Biosciences

Biosciences | Lancaster University

www.lancaster.ac.uk/study

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Connect with Us

bioladmit@lancaster.ac.uk

Virtual Tour: www.lancaster.ac.uk/virtualtour
Visit Us: www.lancaster.ac.uk/visitus

For Biological Sciences, Biology, and Ecology and Conservation degree programmes please contact:

The Undergraduate Admissions Coordinator
Lancaster Environment Centre
Lancaster University
Lancaster
LA1 4YG
Tel: 01524 510249
Web: www.lancaster.ac.uk/lec
Facebook: Lancaster Environment Centre
Instagram: /lancaster_environment
Twitter: @LancsUniLEC

For Biomedical and Biochemistry-related degree programmes (including Biological Sciences with Biomedicine and Biology with Psychology), and Bioscience with Entrepreneurship please contact:

The Undergraduate Admissions Coordinator
Division of Biomedical and Life Sciences
Lancaster University
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LA1 4YQ
Tel: 01524 593265
Web: www.lancaster.ac.uk/fhm/bls
Facebook: BLS Lancaster
Twitter: @Lancaster_FHM

Welcome to Lancaster

Why study the Biosciences?

The biosciences are fundamental to our understanding of many of the key issues facing human society today. They not only help to unravel the big questions of how life on Earth began and evolved into the complex organisms and ecosystems with which we are familiar, but also have an important role in understanding and finding solutions for contemporary issues such as; ageing, the development of new treatments for diseases including Alzheimer's, cancer, arthritis, and tropical diseases and the need to produce sufficient food to feed the increasing global population. In a wider sense, the biosciences can even inform our understanding of the effects of climate change and human activity on the Earth's biodiversity.

Lancaster is one of the top places to study the biosciences. The University is one of the top in the the world and is ranked **9th in the UK** according to The Guardian University Guide (2018). Our degrees equip you with a comprehensive grounding in biological principles and contemporary issues in bioscience together with training in the key techniques and skills required to help tackle these issues in your future workplace.

Flexible and Interdisciplinary

You can maintain a broad interest across a range of topics or specialise in a particular area

Practical Study

Around 50% of the contact time on our degrees is used for practical and workshop activities in the laboratory, the field, or in PC labs

Industrial Links

Work with external organisations throughout your degree, including as part of your dissertation project

Quality Teaching

We received the highest possible score of 'Full Confidence' in the latest University teaching assessment

Great Career Prospects

Our students graduate with a diverse suite of skills, enabling them to gain employment in a varied range of careers in the biosciences

World-leading Research

Our research underpins our undergraduate teaching and 83% of our research is world-leading and of international excellence (REF 2014)

Be Taught By The Best

Our bioscience degrees are taught jointly by staff from two sister Departments, Biomedical and Life Sciences (BLS) and Lancaster Environment Centre (LEC) with additional input from staff in the Departments of Chemistry, Psychology, and Lancaster Management School. The expertise of our staff in these departments spans the full breadth of the Biosciences, from biomedicine and biochemistry, molecular biology and physiology of cells and tissues through to global change biology, evolution, biodiversity conservation and sustainable resource management in agriculture. This diverse suite of skills and knowledge make Lancaster a really exciting learning environment and staff from all of these areas could contribute to your degree, depending on the modules you opt to take. Both departments have strong international research reputations, ensuring the high quality of our degrees through research-led teaching and the exposure of students to state-of-the-art facilities. We have recently invested over £4million in new Life Sciences teaching laboratories. Spread over two floors in a dedicated building, this new facility is the location for our Biosciences laboratory practicals and you may also use the laboratory facility during your dissertation project.

Research-led Teaching

Our academic staff are active researchers, which feeds directly into our teaching, meaning that you are exposed to the cutting edge of bioscience research

Laboratory Facilities

We have recently invested over **£4m** in new teaching laboratories, which are used for practical learning and dissertation projects

Bioscience Research at Lancaster

Biologists and Physicists are working together at Lancaster to unlock how the body's cells work at the subatomic level in order to develop new treatments for diseases like cystic fibrosis, Sudden Cardiac Arrest and Long QT Syndrome. Ion channels are natural nanotubes in the membranes of cells and contribute to the basic functioning of all forms of life. Dr Stephen Roberts is working to understand the role played by the malfunctioning of ion channels in these diseases. This ground-breaking collaboration brings together ideas that will help in the development of better drugs and new treatments for many diseases.

There are currently approximately 850,000 cases of dementia in the UK, with numbers expected to reach over a million by 2021. The most common cause of dementia is Alzheimer's disease which begins with the formation of senile plaques in the brain, damaging nerve cells and leading to memory loss and confusion. Researchers at Lancaster led by David Allsop, Professor of Neuroscience and the first scientist to isolate senile plaques from the human brain, have developed a new drug that reduces the number of these senile plaques in laboratory tests. This has the potential to stop the development of dementia in its tracks!

Researchers at Lancaster have shown that fishing is fundamentally altering the food chain in coral reefs and putting extra pressure on top-level predator fish. A team of scientists led by Professor Nick Graham have looked at 253 coral reef sites across nine countries or jurisdictions in the Indian Ocean, from heavily fished reefs in Kenya to unfished reefs in the remote Chagos Archipelago. They show that lightly fished systems are well placed to both conserve top level fish, and support carefully regulated fisheries targeting these species. These results provide better insight into how to maintain the integrity of reef ecosystems while sustaining the livelihoods of local fishers.

The United Nations predicts that by 2050, global agriculture will need to produce approximately 70% more food on the land as currently used. A team led by Steve Long, FRS, Professor of Plant Biology and Crop Sciences at Lancaster, has shown that plant productivity can be increased by up to 20% approximately by boosting the levels of three proteins involved in photosynthesis, offering hope for improving food crops. Although still in its infancy, any new technologies resulting from this Bill and Melinda Gates Foundation-funded research will be made freely available to farmers of developing countries in Africa and South Asia.

Away From Campus

Lancaster Students in the Brazilian Amazon

Upland Ecology, Scotland

The mountains and upland areas of Scotland provide us with an opportunity to visit some of the few natural habitats left in the UK. We visit a variety of sites each day, including mountain plateaus, Caledonian pine forest, and other areas important to a range of plant and animal species. The focus is on understanding the landscape, the place of key species within it, and the conservation and management issues of upland regions. As well as visiting sites of great scenic beauty, we also get to know the fantastic flora of the region and usually see a broad range of animal species such as Red Deer, Osprey, Mountain Hare, Hen Harrier and Golden Eagle.

Tropical Biology and Conservation, Kenya

Based in the beautiful Rift Valley, Kenya, we explore the staggering biodiversity of local aquatic and terrestrial ecosystems, at the same time considering how best to monitor and protect it. Working with experts in African ecology from Lancaster Environment Centre, you will gain first-hand experience of the ecological processes and conservation issues common to the tropics. Together, we will evaluate the challenging balance between tropical conservation and human activity.

The Brazilian Amazon *

The Amazon is a fascinating place to explore the conservation and development challenges facing tropical forests. Based in the lower Rio Negro region of the Amazon basin, you will see a range of tropical wildlife, from hummingbirds to river dolphins, sloths, caiman and howler monkeys. You will visit people's homes and agricultural plots to understand the many challenges faced by rainforest people; and spend time in the beautiful forest itself, walking along remote trails or canoeing in the flooded forest. This is a unique opportunity to work with Amazon experts from Lancaster Environment Centre and understand the challenges of pursuing biodiversity conservation whilst also reducing poverty.

* Available to Ecology and Conservation students only

Doñana National Park, Spain

We visit Doñana National Park in the south-west of Spain, one of the most important biodiversity hotspots in Europe. The area is home to over 1500 species of plants, over 400 species of birds and 50 species of terrestrial mammals including the Iberian Lynx, the most endangered of the world's cats. The course explores the diversity of habitat and organisms living in the area and the actions that can be taken to promote the conservation of biodiversity. You will gain practical experience of identification, critical observation and accurate recording of plants, invertebrates and birds. A guided visit to the National Park provides you with an understanding of the role of National Parks in conservation.

Field courses are available to **Biology** and **Ecology and Conservation** students only, but students on other degree schemes can take advantage of full and half-day field excursions in the local area.

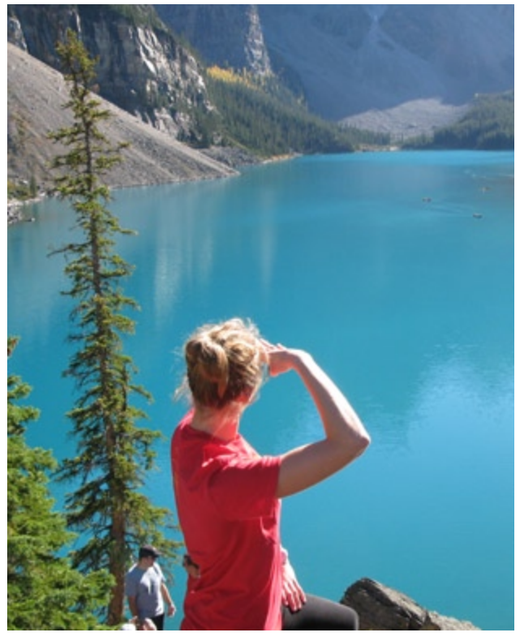
Opportunities For Overseas Study

Study Abroad

Our Biochemistry, Biomedicine, Biological Sciences, Biology, and Ecology and Conservation degrees are available with a study abroad option. The year abroad is not an add-on to your degree; it is fully integrated so that you can complete your BSc in just three years or MSci in four. You will spend your first year in Lancaster, your second at a university overseas, and then return to Lancaster for the third year. Destinations include the USA, Canada, Australia and New Zealand. In addition to broadening your academic horizons, developing your personal and social skills and providing you with an understanding of another culture and society, the experience is also likely to enhance your job prospects.

