer to the course page on the website for more details.

<table>
<thead>
<tr>
<th>Modules</th>
<th>Year 3</th>
<th>Year 4 (MChem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory-based Project Work</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Advanced Topics in Chemistry</td>
<td>C</td>
<td>-</td>
</tr>
<tr>
<td>Advanced Topics in Medicinal Chemistry</td>
<td>-</td>
<td>C</td>
</tr>
</tbody>
</table>

Chemistry and Mathematics students will also study 40 credits from a wide selection of optional Mathematics modules. Please refer to the course page on the website for more details.

These are typical modules/components studied and may change from time to time.
## ENTRY REQUIREMENTS AND HOW TO APPLY

<table>
<thead>
<tr>
<th>Degree</th>
<th>UCAS code</th>
<th>Duration (years)</th>
<th>A-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry BSc</td>
<td>F100</td>
<td>3</td>
<td>AAB, including Chemistry.</td>
</tr>
<tr>
<td>Chemistry MChem, BSc</td>
<td>F103</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chemistry with a Year in Industry MChem, BSc</td>
<td>F105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry with Study Abroad MChem, BSc</td>
<td>F107</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicinal Chemistry BSc</td>
<td>F150</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Medicinal Chemistry MChem, BSc</td>
<td>F153</td>
<td></td>
<td>AAB, including Chemistry.</td>
</tr>
<tr>
<td>Medicinal Chemistry with a Year in Industry MChem, BSc</td>
<td>F154</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Medicinal Chemistry with Study Abroad MChem, BSc</td>
<td>F156</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry and Mathematics BSc</td>
<td>FG11</td>
<td>3</td>
<td>AAB, including both Chemistry and Mathematics with an A in Mathematics.</td>
</tr>
<tr>
<td>Chemistry and Mathematics MChem, BSc</td>
<td>F1GC</td>
<td>4</td>
<td>AAA, including both Chemistry and Mathematics.</td>
</tr>
</tbody>
</table>

A-level General Studies and Critical Thinking are excluded. Where an A-level science subject is taken, we require a pass in the practical science element, alongside the achievement of the A-level at the stated grade.

GCSE Mathematics Grade B/6 is also required if it is not offered at a higher level.

We also accept a variety of alternative qualifications. Please check our website for details.

## ENGLISH LANGUAGE REQUIREMENTS

GCSE English Language grade C (or above) or an equivalent recognised English language qualification, eg IELTS 6.0 overall with no less than 5.5 in each element.
ACCESS TO LEEDS

We’re committed to identifying the best possible applicants, regardless of personal circumstances or background. If you do not meet our entry criteria, you may be eligible through the Access to Leeds scheme.

leeds.ac.uk/a2l

HOW TO APPLY

All undergraduate applications should be made through the Universities and Colleges Admissions Service (UCAS).

ucas.com

OFFER PROCESS

Suitable applicants will be invited to an applicant day, which gives you the opportunity to meet our academic staff and students, enjoy a tour of our facilities, view student accommodation and find out more about your course.

The day will also include an interview with one of our academics. This will give you the chance to discuss your application in more detail, check that it's the right course for you and your career plans, have your questions answered and find out more about studying at Leeds.

SCHOLARSHIPS

The University of Leeds has a long-standing history of helping students to manage their finances while at University, with a comprehensive range of bursaries and scholarships available.

chem.leeds.ac.uk/undergraduate/scholarships

CONTACT US

If you require any more information about our courses, modules or any other aspect of studying chemistry at Leeds, contact our Undergraduate Admissions team.

