

Lancaster
University



Biochemistry
Undergraduate Degrees 2026



Unlock the *secrets of life*

Blending biology and chemistry, biochemistry explores the molecules that make up all living things and how they interact to drive the processes that keep us alive.

This means that a degree in biochemistry will not only provide you with the fundamental understanding of living organisms that underpins so much of medicine and the life sciences, but also the opportunity to explore cutting-edge techniques and technologies that have the potential to change the world.

It's an exciting combination that could see you play a role in tackling major global challenges, from finding cures for disease to improving crop yields.

When you study biochemistry at Lancaster, you will join our Department of Biomedical and Life Sciences.

With courses ranging from biology to neuroscience, pharmacology to biomedicine you will become part of our thriving community of like-minded students.

It's where you will make life-long friends and memories in practical sessions.

It's where you will learn from renowned scientists.

And, it's where we will prepare you for life beyond Lancaster, developing your employability and ensuring you're ready to make an impact in your future career, whether that's within or beyond the lab.

Your time at university has the potential to define the rest of your life. I would like you to be assured that we are here to support you every step of the way.



*Head of Biomedical
and Life Sciences*

Professor Jackie Parry



Biosciences at Lancaster

Biochemistry is one of a spectrum of biosciences subjects taught at Lancaster University.

- + Biology - our most flexible degree, encompassing the study of life from cells to animals, plants to whole communities and ecosystems.
- + Biomedicine and Biomedical Science – our most specialised courses, focussing on the study of human life processes and disease.
- + Biochemistry – uniting biology and chemistry to explore life at a molecular and cellular level.
- + Pharmaceutical Science - the design, formulation, development, manufacturing and evaluation of drugs.
- + Pharmacology – exploring how drugs interact with living systems and affect our bodies.
- + Neuroscience – combining biology and psychology to understand the nervous system's role in behaviour and brain disorders.
- + Ecology and Conservation – focussing on ecosystems, animal behaviour, evolution and global change biology.



A level requirements

Degree title		Degree (Hons)	UCAS code	Course duration (years)	Typical A level offer
Biochemistry		BSc	C700	3	AAB#
Biochemistry		MSci	C706	4	AAA#
Biochemistry (Placement Year)		BSc	C707	4	AAB#
Biochemistry (Study Abroad)		BSc	C710	4	AAB#
Biochemistry (with a Foundation Year)		BSc	C70F	4	CCC##

#This should include A level Biology and Chemistry. These courses also require a GCSE in English Language (Grade 4/C) and Mathematics (Grade 5/B).

##This should include A level Biology and Chemistry. These courses also require a GCSE in English Language (Grade 4/C) and Mathematics (Grade 6/B).

BTEC and International Baccalaureate (IB) entry requirements

Biochemistry degree	BTEC	IB
MSci	N/A†	36 points≈
BSc	DDD††	35 points≈
With Foundation Year	MMM†††	27 points≈

† Only considered for entry to the BSc Hons course variant. Subject to academic progression and availability, students can transfer to the MSci course.

††BTEC only considered alongside A level Chemistry grade B, and to include sufficient Biology content. We require Distinctions in the majority of relevant science units.

††† MMM considered on a case-by-case basis, and to include sufficient science units at Distinction. We may require an A level Chemistry grade D.

≈16 points from the best 3 HL subjects including 6 in HL Biology and 6 in HL Chemistry.

≈14 points from the best 3 HL subjects including 4 in HL Biology and 4 in HL Chemistry.

Made for *learning*



Taught by experts from our Biomedical and Life Sciences and Chemistry departments, you will receive a structured, progressive training in biochemistry.

How you will learn

Lectures introduce the key issues and findings in each topic and are delivered by subject experts, while laboratory practicals and workshops are where you will apply this learning. Workshops are interactive sessions that may use problem solving, computer labs, group work or scientific literature to give you a solid understanding of the theory covered in lectures.

