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 and is ranked 5th in the UK for Biological Sciences*. The University is also one of the best in the UK and is ranked 6th in the UK according to The Times and Sunday Times 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.

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 and is ranked 5th in the UK for Biological Sciences*. The University is also one of the best in the UK and is ranked 6th in the UK according to The Times and Sunday Times 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

We are joint 5th in the UK for graduate prospects for Biological Sciences (Complete University Guide 2019).

World-leading Research

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

---

*The Times and Sunday Times Guide 2018
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 £4 million 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.

Be Taught By The Best

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.

Be Taught By The Best

Bioscience Research at Lancaster

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!

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.

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.

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.
Away From Campus

Our Field Courses

Upland Ecology, Scotland
The ecology field course to Mull provides a chance to experience some amazing landscapes, from mountains to coasts, and to learn about the ecology of key plant and animal species. Each day you’ll visit a variety of sites including mountains, rocky coastlines, fertile shell-sand beaches and heather moorland, with the aim of understanding the landscape, the place of key species within it, and conservation and management issues. You’ll also get to know the spectacular flora of the region and you’ll see a broad range of animal species such as red deer, white-tailed eagles, seals, mountain hares, hen harrier and a variety of seabirds.

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.

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.

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. It 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, 2018, this figure remains to be confirmed and may be subject to change.
98% of our 2016 graduates were in employment or undertaking further study within six months.

A biosciences degree from Lancaster provides you with a wide range of transferable skills which you will find to be valuable in 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
- CEO of BiVictriX Therapeutics
- Clinical Trials Assistant (CTA) with MAC Clinical Research
- 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.

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 career 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
Our Bioscience Degree Programmes

Three-Year Degrees
- BSc Biochemistry (UCAS code: C700)
- BSc Biochemistry with Genetics (UCAS code: C7C4)
- BSc Biochemistry with Biomedicine (UCAS code: B7C9)
- BSc Biomedical Sciences (UCAS code: B900)
- BSc Biomedicine (UCAS code: B701)
- BSc Biological Sciences with Biomedicine (UCAS code: C189)
- 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 Biomedical 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
- Four-Year Degrees with a Placement Year (continued)
  - BSc Biomedicine (UCAS code: C708)
  - BSc Biological Sciences with Biomedicine (UCAS code: C1B8)
  - BSc Biological Sciences (UCAS code: C1C4)
  - BSc Biology with Psychology (UCAS code: C1C9)
  - BSc Bioscience with Entrepreneurship (UCAS code: C1N3)

Four-Year Degrees with a Placement Year
- You will spend your third year on an industrial placement, which may be with a scientific or non-scientific organisation, before returning to Lancaster for your fourth year. You will take an additional module in your first and second years aimed at preparing you for professional life and you will be supported by professional careers staff in preparing you placement application. You will submit monthly reflective pieces during your placement and when you return in your fourth year you will also complete a portfolio reflecting on your learning. Although not all students will be successful in securing these nationally advertised opportunities, if you do not secure an industrial placement you will automatically be transferred to the standard three-year degree scheme.

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.

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!

Internships & Placements
- Examples include NHS, GlaxoSmithKline, AstraZeneca, RSPB, Lancashire Wildlife Trust, National Trust, National England, MAC Clinical Research

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
Biochemistry is an exciting and rapidly developing subject and the primary investigative science within biology and medicine. The biochemistry programmes 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, cell structure and function, and supramolecular chemistry, Physical and Analytical Chemistry – research into the properties of molecules and materials using solid-state NMR, biospectroscopy, microfluidics, and photovoltaics; Chemical Theory and Computation – including research in molecular self-assembly and crystallisation; and materials design, simulation and modelling.

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: Chemical Synthesis – including research into organic, organometallic and materials synthesis, and supramolecular chemistry; Physical and Analytical Chemistry – research into the properties of molecules and materials using solid-state NMR, biospectroscopy, microfluidics, and photovoltaics; Chemical Theory and Computation – including research in molecular self-assembly and crystallisation; and materials design, simulation and modelling.

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
The Biochemistry with Genetics degree 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 interests.

Biochemistry with Biomedicine

The Biochemistry with Biomedicine degree 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 working alongside researchers in this area. 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 Immunology, Tropical Diseases and Cancer.
Our 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, arthrits 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.

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

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 Biomedicine programmes offer more flexibility than our IBMSc-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.

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

---

### 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
- 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

**Example optional modules**
- Biochemical Techniques
- Biotechnology
- Cell Biology Techniques
- Cellular Pathology
- Clinical Biochemistry
- DNA Technology
- Haematology and Transfusion Science
- Microbiological Techniques

#### Year 3
**Core modules**
- Cancer
- Medical Genetics
- 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

**Example optional modules**
- Biology of Ageing
- Cell Signalling
- Cell Signalling, Transport & Disease
- Ghana Global Health Programme (Includes Internship)

#### Year 4
**Core modules**
- Extended Research Project
- Project Literature Review

**Optional modules**
- Bioinformatics
- Disease of the Brain
- Drug Development (from concept to clinic)
- Emerging Therapeutics in Immunology
- Microbes and 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.
Biological Sciences with Biomedicine

BSc Honours UCAS Code: C1B9
BSc Honours (Placement Year) UCAS code: C1B8

Biomedicine is at the heart of much of the exciting bioscience research worldwide. The Biological Sciences with Biomedicine degree 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 bioscience 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 Signaling, Environmental Pathogens, Tropical Diseases, and Immunology.

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

Biomedicine with Psychology

BSc Honours UCAS Code: C1C8
BSc Honours (Placement Year) UCAS code: C1C9

The Biology with Psychology degree 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 gives 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 modules 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 you with an opportunity to understand psychology in greater depth.