School of Chemistry
University of Leeds
Leeds LS2 9JT, UK

Tel: +44 (0)113 343 6440
Email: admissions@chem.leeds.ac.uk

FIND US ONLINE

chem.leeds.ac.uk
@chemleedsuni
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Information provided by the University, such as in presentations, University brochures and on the University website, is accurate at the time of first disclosure. However, courses, University services and content of publications remain subject to change. Changes may be necessary to comply with the requirements of accrediting bodies or to keep courses contemporary through updating practices or areas of study. Circumstances may arise outside the reasonable control of the University leading to required changes. Such circumstances include industrial action, unexpected student numbers, significant staff illness (where a course is reliant upon a person’s expertise), unexpected lack of funding, severe weather, fire, civil disorder, political unrest, government restrictions and serious concern with regard to the transmission of serious illness making a course unsafe to deliver. After a student has taken up a place with the University, the University will look to give early notification of any changes and try to minimise their impact, offering suitable alternative arrangements or forms of compensation where it believes there is a fair case to do so. Offers of a place to study at the University will provide up-to-date information on courses. The latest key information on courses, entry requirements and fees can be found at courses.leeds.ac.uk. Please check this website before making any decisions.
As a natural scientist, you will be uniquely positioned to tackle this next generation of scientific challenges because the concepts and language of multiple scientific disciplines are taught to you from day one of your degree.

At Leeds we have an active research environment which enables us to offer exciting courses taught by experts who are leaders in their fields. You’ll be directly engaged in research through project work.

Your degree from the University of Leeds and the wider experience you’ll gain while you’re studying here will help you stand out from the crowd and secure that all-important graduate job.

“Leeds has always been at the forefront of interdisciplinary research, and achieving the Teaching Excellence Framework Gold Award also shows how we translate these skills to deliver an outstanding education and exceptional student experience.”

DR PAUL BEALES
NATURAL SCIENCES PROGRAMME MANAGER

In recognition of our strong and continued commitment to gender equality, we have received a prestigious Athena SWAN Bronze Award.

This is awarded by the Equality Challenge Unit, the national body that promotes equality in the higher education sector.
The problems facing today’s scientists are increasingly complex, and it’s rare that a single discipline can provide all the answers. Interdisciplinarity and collaborative working are key to modern research, and they’re central to natural sciences too.

**WHAT IS NATURAL SCIENCES?**

Natural Sciences can be studied as a three-year BSc or a four-year Masters, BSc degree. Both allow you to develop specialisms from a wide range of science subjects, with a particular focus on combining the strengths of each subject into an interdisciplinary framework.

This approach also recognises that not everybody’s interests fit neatly into moulds like chemist, physicist or biologist – and that by bringing together different elements of distinct branches of science, new and exciting fields of study can be explored.

With our Natural Sciences degree, you essentially build the course you want to study, and become the scientist you want to be. You choose which sciences to focus on, and how much to study of each, by choosing modules from the following subjects:

- Biology
- Biochemistry
- Chemistry
- Environmental Science
- Food Science and Nutrition
- Mathematics
- Physics
OUR INTERDISCIPLINARY CENTRES

The University of Leeds’ interdisciplinary centres bring together scientists from all specialisms, from all over the world, to work on the latest challenges and fields of research. They represent the collaborative spirit and multifaceted expertise at the heart of natural sciences.

As an undergraduate, you’ll get to see first-hand the difference interdisciplinary research can make at these centres, which align with the scientific themes mapped out in the Natural Sciences course. You may even eventually use them for your own final year and postgraduate research projects.

THE ASTBURY CENTRE

Home to a Wellcome Trust-funded PhD programme, the Astbury Centre for Structural Molecular Biology brings together scientists and experts from physics, biology and chemistry to explore the molecular basis for life, creating a truly interdisciplinary place to teach and learn.

The Centre has cutting-edge research infrastructure for structural microbiology techniques, including a £17m investment in brand new nuclear magnetic resonance machines and electron microscopes that show how biological molecules function on the atomic level.

THE PRIESTLEY CENTRE

The Priestley International Centre for Climate is unique in bringing together world-leading expertise in all the key strands of climate change research. The focus is on new research partnerships that improve links between our physical, technological, economic and social understanding of climate change with strategies for mitigation and adaptation.

