Discover your world

Biosciences
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Explore the *science of life*

Treating diseases. Protecting endangered species. Feeding a growing population. These are some of the greatest challenges facing humanity today. And we can give you the real-world skills to take them on.

The answers to these challenges – and many more – lie in the Biosciences. They give us tools in the fight against cancer, Alzheimer’s and arthritis (among others). They help us understand how the human body ages. It informs the way we view the effects of climate change and the impact of human activity on our planet. They even offer a route into fundamental questions and concepts of our existence: how did life on Earth begin, and how did those first steps lead to the complex ecosystems and organisms that surround us today?

Biosciences spans a vast variety of specialisms, offering the opportunity to focus on life from the molecular to the global level. With a team that includes experts from the full breadth of the subject area, from biomedicine and biochemistry to evolution, biodiversity and zoology, we’re ready to help you explore it all.
#4
in the UK for Biosciences
(The Guardian University League Tables 2020)

93%
students were satisfied overall
(National Student Survey 2018)

#5
in the UK for teaching quality in Biological Sciences
(The Times and Sunday Times
Good University Guide 2019)

What does this mean for you?

We offer you a diverse range of module choices to suit your particular interests. You will be exposed to cutting edge research through our teaching, and this makes Lancaster a really exciting learning environment.

**Biology**
Tailor your degree to match your specific interests by choosing from a wide variety of modules. You can develop your knowledge of a range of biological processes, learn how plants and animals are affected by the challenges of the 21st century, and have the option to specialise, for example, in the biomedical, biochemical or environmental aspects of biology.

**Ecology and Conservation**
You will examine the ecology and conservation of different ecosystems, in which organisms are locked in complex interactions with one another and their environment. It’s a diverse field and your degree will focus on areas including animal behaviour, evolution and global change biology.

**Biochemistry**
Biochemistry is an exciting and rapidly developing subject and the primary investigative science within the Biosciences and medicine. You will examine the structure and function of living organisms at the molecular and cellular level, studying core modules in biochemistry and chemistry.

**Biomedicine**
Our flexible Biomedicine and our IBMS accredited Biomedical Science degree courses are aimed at those with a broad interest in human life processes and disease, and give you the opportunity to gain an in-depth understanding of the techniques and issues associated with modern biomedical research.
Made for 

Practical study
You won’t just learn in lecture theatres! We place great emphasis on practical learning, whether that is in our new teaching labs or out in the field. Practical learning enables you to put theory into practice and understand the principles underpinning the topics you are studying, whilst also developing skills which will be of use throughout your degree and future career. On average, 50% of your contact time will be practical study which includes:

+ Workshops
+ Laboratory-based work
+ Computer-based modelling
+ Field trips

Field trips
Fieldwork is an exciting and interesting way to develop your practical skills. Our surroundings allow us to give you regular hands-on experience of a wide range of environmental and ecological situations in the local area. Depending on your degree scheme, you will also have the opportunity to travel further afield or even overseas on a range of exciting trips that will place your studies in the context of real-world issues.
Chloe Patterson
Biology

When I first came to Lancaster I felt completely at ease thanks to the welcoming students who really showed me what it was like to be part of their community; at that point I knew I wanted to come to Lancaster.

As well as the community aspect of the University, my course ticked all the boxes. What attracted me was the wide range of industry-driven topics the course offered, which really sparked my passion to learn more and delve deeper into a subject I love.

One of my favourite elements of the course is the opportunities to undertake fieldwork. I have been able to take my studies beyond the campus labs to places in the local area, across the UK and abroad. It's a fantastic way to put my theory into practice - I find that being at one with the world out in the open allows me to get the full experience of real work environments and equips me with industry skills for my future career.

Melissa Knott
Biochemistry

I felt like the whole vibe and atmosphere of Lancaster was the best: when I came on the Open Day straight away it was the labs that blew me away, they were so modern.

By choosing biochemistry it's allowed me to further learn about impacts of people's environments or genetics and how they may get diseases. In the first year my degree was split between biology and chemistry so you could gauge what you wanted to choose in the second year, and even though I'm not doing straight chemistry there is still some in the biochemistry modules.

In the practicals I think the interaction with the lab demonstrators and lecturers is more personal than in a big lecture theatre and you can ask specific questions and see how the theory we've been learning applies in the lab and you have the demonstrators there to help if you get stuck.

The place for the Bioscientist

Liviu Lucaciu
Biomedical Science

I came to Lancaster because I really liked that it was a welcoming but professional environment; I am from Romania and had never been to the UK before so finding a friendly place was really important to me. Although I have missed home, there was never a moment I felt isolated or alone.

During the first year the course is general, and many subjects in the biosciences are covered. In the second year you look more in depth, including biochemistry which was really interesting because it helped me understand the mechanisms of certain medications. I got a fantastic opportunity of having genetics in my dissertation as part of the project we are looking to see what the effect of the genome is on the phenotype of a person.

The lab practicals are based on the theory of what we have been learning in the lectures. It gives you the chance to interact with postgraduate students and researchers who are more than eager to explain some of the more challenging concepts.

Abbie Pilkington
Ecology and Conservation

I went to visit a number of universities, and Lancaster provided that little something that made me love everything about it, as I still do! My course is like no other and it has everything I want from a degree. I am able to study topics in my first year that I have touched upon before, whilst discovering new things every day.

There are so many interesting modules, and the really great thing about my course is the wide range of subject areas we study, such as evolution, aquatic ecology, zoology and so much more; this means the scope of my learning is forever growing in the direction I want it to, especially as I have opportunities further down the line to specialise in my area of interest.

It's definitely an advantage that the University is on the Lake District's doorstep. I have many opportunities to visit various places which helps me to visualise my learning and delve deeper into ecology and conservation out in the field.
Hello
Future

You can pursue a wide range of careers with the skills you gain from any of our bioscience degrees, from biomedical science to research or from pharmacology to business.

Examples of the types of careers pursued by our graduates

- Biomedical Scientist
- Nature Conservation Officer
- University Lecturer
- Biotechnologist
- Soil Scientist
- School Teacher
- Microbiologist
- Crop Scientist
- Human Resource Manager
- Molecular Geneticist
- Ecological Consultant
- Marketing Officer
- Forensic Scientist
- Reserve Manager
- Publishing editor
- Pharmaceutical Scientist
- Government or NGO Scientist
- Food Technologist
- Research Ecologist
- Laboratory Technician

Whatever your career aspirations may be, or even if you’re still not quite sure, we’re here to support you reach your goals. Tutorials and workshops on career planning are integral parts of your degree. You will undertake a module in employability skills, giving you excellent preparation for applying to graduate-level jobs and graduate schemes, and our dedicated Careers Service are here to assist you every step of the way. From helping you make a lasting impression with your CV to ensuring you are well prepared for interviews and assessment centres, they are able to offer you tailored and personalised support. What’s more, they offer lifelong careers support to our graduates so, if you need us, we will always be here to help.

A career for Tiffany

Tiffany Thorn, (Pendle College), graduated with a BSc in Biochemistry with Biomedicine* in 2009, and is currently CEO of BiVictriX Therapeutics.

After graduating, I worked for a drug discovery biotech company as a laboratory technician and synthetic organic chemist; this was a great opportunity to advance my lab skills learnt during my degree, and my role allowed me to get hands on in developing novel synthetic organic chemistry compounds.