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

“... 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
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 in the second year, choosing from a variety of theory and practical modules, including a compulsory EMV-Essential 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.

Modules are subject to change and this list does not guarantee that a specific module will be available.
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 Biology
  - 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 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
  - Coral Reef Ecology
  - Environmental Pathogens
  - Environmental Plant Biology
  - Genetics
  - Global Change Biology: Challenges and Solutions
  - Host-Pathogen Interactions
  - Issues in Conservation Biology
  - Neurobiology
  - Scotland Field Course
  - Sustainable Agriculture
  - Tropical Biology and Conservation
  - Wildlife 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.
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 at 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 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 a related sector. This opportunity is continued in our MSc 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

---

**Ecology and Conservation**

**BSc and MSci Hons (Professional Experience)** UCAS Codes: C180 & 0X48

**BSc Hons (Study Abroad)** UCAS Codes: C182

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

---

* Dissertation with External Partner available to C180 and 0X48 students only.
The Bioscience with Entrepreneurship degree is taught jointly with Lancaster University Management School. 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.

In the first year, 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 final 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 set 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.

You have the opportunity to study a broad range of bioscience and entrepreneurship modules, so you can tailor this degree to suit your own interests and career aspirations.

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

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

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

Bioscience with Entrepreneurship
BSc Hons UCAS Code: C1N2
BSc Hons (Placement Year) UCAS code: C1N3

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 opportunity to choose an Entrepreneurial Challenge project in the final 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 set 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.

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 Hons 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 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 Hons 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 Hons 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 Hons Biomedical Science

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 Hons 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 Biomedical 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 Hons Biomedical Science

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 Hons 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 give 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 Hons Biochemistry with Genetics
Admissions Information

Three and Four Year Degrees with a Placement Year

BSc Biochemistry/Biochemistry (Placement Year) (UCAS code: C700 & C707)
BSc Biochemistry with Genetics/Biochemistry with Genetics (Placement Year) (UCAS code: C7C4 & C7C5)
BSc Biochemistry with Biomedicine/Biochemistry with Biomedicine (Placement Year) (UCAS code: BC79 & BC80)
BSc Biomedical Science (UCAS code: B990)
BSc Biomedicine/Biomedicine (Placement Year) (UCAS code: B701 & C708)
BSc Biological Sciences with Biomedicine/Biological Sciences with Biomedicine (Placement Year) (UCAS code: C1B9 & C1B8)
BSc Biological Sciences/Biological Sciences (Placement Year) (UCAS code: C100 & C104)
BSc Biology (UCAS code: C201)
BSc Ecology and Conservation (UCAS code: C182 & C183)
BSc Biology with Psychology/Biology with Psychology (Placement Year) (UCAS code: C1C8 & C1C9)
BSc Bioscience with Entrepreneurship/Bioscience with Entrepreneurship (Placement year) (UCAS code: C1N2 & C1N3)
• A-level grades AAB (C180: A-level grades AAB)
• Scottish higher grades ABBBBB (C180: Scottish higher grades ABBBBB)
• International Baccalaureate 35 pts with 16 pts from best 3 HL subjects (C180: International Baccalaureate 32 pts)
• BTEC: DDD (C180: BTEC: DDD)

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: C104)
BSc Ecology and Conservation (Study Abroad) (UCAS code: C102)

• A-level grades AAB (C180: A-level grades AAB)
• Scottish higher grades ABBBBB (C180: Scottish higher grades ABBBBB)
• International Baccalaureate 35 pts with 16 pts from best 3 HL subjects (C180: International Baccalaureate 32 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 (DX48: A-level grades AAA)
• Scottish higher grades ABBBBB (DX48: Scottish higher grades ABBBBB)
• International Baccalaureate 35 pts with 16 pts from best 3 HL subjects (DX48: 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 Biochemistry (C700, C707, C7C4, C7C5, BC79, BC80), Biomedical Science (B990) and Biomedicine (C701, C703, C7D4, C705, C706) programmes the 2 science A-levels/HLS are preferably from Biology, Chemistry, Maths and Physics. For Biochemistry degrees we require A-level Chemistry and for the Biomedical Science and Biomedicine degrees we require A-level Biology. We will look for sufficient science content and require Distinctions in the majority of relevant science units in your BTEC. For Biochemistry degrees BTECs will be considered alongside A-level Chemistry and for Biomedical Science, Biology and Psychology and Bioscience with Entrepreneurship degrees BTECs in Applied Science including sufficient Biology and Chemistry content will be considered. BTEC is only considered for entry to the BSc Hons variant of our Biomedicine degree. 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 (level 4) and Mathematics at grade B (level 5).

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

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 up to date details of tuition fees, financial support and further guidance please visit our website: www.lancaster.ac.uk/ugfunding

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 equivalences to A-levels.

Tuition Fees and Financial Support

Please see our University web pages for further information on the tuition fees for 2019 entry and the financial packages available to you: www.lancaster.ac.uk/ugfunding

At the time of printing, 2019/20 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 from June to 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 near to major cities such as Manchester and Liverpool. More information about visiting the University can be found at: www.lancaster.ac.uk/travel

Approximate Travel Times (By Train)

<table>
<thead>
<tr>
<th>Destination</th>
<th>Lancaster —</th>
<th>(By Train)</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>2.5 hours</td>
<td></td>
</tr>
<tr>
<td>Liverpool</td>
<td>1.5 hours</td>
<td></td>
</tr>
<tr>
<td>Manchester</td>
<td>1 hour</td>
<td></td>
</tr>
<tr>
<td>Edinburgh</td>
<td>2.5 hours</td>
<td></td>
</tr>
<tr>
<td>Glasgow</td>
<td>2.5 hours</td>
<td></td>
</tr>
</tbody>
</table>