You will also have small group tutorials where you will acquire the key skills needed for your degree.

Your Academic Tutor is here to help you with academic queries, pastoral support or careers advice.

A hands-on course

During laboratory practicals, you will put your learning into practice and become skilled in using equipment and techniques to understand the cellular, molecular and chemical interactions within living systems.

This experience will mean you have the skills to not only successfully complete your research projects later in your degree, but also ensure you're well prepared if you choose to go on to a lab-based career.

Research with impact

The academics you'll learn from are experts in their respective fields. Their research is shaping our understanding of the world and this feeds into our degrees, ensuring your education is informed by cutting-edge thinking.

- + Dr Stephen Roberts researches how electrical signals travel across membranes in fungi and yeast to build our understanding of drug development and delivery.
- + Dr Nick Robinson studies the biochemistry of organisms that thrive in extreme environments like deep sea hydrothermal vents and hot springs.
- + Professor Sarah Allinson is exploring the cellular response to UVA light, and how DNA repair in tumour cells may be attenuated to make cancer treatments more effective.
- + Dr Maria Paz Munoz-Herranz focusses on the discovery and development of new organic and organometallic reactions to produce novel compounds with drug-like properties.

Test your knowledge

The assessment process varies across modules and includes laboratory reports, essays, independent project reports, group presentations, multiple-choice tests and exams.

Assessment is an ongoing process. This means we offer you feedback throughout your degree as part of your preparation for end-of-module exams.

“
*I know I can
look back
at my
university
experience
and
confidently
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”



Zainab, third-year student

Biochemistry BSc

Whilst studying biochemistry is a significant part of my university experience, going to university is so much more than that. You'll become an independent adult, so you need to spend time doing day-to-day life admin, like buying groceries.

Moreover, you'll make some amazing friends – people you live with, others in your college and those on the same course as you.

I'm so glad I chose to study biochemistry at Lancaster. That's not to say there hasn't been challenges and times when the course has been tough, but what's important is overcoming those and making the most of your university experience - and I know I can look back at my university experience and confidently say it has been amazing.



Gain *real-world* experience

Studying our Biochemistry (Placement Year) BSc is an ideal way to stand out in the competitive job market.

It's an opportunity to develop valuable, hands-on experience in your chosen field and helps you to understand how the academic theory you learn during your degree translates into real-world application.

Placements are paid, professional-level roles, lasting between ten and 12 months.

Our biochemistry students have secured placement positions with many top organisations, including:

- + Global Health Outcomes Intern - ViiV Healthcare
- + Healthcare Marketing Intern - Pfizer
- + Science Innovation Oral Health Intern - GSK

We will use all reasonable effort to support you to find a suitable role for your placement year, drawing on our strong links with organisations across healthcare, industry and research.

At present, students only pay 20 per cent of the standard tuition fee in the year of their placement. Please see our website for full details.

Five reasons to take a placement year

1. Try out your ideal job
2. Build a network of professional contacts
3. Grow in confidence
4. Boost your CV
5. Maybe even get a job offer!

Biosciences internships at Lancaster

You can apply for a paid summer internship in our department, helping you to gain additional research experience. Past interns have worked on research topics including Alzheimer's disease, cancer biology, immunology, microbiology and infectious diseases.



Rebecca, *third-year student*

Biochemistry (Placement Year) BSc

Vertex Pharmaceuticals is a global biotechnology company that invests in scientific innovation to create transformative medicines for people with serious diseases. My role was lab-based, requiring me to conduct research and develop new experimental protocols.

As part of my placement, I had the opportunity to learn new techniques, such as protein crystallography and surface plasmon resonance (SPR). I was also able to experience familiar skills, such as protein expression and purification, in the context of a biotechnology company.

I now understand the collaborative, fast-paced nature of the sector and I loved it! I spoke to many researchers and learnt about their career paths and decided that my next step will be further study through a PhD.