Where Can You Go?

The majority of our partner universities are in North America, located across the United States and Canada. You could spend your second year in Florida, Colorado, Maine, Oregon, Michigan, Ottawa, Vancouver or Toronto. Alternatively, you also have the opportunity of studying in Australia or New Zealand such as at Perth, Melbourne, Sydney or Wellington. The choice of destinations and number of places can vary from year-to-year, so although we cannot guarantee that you will be able to go to your first choice, we are sure that wherever you go it will be an experience to remember.



Can I Afford It?

Whilst there are clear financial implications in living abroad for a year (and many students take the opportunity to do other travelling while they are abroad), the study abroad scheme does not cost as much as you might think. There is also some important financial help available in the form of (i) reduced fees to Lancaster University; you will pay just 15%* of the usual tuition fee during the year abroad, and there are no fees payable to the overseas institution, (ii) an enhanced student loan, and (iii) a means-tested Government Travel Grant, which usually covers the cost of two return flights plus insurance.

Dual Offer System

If you apply for a study abroad course, we will also automatically consider you for the 'standard' degree programme (for which the entry requirements are typically lower) and therefore you do not need to list both courses on your UCAS application. If, at any time during your first year, you decide that you no longer want to study abroad, you can simply switch to the standard degree programme.

For more information on our Study Abroad scheme please visit: **www.lancaster.ac.uk/study-abroad**

* At the time of publication, 2017, this figure remains to be confirmed and may be subject to change.

Careers

94% of Biosciences students graduating in 2015 were in full-time employment and/or undertaking further study six months after finishing the course*

A Biosciences degree from Lancaster provides you with a wide range of transferable skills which you will find to be valuable in a many different career paths. In addition to going onto postgraduate study (both MSc and PhD), our recent graduates are also employed by a diverse range of organisations spanning business, industry and the public sector including the **NHS, Boots, GlaxoSmithKline, Environment Agency, RSPB, Syngenta, Blackwell Scientific Publishing, United Biscuits, and Scientific Pictures Ltd.**

Examples of the types of employment undertaken by some of our Bioscience graduates include:

- **Lecturer/Research Scientist**
- **Biomedical Scientist**
- **Science Communications Officer**
- **R&D Knowledge Manager**
- **Conservation Officer**
- **Wildlife Recording Officer**

Ami Weir
BSc Ecology
Recording Officer with the Wildlife Trust

Tiffany Daniels-Thorn
BSc Biochemistry with Biomedicine
CEO of BiVictriX Therapeutics

Liam Livingstone
BSc Biomedicine
Clinical Trials Assistant (CTA) with MAC Clinical Research

Junaid Amin
BSc Biological Sciences
Science Teacher

Networking Opportunities

From question and answer panel events to careers fairs, we provide you with many opportunities to network with alumni and employers. This includes an annual STEM careers fair, attended by over 60 employers ranging from small and medium enterprises to national organisations.

Work Experience

Relevant work experience while you are at university is crucial to achieving a good graduate job. An internship will give you the opportunity to apply your academic knowledge in real-world situations whilst helping you to develop your transferable skills such as team working, time management, leadership, networking and commercial awareness – and get paid for it! This will provide you with valuable work experience and employers frequently offer graduate roles to interns.

*Average proportion of students in employment or undertaking further study six months after graduating across all of our Biosciences degree schemes.

Personal Development

We place a great deal of emphasis on developing your career aspirations and preparing you for life after Lancaster.

This is achieved by:

- Providing tutorials and workshops on careers planning and preparation of integral parts of each degree
- Encouraging all of our students to attend a range of degree-specific careers events hosted by the Careers Service
- Providing you with the opportunity to plan and develop your career with experts from the Careers Service, and to receive practical advice from Lancaster graduates and industry experts
- Encouraging all students to register for the Lancaster Award, to reward voluntary work and work experience
- Ensuring you are kept fully up to date on opportunities for employment and further study

50% of the contact time is used for practicals & workshop activities in the lab, the field, or in PC labs and classrooms

YOUR DEGREE

86% of Biosciences students graduating in 2015/16 achieved a **1st or 2:1**

Our **Bioscience** Degree Programmes

Skills Development | **Research Projects** | **Internship Opportunities**

Three-Year Degrees

BSc Biochemistry (UCAS code: C700)
BSc Biochemistry with Genetics (UCAS code: C7C4)
BSc Biochemistry with Biomedicine (UCAS code: BC79)
BSc Biomedical Science (UCAS code: B990)
BSc Biomedicine (UCAS code: B701)
BSc Biological Sciences with Biomedicine (UCAS code: C1B9)
BSc Biological Sciences (UCAS code: C100)
BSc Biology (UCAS code: C101)
BSc Ecology and Conservation (UCAS code: C180)
BSc Biology with Psychology (UCAS code: C1C8)
BSc Bioscience with Entrepreneurship (UCAS code: C1N2)

Three-Year Study Abroad Degrees

BSc Biochemistry (Study Abroad) (UCAS code: C702)
BSc Biomedicine (Study Abroad) (UCAS code: C704)
BSc Biological Sciences (Study Abroad) (UCAS code: C102)
BSc Biology (Study Abroad) (UCAS code: C103)
BSc Ecology and Conservation (Study Abroad) (UCAS code: C182)

Four-Year Degrees

MSci Biomedicine (UCAS code: C703)
MSci Biomedicine (Study Abroad) (UCAS code: C705)
MSci Biochemistry (UCAS code: C706)
MSci Biological Sciences (UCAS code: 1M66)
MSci Biology (UCAS code: C109)
MSci Ecology and Conservation (Professional Experience) (UCAS code 0X48)

Three-Year Degrees

Our three-year BSc degrees offer you a range of options. These include core degrees with specialisms, as well as programmes with a choice of modules covering the whole of the biosciences, from biomedicine and biochemistry to biodiversity conservation and sustainable resource management in agriculture. We also offer you the flexibility to move between degrees. There is something here for everyone!

Opportunities for Study Abroad

The second year of our Study Abroad degrees is spent at one of our partner universities in the USA, Canada or Australasia. The year abroad is not an add-on to your degree; it is fully integrated so that you can complete your BSc in three years or MSci in four. As well as developing your academic and personal skills, the experience is also likely to enhance your job prospects.

Integrated Masters

The MSci degree is a four-year integrated Masters course allowing you to take the same taught modules as those available on the three-year BSc variant, but with the added benefit of a fourth year consisting of Masters-level taught modules and an extended research project. This additional year can enhance your job prospects, or give you the experience to decide whether a research career might be for you.

Students achieving an upper second class or higher overall in years two and three of the BSc can apply to transfer to the fourth year of the MSci

Research Projects

During your degree you'll conduct your own independent research project where you'll benefit from the research experience of our internationally renowned staff and be exposed to the latest technology used in a cutting-edge research laboratory. Alternatively, you can select to undertake a field-based research project or apply to do your project while on work placement with a commercial partner or external organisation. There are also opportunities to carry out projects at a European university via the Erasmus scheme. Students on our MSci programmes undertake a second, extended research project in the fourth year of their degree. These research projects are important elements of your degree with the added bonus that you might become a published author!

Examples of recent publications to which our students have contributed and gained authorship

Singh P, et al. (2017) Jasmonic acid-dependent regulation of seed dormancy following maternal herbivory in Arabidopsis. **New Phytologist** 214: 1702–1711

Formella M, Gatherer D (2016) The serology of Ebolavirus - a wider geographical range, a wider genus of viruses or a wider range of virulence? **Journal of General Virology** 97: 3120-3130

Howell KR, et al. (2015) Alternate wetting and drying irrigation maintained rice yields despite half the irrigation volume, but is currently unlikely to be adopted by smallholder lowland rice farmers in Nepal. **Food and Energy Security** 4: 144-157

Ismail MZBH, et al. (2015) The Drosophila insulin receptor independently modulates lifespan and locomotor senescence. **PLoS ONE** 10: e0125312