The Centre is a key partner in the development of UK national climate modelling capability, making use of extensive local and national high-performance computing resources.

THE BRAGG CENTRE

Advanced materials are changing all our lives, and a major new £96m international centre for engineering and physical sciences will help to foster a culture of interdisciplinary working in the development of novel materials to address 21st-century challenges.

Due to be completed in 2020, the Bragg Centre for Advanced Functional Materials will bring together scientists and researchers from Chemistry, Physics and Astronomy, Computing and Engineering to work on the biggest technical challenges facing industry and science.

LEEDS INSTITUTE FOR DATA ANALYTICS

Data is at the heart of many branches of science, and making sense of big datasets is a key component of the future of interdisciplinary research.

Supporting more than 20 research centres, programmes and projects, the Institute brings together researchers and data scientists from various disciplines including medicine, biological sciences, geography, transport studies, mathematics and many more.

“Interdisciplinary research provides a broader view of a specific question and, in the long run, saves time and effort while also providing more accurate and relevant analyses.”

ASIF FAZAL

NATURAL SCIENCES MNATSC
LEARNING AND TEACHING

The future is interdisciplinary. Be a part of it.

The major scientific breakthroughs of the future will be interdisciplinary, with scientists from across different specialisms working together to solve the world’s biggest problems.

At Leeds, we’re at the forefront of those breakthroughs. Our approach to interdisciplinary research feeds into our teaching. Whether you want to understand more about how to combine physics and maths to study the quantum world, to model the growth of biological populations or to understand biochemistry at the atomic level, we have the perfect team to guide you.

DISCOVERY MODULES

As well as the compulsory and optional modules that make up your course, you’ll have the chance to take discovery modules. These allow you to pursue interests outside of natural sciences during your course.
OUR EXPERTISE

Our Natural Sciences course is delivered by world-leading scientists from academic schools across the University. Continual investment in our schools and interdisciplinary centres means we provide them with the resources, facilities and equipment they need to keep making discoveries and ensure we stay at the cutting edge of modern science.

FLEXIBLE DEGREES

Natural Sciences can be taken as a three-year BSc, or as a four-year Integrated Masters, BSc degree. It’s one of the most flexible science courses you can study: you can devote your time to a particular specialism across multiple disciplines, or work towards knowing as much as possible about a variety of topics.

You also have the opportunity to spend a year studying abroad or undertaking an industrial placement. If you decide to do this, your degree will extend by a year.

There’s no need to decide anything now. You don’t even have to tell us which sciences you want to study until you arrive at Leeds.

STUDENT SUPPORT

We take great care of our students. As well as being assigned a personal tutor to guide you through your studies with us, each subject has a specialist link tutor to provide support on the programme. You’ll also be supported by fellow students through our popular peer mentoring scheme.

Using our Virtual Learning Environment, you can access learning resources including reading lists, past exam papers, skills guides and assessment guides. You’ll also be able to play back video recordings of your lectures and download lecture notes.

“Leeds prides itself for its interdisciplinary research. This made the University of Leeds a perfect place to witness how traditionally separate disciplines can come together to fulfil mutual scientific goals.”

ADIL SHAH
NATURAL SCIENCES MNATSC
Natural scientists who are used to working together to find innovative solutions are in high demand. Over 88% of our recent graduates have successfully secured a professional or managerial role or gone on to further study within six months of graduating (DHLE, 2015/16).

The University’s links with industry mean you will have opportunities to spend time in a workplace setting, as well as learning about the commercial applications of interdisciplinary science on your course. We’re also one of the top ten UK universities targeted by employers (The Graduate Market in 2018, High Fliers Research).

REWARDING CAREERS

Our close working relationships with a large number of key companies means that throughout your degree you’ll be exposed to industry and prepared for a career in a professional environment.

Recent graduates have gone on to work for some of the biggest companies in the world, including Covance and Johnson Matthey. Others have secured PhD positions to work on some of the big discoveries of the future. The career options available to you will be varied and could take you to a rewarding career in government agencies, research institutes, healthcare or industry.