Your global *experience*

Choosing our Biochemistry (Study Abroad) BSc is a fantastic opportunity to see the world, grow in confidence, and become even more employable when you graduate.

Our study abroad degree programme will see you spend your third year at one of our trusted partner institutions in North America or Australasia.

There, you will gain an understanding of a different culture and society and a more global world view. It's also a chance to gain new perspectives on biochemistry.

You will choose specialist modules relating to your degree and potentially modules from other subjects offered by the host university that are specific to that university and country.

Altogether, your global experience will see you return to Lancaster in your final year as a more well-rounded, confident and employable version of yourself. This fourth year of your studies will follow the same curriculum as the final year of our three-year Biochemistry BSc.

At present, students only pay 15 per cent of the standard tuition fee during their study abroad year. Please see our website for full details.



Visit lancaster.ac.uk/study-abroad to see a full list of the overseas institutions with which we currently have a partnership arrangement.

Lancaster is a truly international university, with students and staff from over 100 different countries and partner institutions around the world.

Your global experience is about living and learning with people from different cultures, whether through your course, your college or your Students' Union.



“

The experiences and people you meet will make it an unforgettable experience and something you won't be able to stop talking about.

”

Study Abroad at
University of British
Columbia in Vancouver

Lancaster University



Alison, third-year student
Biochemistry (Study Abroad)
BSc

The opportunity to study in a different country for a whole year is a truly unique experience and was something I couldn't pass up. I had always wanted to go to Canada and when I saw that was an option, I knew I had to do it.

I studied at the University of British Columbia in Vancouver, which was a highlight in itself. The campus was situated right on the edge of the city, surrounded by beaches and mountains in the distance. There was always a positive buzz around the campus and the university spirit was amazing. I managed to do so much, from backcountry skiing and sunset swims to travelling up to the Rockies in our midterm breaks.

The experiences and people you meet will make it an unforgettable experience and something you won't be able to stop talking about. I would do it all over again if I could!

A hands-on *degree*

Our state-of-the-art life science teaching laboratories are where you'll put the knowledge you've acquired from lectures and tutorials into practice, and where you'll get to know your coursemates and academics while developing the practical skills of a modern biochemist.

Core techniques and equipment

You will learn to use sophisticated equipment and carry out techniques to understand molecules, cells and organisms.

Our teaching labs are well-equipped with all the resources you need to learn both core and advanced techniques applicable to your degree programme.

Teaching lab equipment includes:

- + microscopes
- + spectrophotometers
- + centrifuges
- + DNA, RNA and protein gel running and visualisation equipment
- + Polymerase chain reaction (PCR) thermocyclers
- + cell culture incubators
- + waterbaths
- + fume hoods
- + microbiology and histology preparation areas



World-class facilities

Depending on your choice of modules or research project theme, you may also use some of the following labs and facilities:

Bioimaging suite

Explore the microscopic world using cutting-edge confocal and electron microscopes. From observing live cells to analysing complex tissues, you'll carry out real experiments using the same tools as researchers, developing essential skills that prepare you for careers in research, biotechnology, and biomedical science.

Protein purification and characterisation

Explore how proteins, the essential building blocks of life, are studied using advanced lab equipment. Learn to separate proteins from complex mixtures, assess their purity, and investigate their properties and functions.

Flow cytometry

Use cutting-edge tools to analyse thousands of cells per second. By tagging cells with fluorescent markers, you can assess their size, shape, and function. This powerful technique helps you explore immune responses detect disease and develop lab skills essential for careers in biomedical research and diagnostics.

Polymerase Chain Reaction (PCR)

A key technique for amplifying DNA. You'll prepare samples, run reactions, and interpret results, skills that are essential for genetic research and diagnostics. Understand how to replicate and study genes in detail builds a strong foundation for careers in molecular biology, forensics, and medical science.