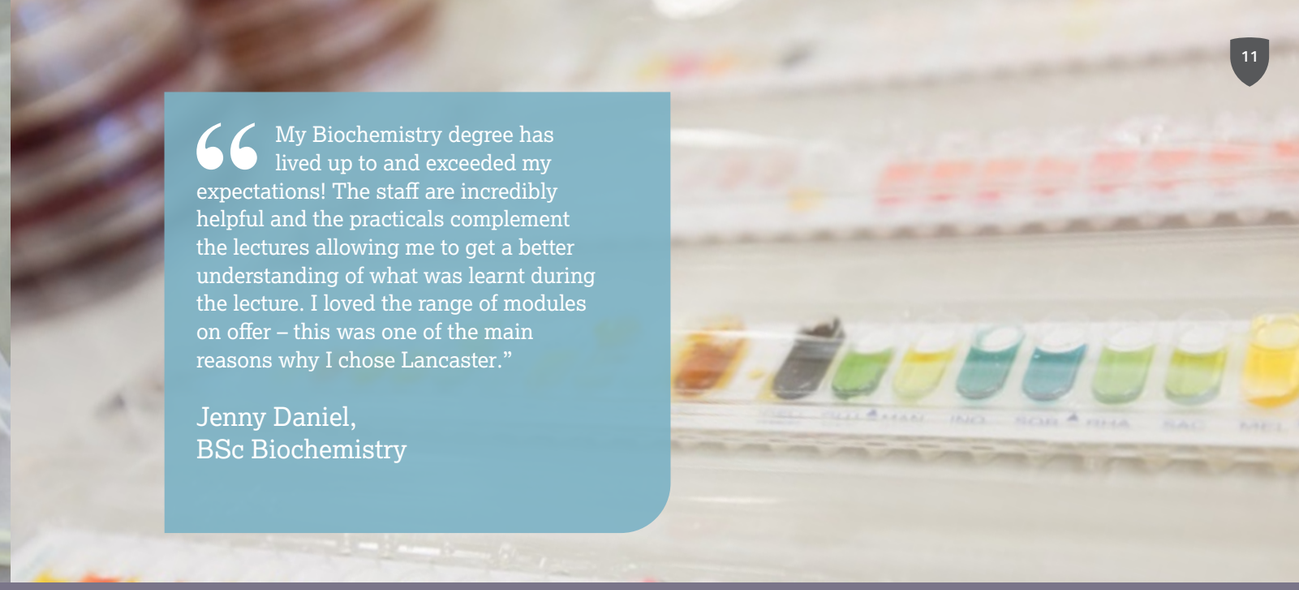
Study Abroad

100% of Study Abroad students graduating in 2016 achieved a **1st or a 2:1**

Internships & Placements

Examples include...

NHS, GlaxoSmithKline, AstraZeneca, RSPB, Lancashire Wildlife Trust, National Trust, Natural England, MAC Clinical Research



> My Biochemistry degree has lived up to and exceeded my expectations! The staff are incredibly helpful and the practicals complement the lectures allowing me to get a better understanding of what was learnt during the lecture. I loved the range of modules on offer – this was one of the main reasons why I chose Lancaster."
>
> Jenny Daniel,
> BSc Biochemistry

Biochemistry

BSc and MSci Hons UCAS Code: C700 & C706
BSc Hons (Study Abroad) UCAS Code: C702

Study Abroad

Future Careers

Academic, Industrial or Medical Research, Laboratory Technician, Forensic Science, Pharmaceutical or Food Industry, Teaching

Biochemistry is an exciting and rapidly developing subject and the primary investigative science within biology and medicine. The Biochemistry programmes at Lancaster provide students with training in all aspects of the subject coupled with a solid background in other related fields such as genetics and cell biology. You will learn about the structure and function of living organisms at the molecular level and choose specialist modules in the areas of biochemistry that most interest you.

You will study core modules in your first year designed to give you a solid overview of key concepts including Protein Biochemistry, Cell Structure and Function, Genetics and Organic Chemistry. In the second year, you'll focus on a range of biochemistry and chemistry modules, including Cell Biology, DNA Technology and Molecular Structure Determination, as well as some more practical oriented modules designed to equip you with the laboratory skills and knowledge required of a successful biochemist. You will also complete an independent research project on a contemporary topic in biochemistry. Students on the Study Abroad degree spend their second year at a university in North America or Australasia. In the third year you have the flexibility to tailor your final year to your biochemical interests and can select from a diverse range of subjects including Cell Signalling, Cancer, Tropical Diseases and Neurobiology. Students on the MSci degree study Advanced topics in Biochemistry and NMR, and also select from a wide variety of other taught Masters-level modules in the fourth year. The fourth year also provides you with the opportunity to undertake an extended research project.

The chemistry modules in your Biochemistry degree are taught by staff in the Department of Chemistry. The Department boasts an expanding team of research active chemists at the forefront of their respective fields with relevance to biology and medicine. Chemistry research at Lancaster is structured around three themes: **Synthetic Chemistry** – including research into molecule and material synthesis, bioimaging, catalysis, and supramolecular chemistry; **Analytical Chemistry and Spectroscopy** – research into the properties of molecules and materials including solid-state NMR, biospectroscopy, microfluidics, and photovoltaics; **Chemical Theory and Computation** – including research in molecular simulation, molecular assembly, quantum chemistry, and materials modelling.

Degree structure

Year 1

Core modules
Atoms and Molecules
Biotechnology
Chemical Reaction Kinetics
Cell Structure and Function
Coordination Chemistry
Genetics
Impact of Microbes
Infection and Immunity
Molecules of life
Organic Reactivity and Mechanism
Organic Structure
Protein Biochemistry
Skills in Biomedical and Life Sciences
Spectroscopy and Analytical Chemistry
Thermodynamics of Chemical Processes

Year 2

Core modules
Biochemical Techniques
Biochemistry
Cell Biology
DNA Technology
Employability Skills
Genetics

Year 2 (continued)
Medical Microbiology
Molecular Structure Determination
Research Project
The Physical Principles of Spectroscopy

Year 3

Core modules
Advanced Spectroscopy: Theory and Applications
Advanced Techniques for Analytical Separations
Molecular and Biochemical Parasitology
Protein Biochemistry
The Chemistry of Biomedical Imaging

Example optional modules, four selections
Cancer
Cell Cycle and Stem Cells
Cell Signalling
Clinical Immunology
Genetics
Innovation in the Biosciences
Medical Genetics
Neurobiology
Tropical Diseases

Year4
Advanced NMR: Proteins, Solids and Imaging
Advanced Topics in Biochemistry
Extended Research Project

Optional modules, two selections
Bioinformatics
Diseases of the Brain
Drug Discovery
Immunology
Molecular Basis of Cancer

Modules are subject to change and this list does not guarantee that a specific module will be available

> I enjoyed every moment of my degree. I found Lancaster the perfect place for my undergraduate studies. The best part of the course has been the laboratory practicals and my dissertation project where I gained hands-on experience of numerous techniques commonly employed both in industry and research."
>
> Nikolett Dravecz,
> BSc Biochemistry with Genetics

Biochemistry with Genetics

BSc Hons UCAS Code: C7C4

The Biochemistry with Genetics degree at Lancaster is aimed at students who wish to study biochemistry, but who want to focus on molecular mechanisms and the genetic blueprint of life, DNA. This is an exciting and rapidly expanding field, which has been at the forefront of many of the modern advances in biology and medicine. The degree provides you with training in key aspects of biochemistry that are essential when considering the multidisciplinary and interactive nature of today's modern biochemical and genetic research environment.

In the first year you will study core modules in biochemistry and genetics and are introduced to key topics in related fields such as biotechnology and cell biology. The second year develops and expands upon the academic skills that you have developed in Year 1 whilst providing you with an in-depth training in the key techniques associated with modern biochemical and genetic research through the provision of specialist techniques modules. You will also complete an independent research project working alongside researchers in this area. In the third year you will again take core biochemistry and genetics modules, which you can supplement with a choice of specialist optional modules to suit your own interest.

Degree structure

Year 1

Core modules
Anatomy & Tissue Structure
Biotechnology
Cell Structure & Function
Chemical Reaction Kinetics
Genetics
Hormones and Development
Human Physiology
Impact of Microbes
Infection & Immunity
Molecules of Life
Organic Reactivity & Mechanism
Organic Structure
Protein Biochemistry
Skills in Biomedical & Life Sciences
Thermodynamics of Chemical Processes

Year 2

Core modules
Biochemical Techniques
Biochemistry
Cell Biology
Cell Biology Techniques
DNA Technology
Employability Skills
Genetics
Medical Microbiology
Microbiological Techniques
Research Project

Year 3

Core modules
Cell Signalling
Biology of Ageing
Genetics
Medical Genetics
Molecular & Biochemical Parasitology
Protein Biochemistry

Example optional modules, two selections
Cancer
Cell Cycle & Stem Cells
Innovation in the Biosciences

Modules are subject to change and this list does not guarantee that a specific module will be available

Biochemistry with Biomedicine

BSc Hons UCAS Code: BC79

The Biochemistry with Biomedicine degree at Lancaster is aimed at students that want to study the structure and function of living organisms at the biochemical and molecular level, but who want to focus on how the molecular processes of life are altered by disease. The degree provides you with training in key aspects of biochemistry and biomedicine that are at the heart of modern biochemical and medical research and gives you an insight into how a knowledge of biochemistry can be used to develop treatments for diseases.

In the first year you will study core modules in biochemistry and biomedicine alongside modules in other topics such as cell biology, genetics and physiology. In the second year a combination of theory and specialist techniques modules will further develop and expand upon the academic and laboratory skills that you have acquired in Year 1. You will also complete an independent research project. Our extensive links with hospitals, at the local and national level, contributes to teaching on some of our biomedical modules and provides exciting research opportunities for your project. In the third year you have the opportunity to tailor your degree to your own interests and can select from a diverse range of modules including Clinical Immunolgy, Tropical Diseases and Cancer.