After taking on a project management position within the company, I later achieved a position on the NHS Modernising Scientific Careers Clinical Scientist training scheme, a three year programme where I also studied for my Masters, leading me to become a registered Clinical Scientist.

I became interested in antibodies and how they are used to deliver chemotherapy to target cancer cells. I particularly enjoyed learning about the newly emerging oncology compounds and antibody drug conjugates (ADCs), which have had amazing results in clinical trials – it really sparked my passion and interest to discover more. This led to taking a role at ADC Biotechnology Ltd, who focus on this area of development.

My new position took a closer look at understanding the strengths and limitations of ADC therapeutics, allowing me to develop a new technology to produce a class of ADC with superior targeting capabilities. From this, I decided to start up my own company, BiVictriX Therapeutics Ltd, focusing specifically on the research and development of scientific and technological concepts.

Starting up a new company doesn’t come without its challenges, but the lifelong skills I have learnt along the way are invaluable. I believe that reaching your career goals has to come from your own motivation, drive and passion for your area of interest – always make sure your skills are up to date and get involved in as many opportunities as you can, and you will achieve your aspirations.

*Tiffany Thorn, (Pendle College), graduated with a BSc in Biochemistry with Biomedicine* in 2009, and is currently CEO of BiVictriX Therapeutics.
Spain
Home to over 1500 species of plants, 400 species of birds and 50 terrestrial mammals, Doñana National Park is one of the most important biodiversity hotspots in Europe. You will explore the diversity of the habitat and organisms living in the area, and you’ll gain the opportunity to enhance your learning through trips and interactions with local hospitals, research institutions, and NGOs.
Available to: Biology, Ecology and Conservation, and Zoology students

Kenya
Based in the beautiful Rift Valley, you’ll 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, 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.
Available to: Biology, Ecology and Conservation, and Zoology students

Scandinavia
The 6 week residential ‘Ghana Global Health Programme’*, based at our Ghana campus, focuses on health and infectious diseases, and brings together students from Lancaster and Boston University. Jointly developed and taught by lecturers at Lancaster and Boston Universities, you will explore the relationship between infectious diseases and the social determinants of health. Work experience with a non-governmental organisation allows you to see first-hand how public health strategies are implemented on the ground. You will also have the opportunity to enhance your learning through trips and interactions with local hospitals, research institutions, and NGOs.
Available to: Biochemistry, Biology, Biology with Entrepreneurship, Biology with Psychology, Biomedical Science and Biomedicine students
*Limited to 8 places

Switzerland
This is an intensive week-long residential field trip to south west Switzerland. You will collect significant amounts of field data and focus on one of six interconnected study themes, spanning: alpine climate and hydrology; glacial processes; alpine rivers; streams; soils; and ecosystems. You will gain an in-depth understanding of a particular thematic focus of alpine environments.
Available to: Ecology and Conservation students

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.
Available to: Biology, Ecology and Conservation, and Zoology students

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, you will see a range of beautiful tropical wildlife and visit people’s homes and agricultural plots to understand the challenges faced by local people. This is a unique opportunity to work alongside experts and understand the challenges of pursuing biodiversity conservation whilst reducing poverty.
Available to: Ecology and Conservation students
Made for learning

Lancaster University believes in our students. This is why we invest in the best facilities for you.

Teaching labs

We recently spent £4.4 million on our new life science teaching laboratories. You will spend a lot of time here, so we have created a light, open environment with the latest equipment for practical experiments and teaching. Whether you’re handling mammalian cells or exploring how plants respond to specific environmental cues, you’ll have the space to work both independently and collaboratively on projects.

Bio-imaging

The cutting-edge microscopy in our bio-imaging suite is putting you at the forefront of bioscience research. Our facilities provide new insights into biological questions ranging from human disease to global change biology and allow you to study live cells over an extended period – a technique often used by MSci students in their fourth year extended research projects.

Cell biology

If you are interested in areas of research including gut biology, immunology, cancer, parasitology, tropical disease, plant biology and more, our well-equipped cell biology facilities are an essential tool for developing your knowledge in these fields. For example, our flow cytometry instruments allow in-depth analysis of cell populations. You can use this to analyse cell cycle and cell death when investigating the efficacy of drug treatments in relation to cancer.

DNA and protein analysis

Our teaching labs are equipped with facilities for DNA amplification as well as for the separation and imaging of DNA and proteins and measuring enzyme function. Understanding the function of the fundamental building blocks of life –DNA and proteins– is essential in diverse areas from Alzheimer’s disease to global food security. Other techniques, such as the chromatographic separation of molecules and proteins or working with fluorescently-tagged proteins and/or DNA, could form part of your undergraduate research project.

Soils and ecosystem ecology

Did you know that soils are responsible for locking up more carbon than the trees and plants that grow in them? If you want to learn how soils contribute to reducing the effects of carbon dioxide released into the atmosphere, the facilities in our Soils and Ecosystem Ecology Laboratory will be right up your street. You can study novel aspects of plant-soil interactions, soil biogeochemistry and their relationship with ecosystem ecology and conservation.

Cell biology

If you’re interested in studying the effects of genetic variation on physiological, cellular and molecular processes involved in areas such as growth, development, ageing and neurobiology, our facilities provide the opportunity for you to explore this further. Model organisms include the plant Arabidopsis thaliana, the fruit fly Drosophila melanogaster and the nematode Caenorhabditis elegans.

Controlled environment plant growth

Our suite of purpose-built glasshouses, walk-in growth rooms and high-specification growth chambers provide facilities dedicated to a wide range of plant science and ecological teaching and research. Our unique robotic microphenotyping platform allows screening of plant growth and development responses. Your undergraduate project can take advantage of the range of the conditions available in these growth environments where climate, temperature, watering, light quality and day length can all be precisely controlled.
Renowned experts at the forefront of their fields are shaping our understanding of the world. Their work feeds into our degree programmes, ensuring that your education is informed by cutting-edge thinking.

Insights into Immunity

In a study led by Dr. John Worthington, our scientists discovered that immune responses, originally found to prevent fungal infections, are also important in eliminating Trichinella spiralis, a roundworm that causes Trichinosis.

Trichinosis is contracted by consuming raw or undercooked meat infected with the Trichinella parasite, and for our bodies to expel it, our immune responses have shown to rely solely on white blood cells named T helper 2 cells, which specialise in eliminating gastrointestinal parasites.

Our scientists discovered that following the T helper 2 response, a second T helper 17 response arose which played a key role in maintaining the intestinal muscle contractions needed to flush out the worms and expel the parasite. Previously, the T helper T response has been shown to be specialised for eliminating fungal infections and certain bacterial infections, with our research finding that the late acting T helper 17 cell response also proved to be just as important in resolving the infection and eliminating the worm.

Our research provides novel insights into how the immune system interacts with muscle contraction during intestinal inflammation and, although the occurrence of this reaction is rare in the developed world, it provides a crucial step towards designing new treatments for millions of people who suffer from intestinal parasitic infections worldwide.

Defying Dementia

Professor David Allsop, Professor of Neuroscience, became the first person in the world to isolate plaques from human brain tissue and develop a drug that blocks plaques forming in the brains of people living with Alzheimer’s disease, the most common cause of dementia.

There are currently no drugs available to cure, prevent or slow down the progression of Alzheimer’s, and currently, the disease’s drug research focuses mainly on preventing the plaques or the tangles forming in the brain – many of which have failed to achieve this.