Cell culture

Learn to grow and work with living cells in a controlled lab environment. Using incubators, safety cabinets and microscopes, you'll study how cells behave and respond to treatments. These essential skills prepare you for careers in areas like cancer research, drug development and regenerative medicine.



 5TH

in the UK for learning opportunities

National Student

Survey 2024



Biochemistry

BSc Hons, MSci Hons

By understanding life at the molecular level, you can play a role in addressing major global challenges like developing treatments for disease or improving forensics in police investigations.

- + In Year 1, you will study a range of core topics designed to provide you with a broad overview of biology and chemistry, including molecules of life, cell biology and organic chemistry that will build on your pre-university knowledge.
- + In Year 2, you may choose to continue to study chemistry options or focus on bioscience-related topics, such as pharmacology or drug design and development.
- + During your final year, you will have an even greater choice of modules and may explore themes such as molecular medicine or cell signalling. You will also put your learning into practice with your own independent research project.

Find out more about our biochemistry degrees and module options on our website.



Enhancing your curriculum

We continually review and enhance our course curricula to ensure we are delivering the best possible learning experience, and to make sure that the subject knowledge and transferable skills you develop will prepare you for your future. Information within this publication with respect to courses and modules is correct at the time of publication, and the University will make every reasonable effort to offer courses and modules as advertised. In some cases, changes may be necessary and may result in new modules or some modules and combinations being unavailable, for example as a result of student feedback, timetabling, staff changes and new research.

Year 1

Core Modules

Introduction to Biosciences

An introduction to the essential skills required to study the biosciences. You will gain hands-on experience of essential laboratory skills and equipment and learn how to conduct ethical research, analyse data and present your findings.

Molecules to Cells

All cellular life synthesises simple organic molecules such as sugars, lipids, amino acids and nucleic acids. You will learn how organisms do this to store energy and genetic information, how they copy the genome to next generation cells and how defects in this process can promote cancer.

Fundamental Chemistry A

A bridge to university-level chemistry, you will revisit fundamental chemistry concepts. First, you will learn how electrons behave in atoms and molecular bonds and then the basic principles of organic, inorganic and physical chemistry.

Genetics and Biotechnology

Examine the molecular basis of inheritance, genome sequencing and how DNA damage can lead to genetic mutations. You will also discover how molecular biotechnologies are transforming research, healthcare and industry.

Microbes, Pathogens and Immunity

Learn how some microbes are harmful but others are important to us, how the human host responds to exposure to pathogenic microorganisms, the intricate relationship between pathogens and human health and how pathogens cause disease.

Optional Modules currently include:

- + Foundations of Pharmacology and Pharmaceutical Science
- + Fundamental Chemistry B

Year 2

Core Modules

Microbiology and Immunology

Explore the roles of microbes and learn how our indigenous microbes help with physiological functions, protect us from pathogens and how they are tolerated by our immune system. Learn about the pathogenic mechanisms of microbes, our natural defences, and examine infection control interventions.

Biochemistry of Cellular Metabolism

Study the structure and function of key biomolecules such as proteins, lipids, and carbohydrates, with an emphasis on their roles in metabolic pathways and other essential cellular mechanisms. This module will provide you with the molecular underpinnings of human health and highlight how disruptions in biochemical pathways contribute to disease development.

Life Cycle of Proteins

Develop your understanding of the life cycle of proteins, from synthesis to degradation. You will use experimental approaches and techniques used to study proteins and gain new insights into their applications.

Optional Modules currently include:

- + Fundamentals of Neuroscience
- + Pharmacology
- + Further Organic Chemistry
- + Further Chemical Analysis and Spectroscopy
- + Cell and Developmental Biology
- + Molecular Genetics
- + Drug Design and Development

Year 3

If you choose our Biochemistry BSc Study Abroad or Placement Year variants, you will study the modules detailed below when you return to Lancaster for your fourth year of study.