CAREERS SUPPORT

Our dedicated Faculty Employability team will support, guide and advise you, ensuring you graduate with a clear plan of what you want to do next. In addition to specialist face-to-face meetings, you’ll benefit from:

- timetabled employability sessions
- the opportunity for paid summer internships in local SMEs, charities, University of Leeds departments and multi-national organisations
- presentations and workshops delivered by employers.

Our Employability team also organises an annual Careers Fair, which will give you the opportunity to meet over 100 recruiters to gain an insight into graduate jobs and explore work experience and internship opportunities.

STUDENT ENTERPRISE

Some students want to start their own business when they graduate. The University’s innovative SPARK initiative can help you with business start-up support, advice and funding to develop your idea into a viable business.

You also have the opportunity to apply for the Year in Enterprise programme, which gives you the chance to take a year out to develop your business – you’ll receive a £5,000 bursary and have access to advice, mentoring and professional networks.

We are proud winners of the Most Improved Commitment to Employability Award (NUE Awards 2018).

The Faculty of Mathematics and Physical Sciences Employability team won the Most Improved Commitment to Employability Award at the National Undergraduate Employability Awards Ceremony in 2018. This is a reflection of the unrivalled support given to our students at Leeds, and the widening pool of work experience opportunities available to students in today’s competitive market.
INDUSTRIAL PLACEMENT

An industrial placement is a fantastic way to gain work experience and find out first-hand how interdisciplinary science is practised in a non-academic setting. You'll spend a year as an employee of an organisation, gaining a deeper understanding of the challenges and possibilities of the area of industry you want to work in.

Our Natural Sciences MNatSc, BSc course offers the opportunity for an industrial placement between years 2 and 3 or years 3 and 4 of your degree. This will extend the length of your course by a year.

Our dedicated Employability team will work with you during a series of placement information and preparation sessions. These sessions will inform you of the wide variety of options available to you, what to expect from the application process and how to apply. Additionally, you'll have the support of a personal tutor throughout your placement year, who will help you decide how to use your experiences in your studies when you return.

“J am helping on a project aiming to develop a product for firefighters. I really enjoy getting to meet lots of new people from different countries in a completely new environment.”

SOPHIE KIRKPATRICK
NATURAL SCIENCES MNATSC
INDUSTRIAL PLACEMENT YEAR AT DIVERSEY

STUDY ABROAD

Natural scientists are needed all over the world, and our Study Abroad programme gives you the opportunity to find out how science is pursued in other cultures – not just as an observer, but as an active participant.

You can take a study year abroad with your Natural Sciences MNatSc, BSc degree, usually as an additional year after the second of your course.

We have over 400 partner institutions to choose from, including in Australia, Canada, France, Germany, Hungary, Spain, Singapore and the USA. You'll have the chance to immerse yourself in another culture, make new connections and have unforgettable experiences, while gaining an overseas education and developing the skills employers seek.

If you need help learning a new language before your study year, the University's Language Centre can arrange study options ahead of time.

“My best experience as a student was my year abroad in Canada. I've definitely made some friends for life at university.”

HANNAH CHARLTON
NATURAL SCIENCES MNATSC
STUDY YEAR ABROAD IN CANADA
OUR NATURAL SCIENCES COURSE

Natural Sciences is a prestigious degree, designed to prepare you for taking on the scientific challenges of the future.

The course is extremely flexible, giving you the choice of which science subjects you want to study and how much you study of each subject. You can also choose whether or not to spend a year studying abroad or working in industry.

HOW THE COURSE WORKS

The MNatSc course lasts for four years, and during each year you’ll study 120 credits. You’ll begin by studying three subjects from this list, eventually focusing on two:

- Biology
- Biochemistry
- Chemistry
- Environmental Science
- Food Science and Nutrition
- Mathematics
- Physics

YEAR ONE

In your first year you’ll study three subjects and take 40 credits from each.