Professor David Allsop and our team of researchers discovered that the most effective treatment must involve attacking both the plaques and tangles simultaneously, and they are now working towards their goal of producing a dual action drug with a far greater chance of success in the clinic.

Rats and Coral Reefs

Professor Nick Graham and our researchers are working to protect threatened environments from invasive predators, such as rats. They are having a damaging impact on the coral reefs that encircle and protect many remote tropical islands.

The research has shown that the rats, by feeding on bird eggs, chicks and even adult birds, have decimated seabird populations in 90% of the world’s temperate and tropical island groups, but these seabirds are important to these kinds of islands due to the nutrients in their droppings.

Our researchers were able to study the effects that rats have on the ecosystem of the Chagos islands in the central Indian Ocean. This was a perfect ‘laboratory’ setting due to some of the islands being rat-free, while black rats infest the others.

This unusual situation enabled the researchers to show that the rats were harming not only the ecology of the islands, but the surrounding sea and adjacent coral reefs as well. Not only did the rats have a detrimental effect on the fish life and algae, but also the way that the islands’ vulnerable ecosystems function. The research has shown that the rats, by feeding on bird eggs, chicks and even adult birds, have decimated seabird populations in 90% of the world’s temperate and tropical island groups, but these seabirds are important to these kinds of islands due to the nutrients in their droppings.

Feed the World

Our researchers on the Realizing Increased Photosynthetic Efficiency (RIPE) programme have established a new way of sustainably increasing crop yields for farmers in the world’s poorest countries.

Our team worked on increasing their understanding of photosynthesis to pinpoint the best opportunities for boosting crop productivity without the need for a greater input of fertilizer and water. The study, led by Professor Martin Parry and Dr Elizabete Carmo-Silva, aims to increase the efficiency with which crops use sunlight to produce sugars.

Rubisco is a protein that acts as a catalyst, converting carbon dioxide in the atmosphere into sugars. Our research team found that this protein was not as active in shaded leaves, meaning that the food crop would not reach peak productivity. However, in full and direct sunlight, activity increased in response to the additional energy available for carbon assimilation, allowing the crop to flourish fully.

This research is a fundamental first step to future-proof the world’s food supply.

The Place for the Researcher
Our academics are leaders in their fields of research and deliver enthusiastic and engaging teaching through a range of methods.

Every aspect of learning

Assessment

The assessment process varies across modules, but includes laboratory reports, essays, independent project reports, group presentations, multiple-choice tests and exams. Assessment is an on-going process, rather than being left solely until the end of the degree. This means we are able to offer feedback to you throughout your degree as part of your preparation for when modules are examined at the end of each year.

Lectures

Lectures provide an introduction to the key issues and findings in each topic and are delivered by an expert in that particular area. They usually last one hour, and should be complemented by further independent study by reading relevant literature on the topic. We provide digital recordings of lectures for revision purposes and online reading lists of suitable books and journals that are available either digitally or in print from our library.

Tutorials

Group tutorials are usually one-hour sessions where you will be encouraged to discuss your learning with fellow students, under the guidance of an academic tutor. During these in-depth study sessions, you will learn key skills that relate to your degree.

Academic support

We foster a highly supportive learning environment, making sure you are fully supported to achieve your full academic potential. This includes assigning you an Academic Tutor with whom you will meet regularly throughout your degree to discuss your academic progress. You will have access to our Student Learning Developers, who offer workshops and advice on improving your academic skills.

Practical classes

These are designed to help you discover the key principles underpinning the topic of study, whilst also developing your skills which you will be able to put to use throughout your degree and future career. Practical classes could including experiments conducted in our teaching laboratories, research projects, workshops, field trips and field and residential courses.
The opportunity to spend your third year working in a graduate-level role is a fantastic addition to your CV. Being able to demonstrate professional experience of working on a range of important and interesting projects, where you get to apply the skills you’ve learned in your first and second year, is invaluable when competing in the job market.

Not only that, but working in a professional role can help you to decide what you do, or don’t, want to do once you graduate.

Finding and securing a placement opportunity is down to you, just as it would be when applying for a graduate vacancy, however we will provide you with plenty of support and guidance in preparing you for interviews, writing your CV, applying for positions and even taking part in assessment centres.

We also have well established and long standing links with industry which means that we’ll have a number of placement opportunities just for Lancaster students.

Placement year

BSc Biomedical Science students are able to apply for a placement with the NHS during their degree, although competition for these placements is high. A small number of BSc Biomedical Science students have been able to independently source an NHS placement after graduation.

Alix took the opportunity to apply for her placement year between the second and third year of her degree in an NHS pathology laboratory. During her placement year, she completed an Institute of Biomedical training portfolio to demonstrate her skills.

Typically, placements are structured so that you can gain experience in each department before choosing a specialism where you will spend most of your year, but my placement was a little different!

I spent a year in histopathology, with 6 months in the main laboratory and 6 months working on a molecular diagnostics project for lung cancer testing. I was a fully integrated member of the lab and trained in a wide range of techniques. I also got the opportunity to visit the molecular department at Birmingham University Hospital and attended seminars given by renowned leaders in cancer diagnostics.

I found my placement year extremely rewarding, and completing my portfolio puts me in a great position to get a job as a Biomedical Scientist – many students are employed part-time during the third year of their degree to enhance their skills further. It was great to use the knowledge I had gained during my degree to help patients receive life-changing diagnoses.
Enhance your studies, boost your self-confidence and immerse yourself in the culture of another country as part of our exciting opportunities to study overseas.

Our Biology, Biochemistry, Biomedicine, Ecology and Conservation, and Zoology degree schemes offer you the opportunity to broaden your academic horizons by spending your second year studying abroad in either North America or Australasia. You’ll study similar modules to those available in Lancaster, but the year abroad will also provide you with an understanding of a different culture and society. The year abroad is not an addition to your degree but instead fully integrated into the standard time frame of three years for a BSc, or four years for an MSci.

If you apply for a study abroad course, we will also consider you for the standard degree programme. If, during your first year, you decide you no longer wish to study abroad, you can simply switch to the standard degree programme.

Europe scheme

Additionally, with our Ecology and Conservation degree schemes, you can undertake a three or four month placement through the Europe scheme.* You can spend three months abroad at the end of your second year, undertaking a research project in Switzerland, Croatia or the Czech Republic. Alternatively, you could study modules taught in English for four months at a university in the Netherlands at the start of your third year. Whatever you choose, it will be an unforgettable experience and a unique addition to your degree.

For more information, please visit www.lancaster.ac.uk/study-abroad

*Subject to continuation of the Europe scheme beyond academic year 2020/21.

Discover your world beyond borders
Our courses

Specific entry requirements are listed under each degree, however there are some common criteria required for each of our Biosciences programmes.

Example science subjects: Biology, Chemistry, Computing, Environmental Science, Geography, Geology, Human Biology, Mathematics, Physics and Psychology.*

We require a GCSE in English Language (grade 4) and Mathematics (grade 5).