Core Modules

Biosciences Research Project

Gain first-hand research experience and immerse yourself in an area of biochemistry that fascinates you.

You'll receive one-to-one support from a member of academic staff and training in research methods to support your investigation.

Protein Bioinformatics

Learn how to visualise and manipulate protein structures, detect evolutionary pressures in gene sequences and track their history using phylogenetics.

Global Health Challenges

Study challenges of global significance and gain a real-world perspective on the multi-disciplinary, collaborative approaches required to tackle them.

Optional Modules currently include:

- + Medical Genetics and Clinical Immunology
- + Cancer Biology and Therapeutics
- + Advanced Drug Design and Development
- + Advanced Neuroscience - Circuits and Systems
- + Biology of Ageing
- + Cell Signalling in Health and Disease
- + Ethics in Biomedicine
- + Advanced Synthetic Chemistry
- + Advanced Organic Chemistry and Materials Chemistry

Please see our website for the full list of optional modules available.

Core Modules

Biosciences Integrated Master's Research Project

You will undertake an extended research project which will enable you to build on the research skills developed during your third-year and further enhance your research experience.

Optional Modules currently include:

- + Cancer – Bench to Bedside
- + Brain Disorders
- + Emerging Therapeutics in Immunology
- + Drug Development from Concept to Clinic
- + Neglected Tropical Diseases

Please see our website for further information about the options available.



Hello *future!*

A biochemistry degree spanning the disciplines of biology and chemistry is excellent preparation for further study or a career in academic or commercial research. It will also give you the transferable skills and analytical training to enter diverse non-science fields including management, teaching, marketing and finance.

Graduates often enter the pharmaceutical or biotechnology sectors or academia and education, in roles such as*:

- + Analytical Chemist
- + Molecular Laboratory Scientist
- + Operations Analyst
- + Product Delivery Scientist
- + Research and Development Scientist
- + Healthcare Scientist
- + Biotechnologist
- + Forensic Scientist
- + Medicinal Chemist
- + Medical Doctor (following a graduate-entry degree in medicine)

*Some of these roles may require further training.

Others may look beyond the sciences and use the transferable skills they have developed in their degree to build successful careers as:

- + NHS Manager
- + Finance Manager
- + Accountant

NHS Scientist Training Programme

Our biochemistry degree is an ideal basis for applying for a highly-sought-after place on the NHS Scientist Training Programme. For more details on specialisms and entry requirements, please visit the NHS website.

Postgraduate study

Many of our students go on to postgraduate study in a field they are passionate about, studying master's degrees or PhDs in subjects like medicinal chemistry, pharmacology, cancer research, neuroscience, microbiology or immunology.

Careers support

Whatever your career aspirations, we'll strive to support you and enhance your employability. You'll receive lifelong support from our careers team, which will help you to make connections with graduate employers and recent alumni.



Emanuele, graduate

Biochemistry BSc

I work in the infection and immunobiology funding team at the Wellcome Trust: a charitable funding organisation.

I manage a portfolio of grant applications and awards, primarily working on those submitted to Wellcome's discovery research schemes. I also manage one of Wellcome's advisory committees and co-lead the management of Wellcome's doctoral training programmes in basic science.

I appreciate being in a role where I can create change and see the impact of my contributions. I also enjoy working with people who are leading exciting projects because I can see first-hand the impact of the Wellcome Trust's work.



Biomedical and Life Sciences
Lancaster University, Lancaster, LA1 4YQ
bioladmit@lancaster.ac.uk
lancaster.ac.uk/biosciences

The information provided in this publication relates primarily to 2026 entry to the University and every effort has been taken to ensure the information is correct at the time of printing in June 2025. The University will use all reasonable effort to deliver the course as described but the University reserves the right to make changes after going to print. You are advised to consult our website at: lancaster.ac.uk/study for up-to-date information before you submit your application. Further legal information may be found at: lancaster.ac.uk/compliance/legalnotice.