You can choose your three subjects from a list of seven and the choice is entirely yours. However, if you choose to study physics, you must also study mathematics. You must have achieved grade A in the required A-level.

Note that you cannot choose a combination of environmental science and food science and nutrition.

YEAR TWO

In your second year, you must continue to study at least two of the three subjects that you studied in your first year. You can choose to study these two subjects equally (60 credits of each), or as a major/minor split (80 credits of one subject and 40 of the other).

Alternatively, you could choose to study 50 credits of each subject and make up the remaining 20 credits by either studying the third science subject you studied in your first year or a discovery module from an area of your choosing.

If you study physics in your second year, you must also study at least 20 credits of mathematics.

YEAR THREE

In your third year, you will continue to study the two subjects that you primarily studied in your second year. You could choose to study these two subjects equally (60 credits of each) or as a major/minor split (80 credits of one subject and 40 of the other).

You have the option to study up to 20 credits of Discovery modules in year three. In the BSc programme, you will also undertake a 20-credit independent project.

YEAR FOUR

In the final year of the MNatSc programme, you will undertake an independent research project worth 40-60 credits, with the remaining 60-80 credits spent on optional modules. This must include at least 20 credits of theory in each of your two main subjects.

The research project is your opportunity to pursue the topics that interest you the most. It could be based in one scientific area, or an interdisciplinary project building on both the sciences that you’re studying.

FOR FULL COURSE DETAILS, INCLUDING MODULE INFORMATION, VISIT courses.leeds.ac.uk
YEAR 1
Study three science or mathematics subjects equally.

YEAR 2
Study two subjects equally or as a major/minor split.
You can also choose to take a third subject. This can be another science or a discovery module such as a language course.

YEAR 3
Study two subjects equally or as a major/minor split.

YEAR 4
Study two subjects and undertake a major research project.
COURSE THEMES AND COMBINATIONS

Being able to build a course around your own passions and interests is one of the greatest appeals of Natural Sciences at Leeds. Here are some examples of how subjects can be combined for interdisciplinary study of novel and exciting fields:

MATERIALS SCIENCE AND NANOTECHNOLOGY

New materials with reactive and dynamic properties influence everything, from new electronics to self-repairing polymers and new materials for biomedical applications. To control the global properties of materials correctly, you need to understand how they work at the smallest scale. By combining your knowledge of physics, chemistry and maths, you will gain new insights into the nanoscale world.

CHEMISTRY, MATHEMATICS, PHYSICS

NOVEL THERAPEUTICS

The modern-day pharmaceutical industry uses combinations of biological and chemical methods to target disease. New therapies could be a small chemical molecule that selectively targets a biological receptor or an antibody that targets a cancer cell. Some modern therapies even contain biological and chemical components linked together.

CHEMICAL BIOLOGY

Chemical biology lets us use the power of chemistry to gain new insights into biological systems. Chemical synthesis enables the preparation of specific molecular probes that let us understand biological pathways in ever more detail and understand how nature is controlled at the molecular level.
CHEMISTRY, ENVIRONMENTAL SCIENCE, MATHEMATICS

**SCIENCE OF THE ATMOSPHERE**

The science of the atmosphere controls our everyday lives to such a huge extent that we need to understand the reactions that take place in the atmosphere as well as how species in the atmosphere move and interact. Atmospheric scientists also study other worlds, designing models and experiments to study the atmospheres on extraterrestrial planets and their moons.

“**My subjects complement each other very well, so I feel like I’m just doing a course in all the little things that interest me. It is very interesting to see the different approaches each science has to similar problems and very rewarding to see the overlap and understand all angles of it fully.”**

KIM SPIJKERS-SHAW
NATURAL SCIENCES MNATSC

MATHEMATICS, PHYSICS, BIOCHEMISTRY OR BIOLOGY

**BIOPHYSICS**

Application of methods from physics in the life sciences has revolutionised our understanding of how biological systems work. Thanks to these high-level physics concepts, we can look at processes such as the folding up of proteins one molecule at a time or understand the tiny changes in energy that occur when molecules interact. At the same time, theoretical modelling methods let us simulate complex biological systems to understand them in ever greater detail.