Combined and other qualifications
We welcome applications from students with combined or other internationally recognised qualifications. For more information, please contact the Admissions Office directly on +44 (0)1524 592028 or ugadmissions@lancaster.ac.uk

*For Biochemistry, Biomedical Science and Biomedicine: Biology, Chemistry, Mathematics, Physics.
Biology

BSc and MSci Hons

BSc Hons C100 (3 years)
MSci Hons 1M66 (4 years)
BSc Hons (Study Abroad) C102 (3 years with Year 2 spent overseas at a partner university)
BSc Hons (Placement Year) C104 (4 years with Year 3 spent on placement)

Entry requirements for BSc Biology and BSc Biology (Placement Year)

A levels
AAB to include two science subjects
BTEC
DDD

International Baccalaureate
36 points overall with 16 points from the best 3 Higher Level subjects including two science subjects at HL grade 6

Entry requirements BSc Biology (Study Abroad) and MSci Biology

A levels
AAA to include two science subjects
BTEC
DDD

International Baccalaureate
36 points overall with 16 points from the best 3 Higher Level subjects including two science subjects at HL grade 6

We offer you the flexibility to switch between these programmes subject to achieving the appropriate grades.

Explore the science of life by choosing topics from our broad range of modules that both interest and excite you, from the molecular to the ecological, reflecting the interdisciplinary nature of modern biology.

Taught by internationally-renowned academics, you will develop the skills required to tackle some of the biggest challenges facing our planet, whether it’s researching underlying scientific principles, the development of new treatments for disease or helping to protect endangered species.

In first year you will gain a broad understanding of biology, from genetics and cell biology through to ecology and conservation biology, whilst having the opportunity to link these to key global challenges, such as the maintenance of biodiversity and human health. Second and third years offer specialisation, allowing you to shape your own degree from a diverse range of in-depth theory and practical skills modules. You will also complete an independent research project on a topic selected from across the full breadth of biology.

In the fourth year of the MSci Biology degree you will take Masters-level modules and complete an extended research project.

Our optional international field trips provide exciting opportunities. You may explore the Doñana National Park in the southwest of Spain, which is home to a plethora of plant, bird and animal species; you can visit some of the UK’s last remaining natural habitats in rural Scotland, and witness a range of animals including red deer, osprey and golden eagles; or contribute to an expert-led study of the Rift Valley of Kenya, where you will evaluate the challenging balance between tropical conservation and human activity.

Selecting from our wide choice of optional modules gives you the flexibility to either follow a particular route, for example, environmental or biomedical, or to maintain a broad focus by choosing modules from across the breadth of biology.

### Year 1

**Core modules**
- Biodiversity and Conservation
- Cell Structure and Function
- Evolutionary Biology
- Experimental Design and Data Analysis
- Genetics
- Global Change Biology
- Impact of Microbes
- Molecules of Life
- Skills in Biomedical and Life Sciences
- Zoology

**Optional modules**
- Plant Structure and Function
- Aquatic Ecology
- Biomedicine in Society
- Biostatistics
- Developmental Biology
- Environmental Physiology
- Health and Medicine
- Infection and Immunity
- Introduction to Epidemiology
- Marine and Estuarine Biology
- Protein Biochemistry
- Spanish-Doñana Field Course

### Year 2

**Core modules**
- Employability Skills
- Work-Based Learning Preparation (Placement Year only)

**Optional modules**
- Biochemical Techniques
- Bioinformatics
- Biostatistics
- Cell Biology
- Cell Biology Techniques
- DNA Technology
- Environmental Physiology
- Evolution
- Experimental Design and Analysis
- Field Biology
- Genetics
- Medical Microbiology
- Microbiological Techniques
- Populations to Ecosystems
- Practical Physiology
- Principles of Biodiversity Conservation
- Research Design and Delivery
- Vertebrate Biology

### Year 3

**Core modules**
- Innovation in the Biosciences
- Research Project

**Optional modules**
- Animal Behaviour
- Biology of Ageing
- Cancer
- Cell Signalling
- Cell Cycle and Stem Cells
- Cell Signalling, Transport and Disease
- Clinical Immunology
- Coral Reef Ecology
- Ecophysiology of Host-Parasite Interactions
- Environmental Pathogens
- Environmental Plant Biology
- Environmental Pathogens
- Ethics in Biomedicine
- Ghana Global Health Programme (includes work experience)
- Genetics
- Global Change Biology: Challenges and Solutions Issues in Conservation biology
- Issues in Conservation Biology
- Medical Genetics
- Molecular and Biochemical Parasitology
- Neurobiology
- Proteins: Structure, Function and Disease
- Scotland Field Course
- Sustainable Agriculture
- Tropical Biology and Conservation (Kenya Field Course)
- Tropical Diseases

Places allocated via competitive application

### Year 4

**Core modules**
- Extended Research Project
- Project Literature Review

**Optional modules**
- Biostatistics
- Conservation Biology
- Diseases of the Brain
- Crop Protection
- Emerging Therapeutics in Immunology
- Data Analysis and Interpretation
- Food Security, Agriculture and Climate Change
- Habitat Management
- Lake Ecology
- Microbes and Disease
- Molecular Basis of Cancer
- Models of Disease
- Pollution Microbiology
- Using the NVC
- Wildlife Monitoring Techniques
- Wildlife Population Ecology

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1 Must include sufficient science and we require Distinctions in the majority of relevant science units. Please contact the Admissions Team for further advice.

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

### Biology degree programme routes

- **Biology**: Molecules to Environments route
  - Mix and match core and optional bioscience modules
  - Cell Biology route
  - Environmental Biology route
- **Biomedicine and Disease**: route
- **Molecular Biology**: Biochemistry route
- **Biochemistry**: route
  - Cell Biology route
  - Environmental Biology route

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### Core modules

- **Biodiversity and Conservation**
- **Cell Structure and Function**
- **Evolutionary Biology**
- **Experimental Design and Data Analysis**
- **Genetics**
- **Global Change Biology**
- **Impact of Microbes**
- **Molecules of Life**
- **Skills in Biomedical and Life Sciences**
- **Zoology**

### Optional modules

- **Plant Structure and Function**
- **Aquatic Ecology**
- **Biomedicine in Society**
- **Biostatistics**
- **Developmental Biology**
- **Environmental Physiology**
- **Health and Medicine**
- **Infection and Immunity**
- **Introduction to Epidemiology**
- **Marine and Estuarine Biology**
- **Protein Biochemistry**
- **Spanish-Doñana Field Course**

### Core modules

- **Employability Skills**
- **Work-Based Learning Preparation (Placement Year only)**

### Optional modules

- **Biochemical Techniques**
- **Bioinformatics**
- **Biostatistics**
- **Cell Biology**
- **Cell Biology Techniques**
- **DNA Technology**
- **Environmental Physiology**
- **Evolution**
- **Experimental Design and Analysis**
- **Field Biology**
- **Genetics**
- **Medical Microbiology**
- **Microbiological Techniques**
- **Populations to Ecosystems**
- **Practical Physiology**
- **Principles of Biodiversity Conservation**
- **Research Design and Delivery**
- **Vertebrate Biology**

### Core modules

- **Innovation in the Biosciences**
- **Research Project**

### Optional modules

- **Animal Behaviour**
- **Biology of Ageing**
- **Cancer**
- **Cell Signalling**
- **Cell Cycle and Stem Cells**
- **Cell Signalling, Transport and Disease**
- **Clinical Immunology**
- **Coral Reef Ecology**
- **Ecophysiology of Host-Parasite Interactions**
- **Environmental Pathogens**
- **Environmental Plant Biology**
- **Environmental Pathogens**
- **Ethics in Biomedicine**
- **Ghana Global Health Programme (includes work experience)**
- **Genetics**
- **Global Change Biology: Challenges and Solutions Issues in Conservation biology**
- **Issues in Conservation Biology**
- **Medical Genetics**
- **Molecular and Biochemical Parasitology**
- **Neurobiology**
- **Proteins: Structure, Function and Disease**
- **Scotland Field Course**
- **Sustainable Agriculture**
- **Tropical Biology and Conservation (Kenya Field Course)**
- **Tropical Diseases**