Degree structure

Year 1

Core modules
Anatomy & Tissue Structure
Biomedicine & Society
Biotechnology
Cell Structure & Function
Chemical Reaction Kinetics
Genetics
Human Physiology
Impact of Microbes
Infection & Immunity
Molecules of Life
Organic Reactivity & Mechanism
Organic Structure
Protein Biochemistry
Skills in Biomedical & Life Sciences
Thermodynamics of Chemical Processes

Year 2

Core modules
Biochemistry
Cell Biology
Cell Biology Techniques
DNA Technology
Employability Skills
Genetics
Medical Microbiology
Research Project

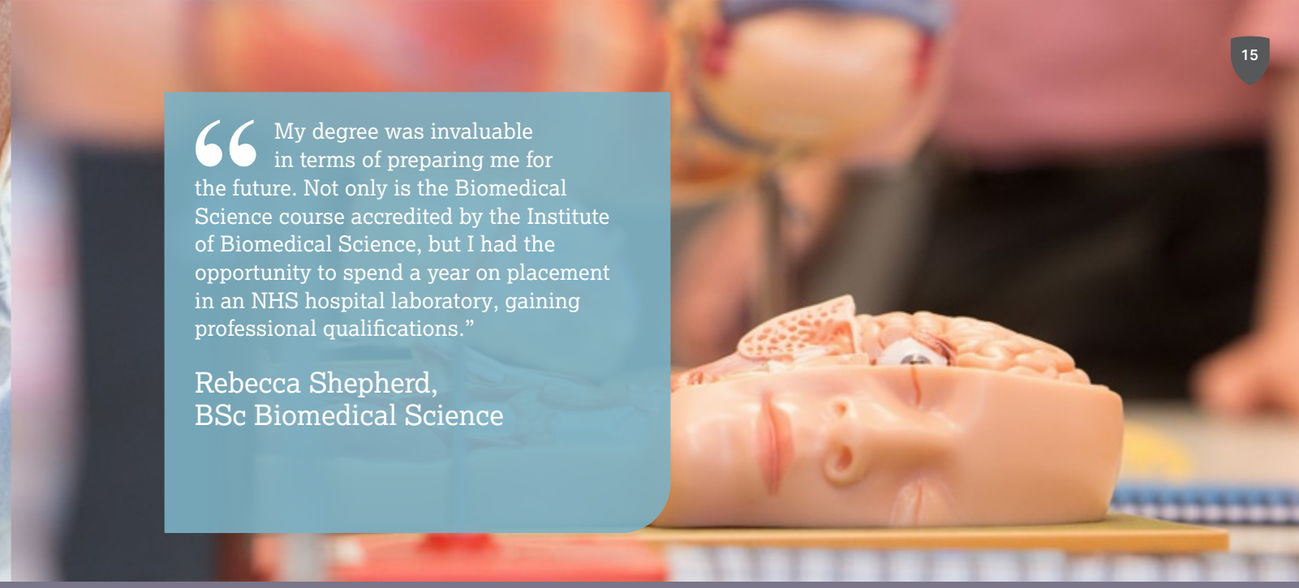
Example optional modules, two selections
Biochemical Techniques
Clinical Biochemistry
Microbiological Techniques
Practical Physiology

Year 3

Core modules
Molecular & Biochemical Parasitology
Protein Biochemistry

Example optional modules, six selections
Biology of Ageing
Cancer
Cell Cycle and Stem Cells
Cell Signalling
Clinical Immunology
Environmental Pathogens
Ethics in Biomedicine
Genetics
Innovation in the Biosciences
Medical Genetics
Neurobiology
Tropical Diseases

Modules are subject to change and this list does not guarantee that a specific module will be available



> “My degree was invaluable in terms of preparing me for the future. Not only is the Biomedical Science course accredited by the Institute of Biomedical Science, but I had the opportunity to spend a year on placement in an NHS hospital laboratory, gaining professional qualifications.”
>
> Rebecca Shepherd,
> BSc Biomedical Science

Biomedical Science

BSc Hons UCAS Code: B990

Accredited Degree

Future Careers

Biomedical Scientist – NHS, Academic, Industrial or Medical Research, Laboratory Technician, Forensic Science, Pharmaceutical or Food Industry, Teaching

Lancaster’s Biomedical Science degree is accredited by the Institute of Biomedical Science (IBMS) and is taught jointly with clinical and biomedical staff from local hospitals. The degree focuses on the key aspects of modern day biomedicine and is aimed at students that are interested in studying human life processes within the context of health and disease. You will receive a thorough grounding in the theory and laboratory techniques associated with biomedical science. This IBMS accredited degree, along with a training period in an NHS lab, represents a core route to employment in the NHS as a Biomedical Scientist.

Our structured degree scheme offers a range of compulsory modules which are at the heart of modern medical and health research. These subjects are taught with a particular emphasis on the molecules and mechanisms fundamental to life processes and how these are disrupted by disease. In the first year you’ll study 15 modules covering a wide-range of topics including Anatomy and Tissue Structure, Biomedicine and Society, and Diagnosis in Biomedical Science. In the second year, you’ll move on to study subjects such as Biochemistry, Cellular Pathology, and Medical Microbiology. You will also complete an independent research project on a contemporary topic in biomedical science such as research into skin, colorectal, breast and prostate cancers, Alzheimer’s and Parkinson’s diseases, arthritis and other human conditions and diseases. In the third year of this highly specialised degree, you’ll focus even more on aspects of human disease by taking modules in Cancer, Medical Genetics, and Pathobiology.

Degree structure

Year 1

Core modules
Anatomy & Tissue Structure
Biomedical Science in Practice
Biomedicine & Society
Biotechnology
Cell Structure & Function
Diagnosis in Biomedical Science
Experimental Design & Data Analysis
Genetics
Hormones & Development
Human Physiology
Impact of Microbes
Infection & Immunity
Molecules of Life
Protein Biochemistry
Skills in Biomedical & Life Sciences

Year 2

Core modules
Biochemistry
Cell Biology
Cellular Pathology
Clinical Biochemistry
Employability Skills
Genetics
Haematology & Transfusion Science
Medical Microbiology
Practical Physiology
Research Project

Year 3

Core modules
Cancer
Clinical Immunology
Environmental Pathogens
Medical Genetics
Pathobiology

Example optional modules
Cell Cycle & Stem Cells
Cell Signalling 1
Cell Signalling, Transport & Disease
Ethics in Biomedicine
Genetics
Innovation in the Biosciences
Neurobiology
Protein Biochemistry
Tropical Diseases

Modules are subject to change and this list does not guarantee that a specific module will be available

IBMS Accredited Degrees

If you want to work as a biomedical scientist in the NHS you need to be registered with the Health and Care Professions Council (HCPC). One of the best ways to become HCPC registered is to complete an Institute of Biomedical Science (IBMS) accredited degree with a clinical placement in the NHS. The IBMS is the professional body for those who work within the field of biomedical science and an IBMS accredited degree meets the requirements for HCPC registration. Students on the IBMS-accredited Biomedical Science degree (B990) are eligible to apply for highly competitive placements within the NHS. If successful, you will begin your placement following completion of your second year of studies, finishing at the end of August the following year. You will complete a portfolio during your placement year which is examined by the IBMS. Upon successful examination of your portfolio and successfully completing your degree, you will be awarded an IBMS Certificate of Competence and will be able to apply to the HCPC for registration as a Biomedical Scientist.

> The dedicated staff are always willing to assist and support students. The high quality teaching combined engaging content with hands-on research to help us understand complex processes in biomedicine. I liked it that I was able to pick modules to suit my interests and develop my skills to help achieve my career goals."
>
> Juliet Butler,
> MSci Biomedicine

Biomedicine

BSc and MSci Hons UCAS Codes: C701 & C703
BSc and MSci Hons (Study Abroad) UCAS Codes: C704 & C705

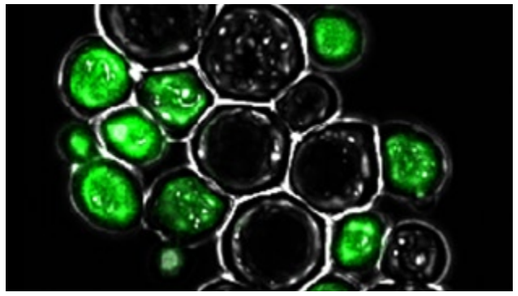
Study Abroad

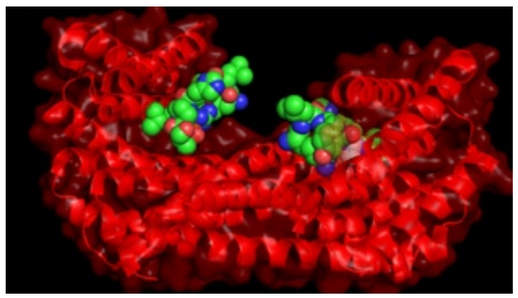
Future Careers

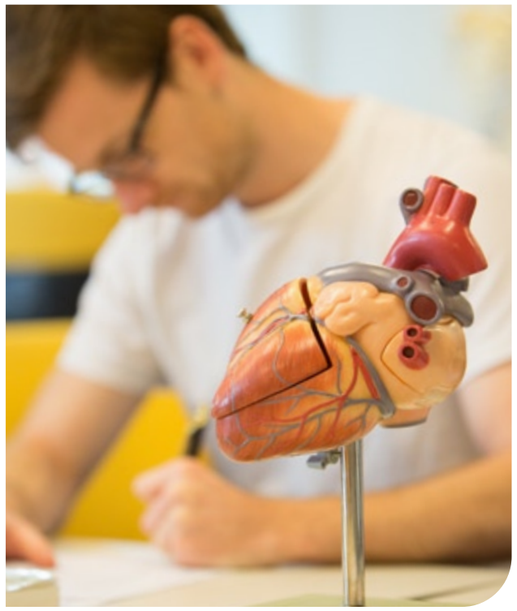
Academic, Industrial or Medical Research, Laboratory Technician, Healthcare Assistant, Pharmaceutical or Food Industry, Teaching, Grad Scheme Management

The Biomedicine programmes at Lancaster offer more flexibility than our IBMS-accredited Biomedical Science degree (B990). They allow you to tailor the second and third years of your degree to your personal interests within the field and with the additional option to study abroad in your second year and/or of completing a four-year integrated Masters. The degrees are aimed at students with a broad interest in human life processes and disease and consider topics in biochemistry, cell biology, genetics, and physiology from the perspective of the molecules and mechanisms fundamental to life processes and how these are disrupted by disease.