**MATHEMATICS, BIOCHEMISTRY, BIOLOGY**

**BIOINFORMATICS**

The human genome contains about six billion base pairs of DNA. What is the function of the products of these genes and what does the rest of the DNA outside the genes do? These questions require us to be able to handle huge quantities of data, looking for small but significant differences. By combining advanced mathematical methods, statistical analysis and biological insight, bioinformaticians are slowly revealing the subtle control mechanisms buried in the heart of our DNA.

**MATHEMATICAL BIOLOGY**

Biology is hugely diverse and complex – combinations of high level mathematics and biology let us understand these systems in unprecedented detail. From the diversity of genes to evolution and population dynamics, your mathematical knowledge will help you develop new insights into these key processes.

FOOD SCIENCE AND NUTRITION, MATHEMATICS, PHYSICS

**SOFT MATTER AND FOOD FORMULATION**

Understanding and predicting the properties of soft matter requires the application of fundamental concepts in applied mathematics and physics such as fluid dynamics and statistical mechanics. This can be used, for example, to optimise formulation and processing of foods to enhance their texture and mouthfeel, providing consumers with a more enjoyable gastronomic experience.

**MODULES**

A very large number of potential modules is available on this course. For a complete list, please visit the course catalogue: [www.leeds.ac.uk/courses](http://www.leeds.ac.uk/courses)

The range of compulsory and optional modules available to you depends on which science subjects you choose to focus on. Some modules become compulsory if you choose certain combinations of subjects.
ENTRY REQUIREMENTS AND HOW TO APPLY

A-level: A*AA, including sciences relating to pathway.

Your A-level subject combination must enable the study of three subjects in year one. See table below for details of which A-level is required to study which subject on the course.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Required A-level</th>
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<tbody>
<tr>
<td>Biology</td>
<td>Biology</td>
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<tr>
<td>Biochemistry</td>
<td>Biology or Chemistry</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Environmental science</td>
<td>Any two science subjects</td>
</tr>
<tr>
<td>Food science and nutrition</td>
<td>Any two science subjects</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics and Mathematics</td>
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</tbody>
</table>

A-level General Studies and Critical Thinking are excluded. Where an A-level science subject is taken, we require a pass in the practical science element, alongside the achievement of the A-level at the stated grade.

We also accept a variety of alternative qualifications. Check our website for details.

ENGLISH LANGUAGE REQUIREMENTS

GCSE English Language grade C (or above) or an equivalent recognised English language qualification, eg IELTS 6.0 overall with no less than 5.5 in each element.
THE APPLICATION PROCESS

ACCESS TO LEEDS

We’re committed to identifying the best possible applicants, regardless of personal circumstances or background. If you do not meet our entry criteria, you may be eligible through the Access to Leeds scheme.

leeds.ac.uk/a2l

HOW TO APPLY

All undergraduate applications should be made through the Universities and Colleges Admissions Service (UCAS).

ucas.com

OFFER PROCESS

Suitable applicants will be invited to an applicant day, which gives you the opportunity to meet our academic staff and students, enjoy a tour of our facilities, view student accommodation and find out more about your course.

We like to interview applicants before making an offer, so the day will also include an interview with one of our academics. This will give you the chance to discuss your application in more detail, check that it’s the right course for you and your career plans, have your questions answered and find out more about studying at Leeds.

SCHOLARSHIPS

The University of Leeds has a long-standing history of helping students to manage their finances while at University, with a comprehensive range of bursaries and scholarships available.

natsci.leeds.ac.uk/undergraduate/scholarships

CONTACT US

If you require any more information about our courses, modules or any other aspect of studying Natural Sciences at Leeds, please contact our Undergraduate Admissions team.

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