Places allocated via competitive application

### Year 4

**Core modules**
- **Extended Research Project**
- **Project Literature Review**

**Optional modules**
- **Biostatistics**
- **Conservation Biology**
- **Diseases of the Brain**
- **Crop Protection**
- **Emerging Therapeutics in Immunology**
- **Data Analysis and Interpretation**
- **Food Security, Agriculture and Climate Change**
- **Habitat Management**
- **Lake Ecology**
- **Microbes and Disease**
- **Molecular Basis of Cancer**
- **Models of Disease**
- **Pollution Microbiology**
- **Using the NVC**
- **Wildlife Monitoring Techniques**
- **Wildlife Population Ecology**
Biology with Entrepreneurship

**BSc Hons**

**BSc Hons C1N2 (3 years)**

**BSc Hons (Placement Year)**

C1N3 (4 years with Year 3 spent on placement)

**BSc Biology with Entrepreneurship**

**A levels**

AAB to include two science subjects

**BTEC**

DDD in Applied Science including sufficient Biology and Chemistry content

**International Baccalaureate**

35 points overall with 16 points from the best 3 Higher Level subjects including two science subjects at HL grade 6

**BSc Biology with Entrepreneurship (Placement Year)**

**A levels**

AAB to include two science subjects

**BTEC**

DDD in Applied Science including sufficient Biology and Chemistry content

**International Baccalaureate**

35 points overall with 16 points from the best 3 Higher Level subjects including two science subjects at HL grade 6

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Biologes are fundamental to our understanding of many of the key issues facing human society today, from the development of new treatments for diseases to the need to produce sufficient food to feed the increasing global population. Bioscience is a fast-paced, innovative environment that increasingly requires graduates who are not only leading scientists, but who also have an entrepreneurial mind-set. This degree is designed for those with an interest in both and is taught jointly with staff from Lancaster University Management School (LUMS).

There are two compulsory biology modules and an introductory entrepreneurship module in first year that will challenge your assumptions about entrepreneurship as well as providing an insight into the challenges of new ideas and innovations. You can complement these by choosing additional modules from a range of biology topics.

In the second year, you will take two compulsory entrepreneurship modules and begin to specialise by choosing modules from both biology and entrepreneurship disciplines that suit your own interests.

In third year there are no core modules as you begin to develop your specialisations further by choosing 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.

**Biology with Entrepreneurship research projects**

In your final year, along with completing a dissertation, you will also have the option to choose an Entrepreneurial Challenge project. 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.

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### Year 1

**Core modules**
- Entrepreneurship: Key Debates and Concepts
- Experimental Design and Data Analysis
- Skills in Biomedical and Life Sciences
- Placement Preparation (Placement Year only)

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

### Year 2

**Core modules**
- Entrepreneurial Mindset OR Business Start-up
- Employability Skills
- Product and Service Innovation
- Selling for Entrepreneurs
- Work Based Learning Preparation (Placement Year only)

**Optional modules**
- Biochemical Techniques
- Biochemistry
- Bioinformatics
- Cell Biology
- Cell Biology Techniques
- DNA Technology
- Environmental Physiology
- Evolution
- Experimental Design and Analysis
- Genetics
- Medical Microbiology
- Microbiological Techniques
- Populations to Ecosystems
- Practical Physiology
- Principles of Biodiversity Conservation
- Vertebrate Biology

### Year 3

**Optional modules**
- Animal Behaviour
- Biology of Ageing
- Bioscience Research Project
- Building and Leading Entrepreneurial Teams
- Business Model Innovation
- Cancer
- Cell Cycle and Stem Cells
- Cell Signalling
- Cell Signalling, Transport and Disease
- Clinical Immunology
- Entrepreneurial Challenge Project
- Environmental Pathogens
- Environmental Plant Biology
- Essentials of Strategic Management
- Ethics in Biomedicine
- Family Business
- Funding Entrepreneurial Ventures
- Gender and Entrepreneurship in a Global Context
- Genetics
- Ghana Global Health Programme (Includes work experience)
- Global Change Biology: Challenges and Solutions
- Host-Parasite Interactions
- Innovation in the Biosciences
- Issues in Conservation Biology
- Medical Genetics
- Molecular and Biochemical Parasitology
- Networking for Entrepreneurship
- Neurobiology
- Proteins: Structure, Function and Evolution
- Social contexts of entrepreneurship
- Sustainable Agriculture
- Tropical Diseases

*Places allocated via competitive application*

### Year 4

For Placement Year students
- The core and optional modules described above for Year 3
- Work Based Learning Reflection
Biology with Psychology
BSc Hons

**BSc Hons C1C8 (3 years)**
**BSc Hons (Placement Year) C1C9 (4 years with Year 3 spent on placement)**

BSc Biology with Psychology
A levels
AAB to include two science subjects
BTEC
DDD in Applied Science

**BSc Biology with Psychology (Placement Year)**
A levels
AAB to include two science subjects
BTEC
DDD in Applied Science

1 Must include sufficient science and we require Distinctions in the majority of relevant science units. Please contact the Admissions Team for further advice.

Choose the areas of biology that interest you the most and link these studies to an understanding of human behaviour. You will gain an in-depth knowledge of biology and psychology, with the core modules focusing on understanding the biology that underpins human behaviour. The psychology modules are taught by experts from the Department of Psychology. This combination of disciplines provides you with an impressive mixture of scientific, analytical, communication and interpersonal skills that gives you an excellent basis for future employment.

In the first year your compulsory and optional modules will be split into thirds, with one third being psychology related and two thirds being biology related. 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 biology techniques modules, and in the final term of second year, begin a dissertation module. This involves an independent research project on a topic from within biology. In the third year, you will take up to three psychology modules with your remaining modules selected from biology.

### Year 1
**Core modules**
- Cell Structure and Function
- Evolutionary Biology
- Experimental Design and Data Analysis
- Genetics
- Human Physiology
- Infection and Immunity
- Skills in Biomedical and Life Sciences
- Understanding Psychology
- Placement Preparation

**Optional modules**
- Biomedical Science in Practice
- Biomedicine and Society
- Biotechnology
- Diagnosis in Biomedical Science
- Hormones and Development
- Protein Biochemistry

### Year 2
**Core modules**
- Cell Biology
- Cell Biology Techniques
- Cognitive Psychology
- Developmental Psychology
- Employability Skills
- Foundations of Cognitive Neuroscience
- Practical Physiology
- Research Project
- Work Based Learning Preparation

**Optional modules**
- Bioinformatics
- DNA Technology
- Genetics
- Medical Microbiology

### Year 3
**Core modules**
- Animal Behaviour
- Cognitive Affective and Clinical Neuroscience
- Neurobiology
- Prozac Nation: Human Psychopharmacology