In your first year, you'll take 15 compulsory modules, including an Introduction to Biomedical Sciences, Infection & Immunity and Protein Biochemistry. These modules ensure that you receive a thorough grounding in all general areas of biomedicine. In the second year, you'll take four theory modules in core areas within biomedicine and have the flexibility to choose an additional four techniques modules covering key practical disciplines. You will also complete an independent research project on a contemporary topic in biomedicine. Students on the Study Abroad degree spend their second year at a university in North America or Australasia. In the third year, you'll take two compulsory modules but, again, you also have the flexibility to tailor your degree to your own interests through the choice of your remaining 6 modules. There are additional opportunities to gain research experience on the MSci degree, during which you will select from a wide variety of taught Masters-level modules and you will undertake an extended research project.







Degree structure

Year 1

Core modules
Anatomy & Tissue Structure
Biomedical Science in Practice
Biomedicine & Society
Biotechnology
Cell Structure & Function
Diagnosis in Biomedical Science
Experimental Design & Data Analysis
Genetics
Hormones & Development
Human Physiology
Impact of Microbes
Infection & Immunity
Molecules of Life
Protein Biochemistry
Skills in Biomedical and Life Sciences

Year 2

Core modules
Biochemistry
Cell Biology
Employability Skills
Genetics
Medical Microbiology
Research Project

Example optional modules
Biochemical Techniques
Cell Biology Techniques
Cellular Pathology
Clinical Biochemistry
DNA Technology
Haematology & Transfusion Science
Microbiological Techniques
Practical Physiology

Year 3

Core modules
Cancer
Medical Genetics

Example optional modules
Biology of Ageing
Cell Signalling 1
Cell Signalling, Transport & Disease

Year 3

Example optional modules (continued)
Clinical Immunology
Environmental Pathogens
Ethics in Biomedicine
Genetics
Innovation in the Biosciences
Molecular & Biochemical Parasitology
Neurobiology
Pathobiology
Protein Biochemistry
Tropical Diseases

Year 4

Core Modules
Extended Research Project

Example optional modules, four selections
Bioinformatics
Biomedicine in Context
Diseases of the Brain
Drug Development (from concept to clinic)
Immunology
Microbes & Disease
Models of Disease
Molecular Basis of Cancer

Modules are subject to change and this list does not guarantee that a specific module will be available

> The department makes you their priority and the teaching style is second to none: the ratio of lectures to workshops is perfect and allows both a hands-on and independent approach to learning. The exciting practicals were always the best for me as it brought science to a wholly enjoyable level."
>
> Levina Masterson,
> BSc Biological Sciences
> with Biomedicine

Biological Sciences with Biomedicine

BSc Hons UCAS Code: C1B9

Biomedicine is at the heart of much of the exciting bioscience research worldwide. The Biological Sciences with Biomedicine degree at Lancaster is broad but with a strong bias towards human and disease-related topics. The degree is aimed at students who are interested in studying topics from across the whole breadth of the biosciences but who have a specific interest in the biological mechanisms underlying the maintenance of human health or disease conditions. You will receive a broad grounding in bioscience subjects whilst maintaining an emphasis on specific biomedical topics. The degree covers key areas in biomedicine and also other subjects such as Cell Structure and Function, Evolution, Genetics, and Protein Biochemistry all of which are at the heart of modern biological and biomedical research. You'll also receive in-depth training in the key techniques associated with modern biological and biomedical practices by taking a series of techniques modules, some of which are taught by staff from a local hospital.

In your first year, you'll study core biomedical science subjects such as Genetics and Biomedicine and Society. You'll also choose from other bioscience modules, such as Evolutionary Biology, and Aquatic Ecology. This diversity allows you to specialise in more biomedical subjects in later years or to transfer to a completely different field in the biosciences. In the second year, you'll take core theory and techniques modules and choose an additional two bioscience techniques modules. You will also complete an independent research project on a contemporary topic in biological science, biomedicine, or an interdisciplinary topic. In your third year, you can tailor your degree to your own interests by selecting from a diverse range of subjects including Cell Signalling, Environmental Pathogens, Tropical Diseases, and Immunology.

Degree structure

Year 1

Core modules
Anatomy & Tissue Structure
Biomedicine & Society
Biotechnology
Cell Structure & Function
Experimental Design & Data Analysis
Genetics
Hormones & Development
Human Physiology
Impact of Microbes
Infection & Immunity
Molecules of Life
Protein Biochemistry
Skills in Biomedical & Life Sciences

Example optional modules, two selections
Aquatic Ecology, Global Change Biology, Biodiversity & Conservation, Evolutionary Biology, Zoology

Year 2

Core modules
Biochemistry
Cell Biology
Cell Biology Techniques
Employability Skills
Genetics
Medical Microbiology
Microbiological Techniques
Research Project

Example optional modules
Biochemical Techniques
Clinical Biochemistry
DNA Technology
Hematology & Transfusion Science

Year 3

Core modules
Ethics in Biomedicine
Innovation in the Biosciences

Example optional modules
Biology of Ageing
Cancer
Cell Cycle & Stem Cells
Cell Signalling 1
Cell Signalling, Transport & Disease
Clinical Immunology
Conservation in Practice
Environmental Pathogens
Genetics
Issues in Conservation Biology
Medical Genetics
Molecular & Biochemical Parasitology
Neurobiology
Protein Biochemistry
Tropical Diseases

Modules are subject to change and this list does not guarantee that a specific module will be available

> My Biology with Psychology degree has given me the opportunity to study in two different fields, choosing the parts of each which are of particular interest. I received a solid grounding in the basic principles and have been taught about cutting-edge research. My research project was another highlight, giving me valuable experience of working alongside experts in the field."
>
> Katy Barnes,
> BSc Biology with Psychology

Biology with Psychology

BSc Hons UCAS Code: C1C8

The Biology with Psychology degree at Lancaster is taught jointly with staff from the Department of Psychology. The degree is aimed at students wishing to develop an understanding of the influences that govern human behaviour, underpinned by knowledge of the biology of the system. You are able to choose the areas of biology that interest you the most and link these studies to a progressive understanding of developmental, physiological and cognitive psychology. As well as in-depth knowledge of biology and psychology, the degree provides you with an impressive mixture of scientific, analytical, communication and interpersonal skills that provides you with an excellent basis for future employment.

In the first year you will take three units of study, one of which will be in Psychology and a further two from those on offer in the biosciences. In the second and third years, modules are designed to develop more specialist knowledge and to allow you to pursue your particular areas of interest. You will also take bioscience techniques modules, and in the final term of the second year, begin a dissertation module. This involves an independent research project on a topic from within the biosciences. In the third year, you will take up to three psychology modules with your remaining modules selected from the biosciences. The core modules available on the degree principally focus on understanding the biology that underpins human behaviour and aims to provide an opportunity to understand psychology in greater depth.

Degree structure

Year 1
Unit 1: Understanding Psychology*
Units 2&3: Biology

Core modules
Cell Structure & Function
Evolutionary Biology
Experimental Design & Data Analysis
Genetics
Human Physiology
Infection & Immunity
Skills in Biomedical & Life Sciences

Example optional modules
Biomedical Science in Practice
Biomedicine & Society
Biotechnology
Diagnosis in Biomedical Science
Hormones & Development
Protein Biochemistry

Year 2

Core modules
Brain & Behaviour
Cell Biology
Cell Biology Techniques
Cognitive Psychology
Developmental Psychology
Employability Skills
Practical Physiology
Research Project

Optional modules, one selection
Genetics
Medical Microbiology

Year 3

Core modules
Advanced Issues in Neuroscience
Animal Behaviour
Neurobiology
Prozac Nation: Human Psychopharmacology

Example optional modules
Biology of Ageing
Cancer
Cell Cycle and Stem Cells
Cell Signalling
Clinical Immunology
Ethics in Biomedicine
Innovation in the Biosciences
Pathobiology
The Developing Mind
The Psychology of Attention: from the laboratory to everyday behaviour
Tropical Diseases

*An overview of the core psychological areas of Cognitive, Developmental, Social & Neuropsychology

Modules are subject to change and this list does not guarantee that a specific module will be available

> My Biological Sciences degree gave me the chance to study abroad in Canada and started me on my ongoing life adventure involving capturing Caiman (for research only), studying Macaws of the Peruvian Amazon, and ringing Tengmalm owls in Norway."
>
> Suze Lewis,
> BSc Biological Sciences
> (Study Abroad)

> I really enjoyed my Biological Sciences degree. The wide choice of subject modules on the degree enabled me to formulate my preferences in the first year and to specialise in my favourite areas in subsequent years. I gained invaluable practical skills experience which has enabled me to go on to study Alzheimer's disease."
>
> Mallory Gough,
> BSc Biological Sciences

Biological Sciences

BSc and MSci Hons UCAS Codes: C100 & 1M66
BSc Hons (Study Abroad) UCAS Codes: C102

Study Abroad

Future Careers

Research Scientist, Biotechnologist, Microbiologist, Molecular Geneticist, Forensic Scientist, Pharmaceutical Scientist, Food Technologist, Material Technologist

The Biological Sciences programmes are our most flexible Bioscience degrees and allow you to study the areas of life science that interest you most. You will learn about the principles and contemporary issues in biology, receive practical training in the key techniques in modern biological research and choose from a wide choice of modules in topics including biochemistry, molecular biology and physiology of cells and tissues through to global change biology, evolution, biodiversity conservation and sustainable resource management.