**Optional modules**
- Biology of Ageing
- Cancer
- Cell Cycle and Stem Cells
- Cell Signalling
- Cell Signalling, Transport and Disease
- Clinical Immunology
- The Developing Mind
- Ethics in Biomedicine
- Ghana Global Health Programme (includes work experience)  †
- Pathobiology
- The Lying Brain: an examination of hallucinations and delusions in normal, clinical and pathological populations
- The Psychology of Attention: from the laboratory to everyday behaviour
- The Neuroscience of Typical and Atypical Social Development
- Topics in Clinical Psychology
- Tropical Diseases

### Year 4
**For Placement Year students**
- The core and optional modules described above for Year 3
- Work Based Learning Reflection

1 Places allocated via competitive application
Biochemistry
BSc and MSci Hons

BSc Hons C700 (3 years)
MSci Hons C706 (4 years)
BSc Hons (Study Abroad) C702 (3 years with Year 2 spent overseas at a partner university)
BSc Hons (Placement Year) C707 (4 years with Year 3 spent on placement)

BSc Biochemistry/ BSc Biochemistry (Placement Year)

A levels
- AAB to include Chemistry and either Biology, Mathematics or Physics
- Considered alongside A level Chemistry

International Baccalaureate
- 35 points overall with 16 points from the best 3 Higher Level subjects including 6 in HL Chemistry and 6 in one further HL subject from Biology, Mathematics or Physics

BSc Biochemistry (Study Abroad) MSci Biochemistry

A levels
- AAA to include Chemistry and either Biology, Mathematics or Physics
- Considered alongside A-level Chemistry

International Baccalaureate
- 36 points overall with 16 points from the best 3 Higher Level subjects including 6 in HL Chemistry and 6 in one further HL subject from Biology, Mathematics or Physics

Biochemistry examines the structure and function of living organisms at the molecular level. It is an exciting and rapidly developing subject and the primary investigative science within biology and medicine. Our three-year Biochemistry degree includes core modules in biochemistry and chemistry combined with modules in related fields. Modules in chemistry are taught by experts from our Department of Chemistry.

In first year you will study a range of core modules designed to provide you with a broad overview of biology and chemistry, including modules on Protein Biochemistry, Biotechnology and Cell Structure and Function – all designed to give you a good foundation in key modern biochemical concepts.

Alongside your core modules, you can use your three optional modules to specialise in one of our pathways:
- + Biochemistry
- + Genetics
- + Biomedicine

Throughout your degree, you can continue on your chosen pathway or you have the flexibility to change from the focused Biochemistry pathway to those specialising in Genetics or Biomedicine.

In the fourth year of the MSci degree you will take Masters-level modules and complete an extended research project.

Core modules
- Biochemical Techniques
- Biochemistry
- Cell Biology
- Employability Skills
- Genetics
- Research Project
- Work Based Learning Preparation

Optional modules
- Molecular Structure Determination
- Separations Theory & Applications
- Advanced Spectroscopy
- Atomic Spectroscopy
- Advanced Techniques for Analytical Separations
- The Chemistry of Biomedical Imaging
- Advanced Techniques for Analytical Separations
- Drug Development
- Emerging Therapeutics in Immunology
- Advanced Topics in Biochemistry
- Studies in Advanced Biochemistry
- Medical Genetics
- Immunology
- Biotechnology
- Tropical Diseases

Genetics pathway:
- + Medical Microbiology
- + DNA Technology
- + Microbiological Techniques

Year 3
Core modules
- Molecular and Biochemical Parasitology
- Proteins: Structure, Function and Evolution

Optional modules
- Medical Microbiology
- Cell Biology Techniques
- Microbiological Techniques
- Practical Physiology

Genetics pathway:
- + Medical Microbiology
- + DNA Technology
- + Microbiological Techniques

Year 4
Only available to the Biochemistry pathway
- + Advanced MRI: Proteins, Solids and imaging
- + Advanced Topics in Biochemistry
- + Extended Research Project
- + Project Literature Review

Optional modules
- Bioinformatics
- Diseases of the Brain
- Drug Development (from concept to clinic)
- Emerging Therapeutics in Immunology
- Molecular Basis of Cancer

For Placement Year students
- + The core and optional modules described above for Year 3
- + Work Based Learning Reflection
Biomedical Science
BSc Hons

Institute of Biomedical Science (IBMS) Accredited degree
BSc Hons B990 (3 years)

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. In the third year you’ll focus even more on aspects of human disease by taking modules in Cancer, Medical Genetics and Pathobiology.

Our compulsory modules, which are at the heart of modern medical and health research, 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.

Year 1
Core modules
- Anatomy and Tissue Structure
- Biomedical Science in Practice
- Biomedicine and Society
- Biotechnology
- Cell Structure and Function
- Diagnosis in Biomedical Science
- Experimental Design and Data Analysis
- Genetics
- Hormones and Development
- Human Physiology
- Impact of Microbes
- Infection and Immunity
- Molecules of Life
- Protein Biochemistry
- Skills in Biomedical and Life Sciences

Optional modules
- Cell Cycle and Stem Cells
- Cell Signalling
- Cell Signalling, Transport and Disease
- Ethics in Biomedicine
- Genetics
- Ghana Global Health Programme (includes work experience)†
- Neurobiology
- Proteins: Structure, Function and Evolution
- Tropical Diseases
† Places allocated via competitive application

Year 2
Core modules
- Biochemistry
- Cell Biology
- Cellular Pathology
- Clinical Biochemistry
- Employability Skills
- Genetics
- Haematology and Transfusion Science
- Medical Microbiology
- Practical Physiology
- Research Project

Optional modules
- Cancer
- Clinical Immunology
- Environmental Pathogens
- Medical Genetics
- Pathobiology

Year 3
Core modules
- Cancer
- Clinical Immunology
- Environmental Pathogens
- Medical Genetics
- Pathobiology

Optional modules
- Cell Cycle and Stem Cells
- Cell Signalling
- Cell Signalling, Transport and Disease
- Ethics in Biomedicine
- Genetics
- Ghana Global Health Programme (includes work experience)†
- Neurobiology
- Proteins: Structure, Function and Evolution
- Tropical Diseases
† Places allocated via competitive application

Focusing on the key aspects of modern day biomedicine, this degree is for students that are interested in studying human life processes within the context of health and disease. It’s a highly-specialised programme and is taught jointly with clinical and biomedical staff from local hospitals. The course content is very structured, with the majority of modules being compulsory, and provides a thorough grounding in the theory and laboratory techniques associated with biomedical science.

You will be eligible to apply for a highly competitive placement within the NHS, and if successful, you will begin your placement following completion of your second year of studies, finishing at the end of August the following year. During this time you will complete a portfolio 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. Along with your degree studies this represents a core route to employment in the NHS as a Biomedical Scientist.

A levels
AAB to include Biology and either Chemistry, Mathematics or Physics

BTEC
DDD in Applied Science including sufficient Biology and Chemistry content

International Baccalaureate
35 points overall with 16 points from the best 3 Higher Level subjects including 6 in HL Biology and 6 in one further HL subject from Chemistry, Mathematics or Physics

An IBMS accredited degree with a clinical placement meets the requirements to register with the Health and Care Professions Council (HCPC). The IBMS is the professional body for those who work within the field of biomedical science.
Biomedicine
BSc and MSci Hons

BSc Hons C701 (3 years)
MSci Hons C703 (4 years)
BSc Hons (Study Abroad) C704 (3 years with Year 2 spent overseas at a partner university)
MSci Hons (Study Abroad) C705 (4 years with Year 2 spent overseas at a partner university)
BSc Hons (Placement Year) C708 (4 years with Year 3 spent on placement)

BSc Biomedicine (Study Abroad)/MSci Biomedicine/MSci Biomedicine (Study Abroad)
A levels
AA to include Biology and either Chemistry, Mathematics or Physics
BTEC
DDD in Applied Science including sufficient Biology and Chemistry content
International Baccalaureate
36 points overall with 16 points from the best 3 Higher Level subjects including 6 in HL Biology and 6 in one Further HL subject from Chemistry, Mathematics or Physics

*BTEC is only considered for entry to the BSc Hons Biomedicine variant. Subject to academic progression rules, students can transfer to the MSci Hons Biomedicine course

Similar to the Biomedical Science degree, this programme is for students that are interested in studying human life processes within the context of health and disease, but with more flexibility to tailor your second and third year module choices to suit your interests.

In your first year you’ll take 15 compulsory modules to ensure that you receive a thorough grounding in all 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.

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 modules.

Our MSci students undertake Masters-level modules in fourth year and complete an extended research project.

Optional modules
+ Biology of Ageing
+ Cell Signalling
+ Cell Signalling, Transport and Disease
+ Clinical Immunology
+ Environmental Pathogens
+ Ethics in Biomedicine
+ Ghana Global Health Programme (includes work experience)†
+ Genetics
+ Molecular and Biochemical Parasitology
+ Neurobiology
+ Pathobiology
+ Proteins: Structure, Function and Evolution
+ Tropical Diseases

Year 4
Core modules
+ Extended Research Project
+ Project Literature Review

Optional modules
+ Bioinformatics
+ Diseases of the Brain
+ Drug Development (from concept to clinic)
+ Emerging Therapeutics in Immunology
+ Microbes and Disease
+ Models of Disease
+ Molecular Basis of Cancer

For Placement Year students
+ The core and optional modules described above for Year 3
+ Work Based Learning Reflection
† Places allocated via competitive application. Not available for Study Abroad

BSc Biomedical Science/BSc Biomedicine/BSc Biomedicine (Placement Year)
A levels
AAB to include Biology and either Chemistry, Mathematics or Physics
BTEC
DDD in Applied Science including sufficient Biology and Chemistry content
International Baccalaureate
35 points overall with 16 points from the best 3 Higher Level subjects including 6 in HL Biology and 6 in one Further HL subject from Chemistry, Mathematics or Physics

Similar to the Biomedical Science degree, this programme is for students that are interested in studying human life processes within the context of health and disease, but with more flexibility to tailor your second and third year module choices to suit your interests.

In your first year you’ll take 15 compulsory modules to ensure that you receive a thorough grounding in all 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.

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 modules.

Our MSci students undertake Masters-level modules in fourth year and complete an extended research project.

Year 1
Core modules
+ Anatomy and Tissue Structure
+ Biomedical Science in Practice
+ Biomedicine and Society
+ Biotechnolgy
+ Cell Structure and Function
+ Diagnosis in Biomedical Science
+ Experimental Design and Data Analysis
+ Genetics
+ Hormones and Development
+ Human Physiology
+ Impact of Microbes
+ Infection and Immunity
+ Molecules of Life
+ Protein Biochemistry
+ Skills in Biomedical and Life Sciences
+ Placement Preparation (Placement Year only)

Year 2
Core modules
+ Biochemistry
+ Cell Biology
+ Employability Skills
+ Genetics
+ Medical Microbiology
+ Research Project
+ Work Based Learning Preparation (Placement Year only)

Optional modules
+ Biochemical Techniques
+ Bioinformatics
+ Cell Biology Techniques
+ Cellular Pathology
+ Clinical Biochemistry
+ DNA Technology
+ Haematology and Transfusion Science
+ Microbiological Techniques
+ Practical Physiology

Year 3
Core modules
+ Cancer
+ Medical Genetics

Optional modules
+ Biology of Ageing
+ Cell Signalling
+ Cell Signalling, Transport and Disease
+ Clinical Immunology
+ Environmental Pathogens
+ Ethics in Biomedicine
+ Ghana Global Health Programme (includes work experience)†
+ Genetics
+ Molecular and Biochemical Parasitology
+ Neurobiology
+ Pathobiology
+ Proteins: Structure, Function and Evolution
+ Tropical Diseases

Year 4
Core modules
+ Extended Research Project
+ Project Literature Review

Optional modules
+ Bioinformatics
+ Diseases of the Brain
+ Drug Development (from concept to clinic)
+ Emerging Therapeutics in Immunology
+ Microbes and Disease
+ Models of Disease
+ Molecular Basis of Cancer

For Placement Year students
+ The core and optional modules described above for Year 3
+ Work Based Learning Reflection
† Places allocated via competitive application. Not available for Study Abroad

Year 1
Core modules
+ Anatomy and Tissue Structure
+ Biomedical Science in Practice
+ Biomedicine and Society
+ Biotechnolgy
+ Cell Structure and Function
+ Diagnosis in Biomedical Science
+ Experimental Design and Data Analysis
+ Genetics
+ Hormones and Development
+ Human Physiology
+ Impact of Microbes
+ Infection and Immunity
+ Molecules of Life
+ Protein Biochemistry
+ Skills in Biomedical and Life Sciences
+ Placement Preparation (Placement Year only)

Year 2
Core modules
+ Biochemistry
+ Cell Biology
+ Employability Skills
+ Genetics
+ Medical Microbiology
+ Research Project
+ Work Based Learning Preparation (Placement Year only)

Optional modules
+ Biochemical Techniques
+ Bioinformatics
+ Cell Biology Techniques
+ Cellular Pathology
+ Clinical Biochemistry
+ DNA Technology
+ Haematology and Transfusion Science
+ Microbiological Techniques
+ Practical Physiology

Year 3
Core modules
+ Cancer
+ Medical Genetics

Optional modules
+ Biology of Ageing
+ Cell Signalling
+ Cell Signalling, Transport and Disease
+ Clinical Immunology
+ Environmental Pathogens
+ Ethics in Biomedicine
+ Ghana Global Health Programme (includes work experience)†
+ Genetics
+ Molecular and Biochemical Parasitology
+ Neurobiology
+ Pathobiology
+ Proteins: Structure, Function and Evolution
+ Tropical Diseases

Year 4
Core modules
+ Extended Research Project
+ Project Literature Review

Optional modules
+ Bioinformatics
+ Diseases of the Brain
+ Drug Development (from concept to clinic)
+ Emerging Therapeutics in Immunology
+ Microbes and Disease
+ Models of Disease
+ Molecular Basis of Cancer

For Placement Year students
+ The core and optional modules described above for Year 3
+ Work Based Learning Reflection
† Places allocated via competitive application. Not available for Study Abroad
Ecology and Conservation
BSc and MSci Hons

BSc Hons C180 (3 years)
BSc Hons (Study Abroad) C182 (3 years with Year 2 spent overseas at a partner university)
MSci Hons (Professional Experience) OX48 (4 years with a 10 week placement in Year 4)
BSc Hons (Placement Year) C181 (4 years with Year 3 spent on placement)

BSc Ecology and Conservation/ BSc Ecology and Conservation (Placement Year)
A levels
ABB to include two science subjects
BTEC DDM
International Baccalaureate
32 points overall with 16 points from the best 3 Higher Level Subjects
including two science subjects at HL grade 6

BSc Ecology and Conservation (Study Abroad)/ MSci Ecology and Conservation (Professional Experience)
A levels
ABB to include two science subjects
BTEC DD
International Baccalaureate
35 points overall with 16 points from the best 3 Higher Level Subjects
including two science subjects at HL grade 6

MMust include sufficient science and we require Distinctions in the majority of relevant science units. Please contact the Admissions Team for further advice.