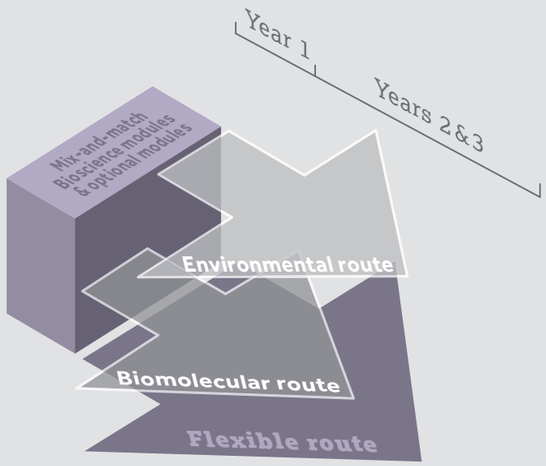
In the first year, you can choose to follow linked themes of modules throughout the year, or mix-and-match to suit your own interests. You can also take up to one third of your first year modules in a subject outside of biology depending on timetabling and other module choices, so if you want to study another science, computing, business, politics, art or philosophy – you can.

You begin to specialise more in the second year, choosing from a variety of theory and practical modules, including a compulsory Employability Skills module. You will also complete an independent research project on a topic selected from across the full breadth of the biosciences. Students on the Study Abroad degree spend their second year at a university in North America or Australasia.

In the third year, you select eight modules from a wide variety of specialist modules, including a compulsory module – Innovation in the Biosciences. Students can gain additional research experience on the MSci degree, during which you are able to select from a wide variety of taught Masters-level modules in the fourth year, and you will undertake an extended research project.

Biological Sciences Programme Routes

Our Biological Sciences programmes allow you to study topics from across the whole breadth of the biosciences. You can take a flexible route through the modules available in Years 2 and 3 or choose modules in a specific area of bioscience, for example, taking either an environmental or a biomolecular route through your degree.



Degree structure

Year 1

Core modules:
Cell Structure & Function
Evolutionary Biology
Genetics
Molecules of Life
Skills in Biomedical & Life Sciences
Zoology

Plus at least four modules chosen from:
Aquatic Ecology
Biodiversity & Conservation
Biomedicine and Society
Biotechnology
Developmental Biology
Diagnosis in Biomedical Science
Global Change Biology
Hormones & Development
Human Physiology
Impact of Microbes
Infection & Immunity
Introduction to Epidemiology
Marine & Estuarine Biology
Protein Biochemistry

Optional modules
Depending on timetabling and other module choices, you may be able to select up to five modules in any subject

Year 2

Core modules
Employability Skills
Research Project

Optional modules:
Biochemical Techniques
Cell Biology Techniques
DNA Technology
Environmental Microbiology
Experimental Design & Analysis
Microbiological Techniques
Practical Physiology
Research Design & Delivery
Vertebrate Biology

At least one selection
Biochemistry
Cell Biology
Genetics
Medical Microbiology

At least one selection
Environmental Physiology
Evolution
Populations to Ecosystems
Principles of Biodiversity Conservation
Vertebrate Biology

Year 3

Core modules
Innovation in the Biosciences

Optional modules: seven selections
Animal Behaviour
Biology of Ageing
Cancer
Cell Cycle & Stem Cells
Cell Signalling 1
Cell Signalling, Transport & Disease
Clinical Immunology
Conservation in Practice
Environmental Pathogens
Environmental Plant Biology
Ethics in Biomedicine
Frontiers in Ecology & Evolution
Genetics
Global Change Biology: Challenges & Solutions
Host-Parasite interactions
Issues in Conservation Biology
Medical Genetics
Molecular & Biochemical Parasitology
Neurobiology
Protein Biochemistry
Sustainable Agriculture
Tropical Diseases

Year 4

Core module
Extended Research Project

Optional modules
Four masters-level modules selected from a wide range available

Modules are subject to change and this list does not guarantee that a specific module will be available

Biology

BSc and MSci Hons UCAS Codes: C101 & C109
BSc Hons (Study Abroad) UCAS Code: C103

Study Abroad

Placement Opportunity

Future Careers

Research Scientist, Environmental Microbiologist, Nature Conservation Officer, Higher Education Lecturer, Secondary School Teacher, Soil Scientist, Crop Scientist

Field Courses

Our Biology programmes focus on studying how animals and plants function at an organism level. You will learn how they interact with each other and their environment and how they are affected by the key global environmental challenges of the 21st century and will receive a thorough grounding in biological principles and practical techniques, following which you are able to specialise through your choice of optional modules. Lectures, practicals and workshops are complemented by field excursions and residential field courses, both in the UK and overseas (see page 4).

The degree begins with an integrated first year, which combines modules in genetics, biotechnology and cell biology with modules in ecology, conservation biology, and global change biology including an optional field course in southern Spain. In the second year, you can start to specialise by choosing in-depth modules in the areas of organismal biology that most interest you including a non-residential field biology course. In addition, you take compulsory practical skills modules in Experimental Design and Analysis and Research Design and Delivery that prepare you for your research project. Students on the Study Abroad degree spend their second year at a university in North America or Australasia. You can specialise further if you wish in year three. Third year modules include optional residential field courses in Scotland and Kenya, and you will complete an independent research project – project choices include both laboratory-based projects and field-based research taking advantage of Lancaster's location close to a diverse range of terrestrial and aquatic habitats such as the Forest of Bowland, Morecambe Bay and the Lake District and Yorkshire Dales National Parks. There are additional opportunities to gain research experience on the MSci degree, during which you are able to select from a wide variety of taught Masters-level modules in the fourth year, and you will undertake an extended research project.

Degree structure

Year 1

Core modules:
Aquatic Ecology
Biodiversity & Conservation
Biotechnology
Cell Structure & Function
Evolutionary Biology
Genetics
Global Change Biology
Global Environmental Challenges (double module)
Impact of Microbes
Molecules of Life
Skills in Biomedical & Life Sciences
Zoology

Optional modules: two modules from
Developmental Biology
Marine & Estuarine Biology
Spanish Field Course

Year 2

Core modules
Experimental Design and Analysis
Research Design and Delivery

Optional modules: five modules from
Cell Biology
Environmental Microbiology
Environmental Physiology
Evolution
Field Biology
Genetics
Populations to Ecosystems
Principles of Biodiversity Conservation
Vertebrate Biology

Year 3

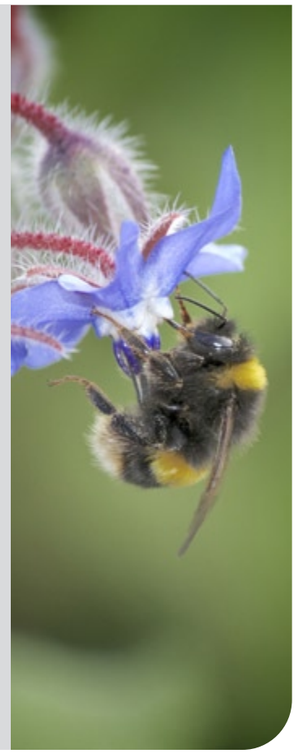
Core modules
Research project

Optional modules: seven modules from
Animal Behaviour
Biology of Ageing
Cell Cycle and Stem Cells
Cell Signalling 1
Conservation in Practice
Environmental Pathogens
Environmental Plant Biology
Frontiers in Ecology and Evolution
Genetics
Global Change Biology: Challenges and Solutions
Host-Parasite Interactions
Issues in Conservation Biology
Neurobiology
Scotland Field Course
Sustainable Agriculture
Tropical Biology and Conservation (Kenya field course)
Tropical Diseases

Year 4

Core module
Extended research project

Optional modules
Four masters-level modules selected from a wide range available



Modules are subject to change and this list does not guarantee that a specific module will be available

Ecology and Conservation

BSc and MSci Hons (Professional Experience) UCAS Codes: C180 & 0X48
BSc Hons (Study Abroad) UCAS Codes: C182

Study Abroad | Field Courses | Placement Opportunity

We are a national leader in both the science of the environment and its application in conservation, landscape management and environmental policy. Our unique location provides the perfect setting in which to study ecology, and there are an exceptional number and variety of sites of high conservation interest within this region.