Learn how organisms interact with each other and their environment, and discover the impact of human activity in a series of exciting field-based and lab-taught modules. Our renowned researchers deliver an exceptional training programme that provides a thorough grounding in ecological theory and practice, combining lectures, practicals, fieldwork and small-group tutorials. You will gain a deep understanding and hands-on experience of how these principles are applied in the study and conservation of species and the ecosystems in which they live.

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. Specialisation from the second year onwards allows you to choose topics that match your interests. The wide selection of modules will equip you with a range of ecology, conservation biology and practical skills. In third year, you will carry out an independent research project.

Our MSci degrees offer Masters-level modules in the fourth year along with an extended research project. The Professional Experience variant includes a 10 week placement with a graduate employer.

Throughout your degree, you will have the opportunity to experience a range of exciting fieldwork modules and residential courses. You will explore the Doñana National Park in the southwest of Spain, which is home to a plethora of plant, bird and animal species; you can visit some of the UK’s last remaining natural habitats in rural Scotland, and witness a range of animals including red deer, osprey and golden eagles; contribute to an expert-led study of the Rift Valley of Kenya, where you will evaluate the challenging balance between tropical conservation and human activity; explore the conservation and development challenges facing tropical forests in the Brazilian Amazon; or gain an in-depth understanding of alpine environments in Switzerland.

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
• Placement Preparation (Placement Year only)

Optional modules
• Numerical Skills I
• You may select up to 5 modules from another subject

Year 2
Core modules
• Experimental Design and Analysis
• Field Biology
• Populations to Ecosystems
• Principles of Biodiversity Conservation
• Research Design and Delivery
• Work Based Learning Preparation (Placement Year only)

Optional modules
• Environmental Physiology
• Evolution
• Genetics
• Interacting Landscapes: Biogeography and Geomorphology
• Introduction to Eco-Innovation
• Soil Science
• Spatial Analysis and Geographic Information
• Vertebrate Biology

Year 3
Core modules
• Dissertation OR Dissertation with Work Placement*

Optional modules
• Alpine Environmental Processes Field Course
• Animal Behaviour
• Climate and Society
• Conservation and Sustainable Development in the Brazilian Amazon (Amazon Field Course)
• Coral Reef Ecology
• Environment, Politics and Society in Amazonia
• Environmental Plant Biology
• Environmental Remote Sensing and Image Processing
• Food and Agriculture in the 21st Century
• 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 (Kenya Field Course)
• Water Resources Management

Year 4
For Placement Year students
• The cores and optional modules described above for Year 3
• Work Based Learning Reflection

For Professional Experience students
Core modules
• Professional Experience Dissertation
• Professional Experience Placement

Optional modules
• Conservation Biology
• Contaminated Land and Remediation
• Data Assimilation and Integration
• Ecology: Conservation and Culture
• Environmental Aspects of Renewable Energy
• Habitat Management
• Sustainable Soil Management
• Using the NVC

1 Depending on whether you have GCSE Mathematics grade A/7 or above, you will be required to take a numerical skills module in order to ensure you have the necessary knowledge to succeed in year two and beyond.

* Dissertation with Work Placement available to C180 and OX48 students only.
Zoology
BSc Hons

BSc Hons C300 (3 years)
BSc Hons (Study Abroad) C303 (3 years with Year 2 spent overseas at a partner university)
BSc Hons (Placement Year) C302 (4 years with Year 3 spent on placement)

BSc Zoology/ BSc Zoology (Placement Year)
A levels
AAB to include two science subjects
BTEC
DDD1
International Baccalaureate
35 points overall with 16 points from the best 3 Higher Level subjects including two science subjects at HL grade 6

BSc Zoology (Study Abroad)
A levels
AAA to include two science subjects
BTEC
DDD
International Baccalaureate
36 points overall with 16 points from the best 3 Higher Level subjects including two science subjects at HL grade 6

1 Must include sufficient science and we require Distinctions in the majority of relevant science units. Please contact the Admissions Team for further advice.

Our Zoology degree covers a broad range of topics relevant to the study of animal biology. You will learn about taxonomy and the diversity of animal life, cellular processes and physiology, animal behaviour, through to evolution, ecology and conservation. The degree is flexible, allowing you to focus on the topics that interest you the most.

The first year of the degree provides a broad foundation, with additional options for study either in other areas of biology or in different subjects. Year two includes modules in evolution and vertebrate biology, as well as core skills modules introducing you to research techniques in both the laboratory and the field. Year two options range from cell biology to conservation. In year three, you will take a core module in animal behaviour and complete your own independent research project. There are a wide range of specialist options, including Neurobiology, Coral Reef Ecology and Host-Parasite Interactions.

Throughout your degree, you will have the opportunity to experience a range of exciting fieldwork modules and residential courses. You will explore the Doñana National Park in the southwest of Spain, which is home to a plethora of plant, bird and animal species; you can visit some of the UK’s last remaining natural habitats in rural Scotland, and witness a range of animals including red deer, osprey and golden eagles; or contribute to an expert-led study of the Rift Valley of Kenya, where you will evaluate the challenging balance between tropical conservation and human activity.

During your research project, you will benefit from the experience of our internationally-renowned academic staff, and there are additional opportunities to carry out your project with a commercial partner through our Enterprise and Business Partnerships team.

Year 1
Core modules
- Anatomy and Tissue Structure
- Biodiversity and Conservation
- Cell Structure and Function
- Developmental Biology
- Evolutionary Biology
- Genetics
- Infection and Immunity
- Hormones and Development OR Spanish-Doñana Field Course
- Marine and Estuarine Biology
- Zoology
- Placement Preparation (Placement Year only)

Optional modules
- You may select up to 5 modules from another subject

Year 2
Core modules
- Evolution
- Experimental Design and Analysis
- Field Biology
- Research Design and Delivery
- Vertebrate Biology
- Work Based Learning Preparation (Placement Year only)

Optional modules
- Cell Biology
- Cell Biology Techniques
- DNA Technology
- Environmental Physiology
- Genetics
- Populations to Ecosystems
- Principles of Biodiversity Conservation

Year 3
Core modules
- Animal Behaviour
- Dissertation

Optional modules
- Biology of Ageing
- Cell Cycle and Stem Cells
- Cell Signalling, Transport and Disease
- Coral Reef Ecology
- Environmental Plant Biology
- Genetics
- Global Change Biology: Challenges and Solutions
- Host-Parasite Interactions
- Innovation in the Biosciences
- Issues in Conservation Biology
- Neurobiology
- Scotland Field Course
- Sustainable Agriculture
- Tropical Diseases
- Tropical Biology and Conservation (Kenya Field Course)

Year 4
For Placement Year students
- The core and optional modules described above for Year 3
- Work Based Learning Reflection

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Disclaimer

The information provided in this brochure is correct at the time of publication (June 2019) but this may be subject to change as we constantly review and update our degree programmes. This brochure does not guarantee the availability of any module and does not form part of any contract between any person and Lancaster University.

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