From learning about how organisms interact with each other and their environment to how these processes are affected by human activities, our degrees provide you with a thorough grounding in ecological theory and practice. You will also gain a deep understanding of how these principles relate to the conservation of species and the ecosystems in which they live.

Our diverse and flexible programmes allow you to select specialist topics to match your interests, focusing on ecology, conservation or a mixture of the two. Because of the breadth of modules available in the Lancaster Environment Centre (LEC), you can also expand your knowledge by selecting optional modules in environmental and Earth sciences and geography, many of which are an excellent complement to the study of ecology and conservation.

The programme is taught by staff in LEC as well as external lecturers from organisations such as the Environment Agency, Natural England, RSPB and the Centre for Ecology and Hydrology. Learning takes place in our state-of-the-art teaching facilities and is complemented by field excursions and residential field courses in the UK, Spain, Brazil and Kenya.

Your first year will begin with a rounded introduction to ecology and conservation biology. You will participate in the field course in southern Spain, and you will study a series of modules in ecology, evolutionary biology and conservation. In the second year you will study ecology, conservation biology and practical skills modules, whilst also choosing a number of optional modules that match your interests, such as Evolution or Environmental Physiology. Students on our Study Abroad programme spend their second year taking similar modules at a University in North America or Australasia. In your third year, you can choose from a broad range of optional modules such as Animal Behaviour, Conservation in Practice and Frontiers in Ecology and Evolution; you will also carry out an independent research project.

All of our research projects are supervised by academic staff, but you also have the option of applying to undertake your project whilst on a work placement with a commercial partner or external organisation in in a related sector. This opportunity is continued in our MSci degree, in which the fourth year includes an extended project and a work placement with an external partner together with Masters level modules. There are also opportunities to carry out the third year project at a European University via the Erasmus scheme.

> “I absolutely loved the field trips. I got to go to some great places and see some amazing wildlife with academics who really knew their stuff. I learnt a lot and had a huge amount of fun at the same time.”
>
> Lydia Atkinson,
> BSc Ecology and Conservation

Future Careers CV

Ecological Consultant, Reserve Manager, Government/NGO Scientist
Conservation Officer, Research Ecologist

Degree structure

Year 1

Core modules
Aquatic Ecology
Biodiversity and Conservation
Environmental Processes and Systems
Evolutionary Biology
Global Change Biology
Global Environmental Challenges
Spanish-Doñana Field Course
Zoology

Optional modules
Up to five further optional modules in another subject

Year 2

Core modules
Experimental Design and Analysis
Field Biology
Populations to Ecosystems
Principles of Biodiversity Conservation
Research Design and Delivery

Optional modules: 2 modules from
Environmental Microbiology
Environmental Physiology
Evolution
Genetics
Interacting Landscapes: Biogeography and Geomorphology
Introduction to Eco-Innovation
Soil Science
Vertebrate Biology

Year 3

Core modules
Dissertation OR Dissertation With External Partner *

Optional modules: seven modules from
Animal Behaviour
Climate and Society

Year 3 (continued)
Conservation and Sustainable Development in the Brazilian Amazon
Conservation in Practice
Environment, Politics and Society in Amazonia
Environmental Plant Biology
Environmental Remote Sensing and Image Processing
Frontiers in Ecology and Evolution
Global Change Biology: Challenges and Solutions
Host-Parasite Interactions
Issues in Conservation Biology
Lakes, Rivers and Estuaries
Quaternary Environmental Change
Scotland Field Course
Sustainable Agriculture
Tropical Biology and Conservation
Water Resources Management

Year 4

Core modules
Extended research project

Optional modules: four modules from
Behaviour of Pollutants in the Environment
Contaminated Land and Remediation
Crop Protection
Data Assimilation and Integration
Environmental Aspects of Renewable Energy
Food Security, Agriculture and Climate Change
Lake Ecology
Pollution Microbiology
Sustainable Soil Management
Wildlife Monitoring Techniques

* Dissertation with External Partner available to C180 and 0X48 students only

Modules are subject to change and this list does not guarantee that a specific module will be available

> “Universities should... ensure that students have the opportunity to develop enterprise skills.”
>
> Prof Sir Tim Wilson DL, ‘A review of Business-University Collaboration’

Bioscience with Entrepreneurship

BSc Hons UCAS Code: C1N2

Placement Opportunity

Future Careers

Teacher, Forensic Scientist, Environmental Microbiologist
Pharmaceutical Industry, Food Industry
Academic, Industrial and Biomedical Research

The Bioscience with Entrepreneurship degree at Lancaster is taught jointly with staff from the Department of Entrepreneurship, Strategy and Innovation. The degree is aimed at students with an interest in a range of bioscience topics but who are also looking to understand the challenges of entrepreneurship and innovation. No prior experience of business is required for entry to this degree scheme, just lots of enthusiasm. The degree allows you to study a broad range of bioscience and entrepreneurship modules, so you can tailor this degree to suit your own interests and career aspirations.

In the first year, you will take compulsory bioscience modules and an introductory entrepreneurship module that will challenge your assumptions about entrepreneurship as well as providing an insight into the challenges of new ideas and innovations. You are able to complement these by choosing additional modules from a range of bioscience topics including Genetics, Aquatic Ecology, Protein Biochemistry, Biodiversity and Conservation, Anatomy and Developmental Biology. In the second year, you will take two compulsory entrepreneurship modules (Selling for Entrepreneurs and Product and Service Innovation) and begin to specialise by choosing modules from both bioscience and entrepreneurship disciplines that suit your own interests. In the third year, you will specialise further by choosing Bioscience and Entrepreneurship modules from the wide range of topics on offer. You will have an opportunity to collaborate with our “Entrepreneurs in Residence” and find out more about the challenges they have faced throughout their careers.

> “All university students should have access to enterprise and entrepreneurship.”
>
> Lord Young, ‘Enterprise for All: The Relevance of Enterprise in Education’

> “Enterprise and business awareness should be critical components of any HE course.”
>
> Prof David Hornby, External Examiner, Biomedical and Life Sciences

Bioscience with Entrepreneurship Research Projects

You will undertake an independent Bioscience research project where you will carry out your own research under the supervision of one of our world-leading scientists. You will also have the option to choose an Entrepreneurial Challenge project in the third year of your degree. This project provides a number of options that can be tailored to your future career and business aspirations. For example, if you aspire to setting up your own business, you can engage with an entrepreneurial project where you will have the opportunity to pitch your idea to a number of potential investors.

Degree structure

Year 1

Core modules
Entrepreneurship – key debates and concepts
Experimental Design and Data Analysis
Skills in Biomedical and Life Sciences

Optional modules: examples of choices
Anatomy & Tissue Structure
Aquatic Ecology
Biodiversity and Conservation
Biomedical Science in Practice
Biomedicine & Society
Biotechnology
Cell Structure & Function
Developmental Biology
Evolutionary Biology
Genetics
Global Change Biology
Hormones and Development
Human Physiology
Impact of Microbes
Infection & Immunity
Molecules of Life
Protein Biochemistry
Zoology

Year 2

Core modules
Selling for Entrepreneurs
Product and Service Innovation
Entrepreneurial Mindset OR Business Start-up
Bioscience Research Project

Optional modules: examples of choices
Biochemical Techniques
Biochemistry
Cell Biology
Cell Biology Techniques
Data Collection & Analysis
DNA Technology
Environmental Physiology
Evolution
Genetics
Medical Microbiology
Microbiological Techniques
Populations to Ecosystems
Practical Physiology
Principles of Biodiversity Conservation

Year 3

Optional modules: examples of choices
Animal Behaviour
Essentials of Strategic Management
Biology of Ageing
Cancer
Gender and Entrepreneurship in a Global Context
Cell Cycle & Stem Cells
Cell Signalling 1
Cell Signalling, Transport & Disease
Building and Leading Entrepreneurial Teams
Ecophysiology of Host-Pest Interactions
Entrepreneurial Challenge Project
Environmental Plant Biology
Ethics in Biomedicine
Frontiers in Ecology & Evolution
Genetics
Business Model Innovation
Immunology
Issues in Conservation Biology
Medical Genetics
Molecular & Biochemical Parasitology
Networking for Entrepreneurship
Neurobiology
Protein Biochemistry
Sustainable Agriculture
Tropical Diseases

Modules are subject to change and this list does not guarantee that a specific module will be available

What Do Our Graduates Think?

"Studying Ecology at Lancaster for me was an enriching, empowering and fascinating experience. The staff are fantastic and provide top quality lectures and practicals and are always available to talk something through. The field trips were particularly good, offering the perfect opportunity to get to know your peers and the staff, at the same time seeing some beautiful places and gaining a real insight into ecology. For my dissertation, I investigated the effect of artificial light on Daubenton's bats. As a result of the experience acquired, I am now working as an ecological consultant."

Kevin Heywood
BSc Ecology

"I like the human aspect of behaviour and understanding the biological mechanisms of why people behave in a certain way, which is why I chose to study Biology with Psychology. I picked Lancaster because all you need is on one campus. The academic advisors in the department are very supportive for issues relating to the course and for giving specific advice on career options, and the Careers website is also really helpful. My advice to any students coming to the University would be to make sure you become part of your College life - obviously, do well academically, but try to have a nice balance!"

Ellie Smith
BSc Biology with Psychology

"I absolutely loved my time at Lancaster. From my very first visit to the campus, I knew that it was definitely going to be the place for me, and I've been proven right with a fantastic three years. The staff on my Biological Sciences degree have been so helpful at every step of the way and have all been fantastic. Possibly the best thing I've found about my lecturers is how their enthusiasm for their subjects is infectious and inspires you to want to learn more! I've made friends with people from all around the world, having met them through my course or College and through societies on campus. I know I will definitely be keeping in touch with them after we all graduate!"

Liam Fitzpatrick
BSc Biological Sciences

"I chose Lancaster because I wanted a top university with excellent accommodation and facilities. The University has exceeded my expectations and I have really enjoyed the collegiate system. My Biological Sciences degree has allowed me to be involved in the fascinating research that the lecturers carry out and has equipped me for a range of careers. I have really enjoyed every aspect of university life and the course - my favourite part of my time at Lancaster has been the endless opportunities that are available, which have enabled me to build up a significant range of experience in three years."

Emma Huck
BSc Biological Sciences

"From my very first visit to Lancaster I knew it was the perfect choice for me to study Biomedical Science; its reputation and the campus were two things that attracted me most. Lancaster definitely offered the home from home feeling and I settled in extremely quickly. The city has everything you need and a nightlife that won't disappoint. The department is second to none and provides excellent support and encouragement from the very first day. The regular practical sessions expand upon the material in lectures and develop skills that are essential for future employment. I also completed a dissertation which enabled me to develop my understanding of key techniques that I am now able to transfer into the working environment."

Claire Reid
BSc Biomedical Science

"Lancaster stood out to me because of its reputation for world-class research. Which I thought would contribute to the success of my degree. Not surprisingly, the dissertation I completed in my final year involved the latest advances made in Alzheimer's disease. The lecturers were the best in their field and their passion inspired me to switch from a three-year Biomedicine degree to the four-year MSci. Outside of studying, the vibrant campus with its numerous clubs and societies gave me the complete student experience. The University also encouraged me to think about what to do after graduation and provided a lot of support in preparing me for the "real world". All in all, I really enjoyed my time at Lancaster. I wish I could go back to my first year and do it all again!"

Ciny Edathanal
MSci Biomedicine

"For me, choosing Lancaster to study Biochemistry came down to two things: the University's reputation, and its location, accommodation and overall feel. Lancaster surpassed all of my expectations academically and otherwise and I've enjoyed some incredibly valuable experiences that I wouldn't have had at any other university. The very best thing about the teaching at Lancaster is the quality of the material. I've often found myself in a lecture with a leading figure in the field talking about research published by them only months before. My degree has been particularly well-suited to my career goal to become a clinical biochemist in the NHS, especially the integrated employability module which helped me explore this sector."

Jonathan Longden
BSc Biochemistry

"I liked the idea of a campus university, where everything was on the same site, but also the city wasn't far away; it's safe to say I have no regrets coming to Lancaster! Having the opportunity to complete a dissertation in my final year was definitely a highlight of my Biochemistry with Genetics degree allowing me to put the practical skills I had learned into practice and gave me an experience of research alongside other members of the University. The helpfulness of the lecturers, combined with the choice of modules, undoubtedly contributed to me successfully gaining my degree and has helped me to choose a career doing genetic research. Lancaster has definitely left me with some great memories!"

Jonathan Whitchurch
BSc Biochemistry with Genetics

Admissions Information

Three Year Degrees

BSc Biochemistry (UCAS code: C700)
BSc Biochemistry with Genetics (UCAS code: C7C4)
BSc Biochemistry with Biomedicine (UCAS code: BC79)
BSc Biomedical Science (UCAS code: B990)
BSc Biomedicine (UCAS code: B701)
BSc Biological Sciences with Biomedicine (UCAS code: C1B9)
BSc Biological Sciences (UCAS code: C100)
BSc Biology (UCAS code: C101)
BSc Ecology and Conservation (UCAS code: C180)
BSc Biology with Psychology (UCAS code: C1C8)
BSc Bioscience with Entrepreneurship (UCAS code: C1N2)

- A-level grades **AAB** (C180: A-level grades **ABB**)
- Scottish higher grades **ABBBB** (C180: Scottish higher grades **BBBBB**)
- International Baccalaureate **35 pts** with **16 pts** from best 3 HL subjects (C180: International Baccalaureate **32 pts**)
- BTEC: **DDD** (C180: BTEC **DDM**)

Three Year Study Abroad Degrees

BSc Biochemistry (Study Abroad) (UCAS code: C702)
BSc Biomedicine (Study Abroad) (UCAS code: C704)
BSc Biological Sciences (Study Abroad) (UCAS code: C102)
BSc Biology (Study Abroad) (UCAS code: C103)
BSc Ecology and Conservation (Study Abroad) (UCAS code: C182)

- A-level grades **AAA** (C182: A-level grades **AAB**)
- Scottish higher grades **AAABB** (C182: Scottish higher grades **ABBBB**)
- International Baccalaureate **36 pts** with **16 pts** from best 3 HL subjects (C182: International Baccalaureate **35 pts**)
- BTEC: **DDD**

Four Year Degrees

MSci Biomedicine (UCAS code: C703)
MSci Biomedicine (Study Abroad) (UCAS code: C705)
MSci Biochemistry (UCAS code: C706)
MSci Biological Sciences (UCAS code: 1M66)
MSci Biology (UCAS code: C109)
MSci Ecology and Conservation (Professional Experience) (UCAS code 0X48)

- A-level grades **AAA** (0X48: A-level grades **AAB**)
- Scottish higher grades **AAABB** (0X48: Scottish higher grades **ABBBB**)
- International Baccalaureate **36 pts** with **16 pts** from best 3 HL subjects (0X48: International Baccalaureate **35 pts**)
- BTEC **DDD**

For all degree programmes we require a minimum of 2 science subjects from the 3 A-levels/HLs studied. For our Biomedical Science (B990) and Biomedicine programmes (C701, C703, C704, C705) the 2 science A-levels/HLs are preferably from Biology, Chemistry, Maths and Physics. For the Biochemistry degrees we require A-level Chemistry and for the Biomedical Science degree we require A-level Biology. We will look for sufficient subject content in your BTEC; please check with the departmental Admissions Tutors or the University Admissions Office for guidance on the eligibility of your course. We also require GCSE passes in English at grade **C** and Mathematics at grade **B**.

For information on subject requirements within other qualifications, please do not hesitate to contact us.

Fees and Financial Support

Applications

Applications to all of our undergraduate degree programmes must be made through the Universities and Colleges Admissions Service (UCAS), using the online service via: **www.ucas.ac.uk**

Mature and Overseas Applicants

We welcome applications from mature or overseas students or those offering relevant subjects such as Access Diplomas or other awards. Your application will be considered individually on its merits and in relation to the University's guidance on equivalence to A-levels.

Tuition Fees and Financial Support

For all undergraduate degree programmes at Lancaster, the tuition fee for 2017 entry is £9,250 per year for students from the UK and the European Union (different rates apply to Islands and Overseas students). Please see our University web pages for further information on the financial packages available to you: **www.lancaster.ac.uk/study/undergraduate/fees-and-funding**

Bursaries & Scholarships

Our priority is to support every student to make the most of their life and education. We have a package of bursaries, based upon household income, and scholarships, based upon academic performance at A-level, to support students during their time at university.

For 2018 entry, our Excellence Scholarship will form part of the Unconditional Offer Scheme for full-time UK applicants with outstanding academic profiles.

For up to date details of tuition fees, financial support and further guidance please visit our website:

www.lancaster.ac.uk/study/undergraduate/fees-and-funding

At the time of printing, 2017/18 bursaries, scholarships and access agreements remain to be confirmed and may be subject to change.

Visiting Us

Open Days and Campus Tours

Open Days take place in July and September for anyone thinking of applying to Lancaster. You will experience our vibrant campus and have the freedom to explore our academic departments, Colleges and accommodation. You will also have the opportunity to visit our facilities, where you can chat with staff and current students about studying Biosciences at Lancaster.

In addition to Open Days, we also host regular Campus Tour Extra events (held on Wednesday afternoons throughout the year). These are a great opportunity to find out about studying at Lancaster, tour our 560-acre campus and chat with staff and students to find out more about our degrees.

You can book onto Open Days and Campus Tour Extra events at: **www.lancaster.ac.uk/visitus**

Applicant Visit Days

If you are offered a place on one of our degree schemes, you'll be invited to visit us again in February or March. You'll have the opportunity to tour our accommodation, take part in interactive activities and spend the day with Biosciences staff and students. Applicant Visit Days are lively and informative events, designed to give you a taste of what it is like to be a student here. Parents are also welcome to attend these events too.

Visiting Us

Lancaster is very well served by road, rail and air networks and is nearby to major cities such as Manchester and Liverpool. More information about visiting the University can be found at: **www.lancaster.ac.uk/contact-and-getting-here**

Approximate Travel Times (By Train)

Lancaster — London	2.5 hours
Lancaster — Liverpool	1.5 hours
Lancaster — Manchester	1 hour
Lancaster — Edinburgh	2.5 hours
Lancaster — Glasgow	2.5 hours

Biosciences | Lancaster University

www.lancaster.ac.uk/study