

Undergraduate programmes in

- Biochemistry
- Human Biology
- Biological Sciences



From molecules and cells to organisms and their environment, Biosciences is an exciting area to study and is contributing to major advances related, for example, to human and environmental health, medicine and food security.

*Professor Steve Busby
Head of School of Biosciences*

Challenge what you know.

Welcome to Biosciences

Pursuing a career in Biosciences offers huge excitement and excellent employment potential. The life sciences are in the midst of a revolution, with new technologies dramatically advancing our understanding of biological systems, and promising tremendous benefits to the society at large, for instance, in the areas of health care and the environment.

The School of Biosciences encompasses research and teaching across the whole spectrum of biology: from molecules and cells to organisms and environments. Our research guides and inspires our teaching programmes, taking you on a journey to the boundaries of our current knowledge of biology. Some of the research highlights in the School include research into cancer and infectious disease, such as tuberculosis, or exploring how Orangutans move and behave. We incorporate new areas of science relating to biology, such as bioinformatics, and the School has major high-technology facilities for research in genomics, structural biology and optical imaging. You may have the opportunity to use these facilities during your final year project.

Topics that you will encounter on our courses range from studies on the three-dimensional structure of individual biological molecules through to the study of whole ecosystems. We pride ourselves in our 'enquiry-based learning' strategy that equips our graduates with the skills to achieve full potential in future careers. Specialist field courses for those involved in the study of animals, plants and ecological aspects are also available. You also have the opportunity to study part of the time abroad or in industry. Furthermore, some students will decide to stay for a total of four years and achieve an Undergraduate Masters degree, enhancing employment prospects and research experience even more.

Dr Klaus Fütterer Admissions Tutor

I joined the School of Biosciences in 2000, following an academic education in Germany and postdoctoral research training in the United States. With a background in physics, my research is focused on explaining biological phenomena in terms of the molecules that make up living organisms.

My laboratory uses X-ray crystallography to obtain 3D images of proteins at atomic resolution, helping us understand how they work. In my teaching, I am keen to lead students to independence and self-directed learning, fostering analytical thinking and developing a strong base of subject-specific and transferable skills.



We have consistently obtained top ratings from the Quality Assurance Agency for Higher Education (QAA), including the most recent audit in 2009. In March 2012, our MSci Biochemistry programme has been accredited by the Society of Biology, affirming that we provide students with the high-level skills, knowledge and understanding needed to pursue further scientific and professional careers.

In joining us you will find a supportive and inspiring environment for your studies. We look forward to welcoming you to our School, perhaps at one of the upcoming Open Days (www.birmingham.ac.uk/opensdays)

Professor Steve Busby
Head of School of Biosciences

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www.birmingham.ac.uk/biosciences



How to apply

Applications for all of our programmes should be made through UCAS. The details of the UCAS course codes and entry requirements for each of the programmes we offer can be found in the appropriate sections of this booklet. The institution code for the University of Birmingham is B32.

Visit the School of Biosciences

If we make you an offer, you will be invited to visit the School of Biosciences. This is not an interview but an opportunity for you to meet with staff and students, and to discuss the programmes and visit research and teaching facilities.

Which programmes should I apply for?

The Biochemistry, Biological Sciences, and Human Biology programmes are distinct from each other. You will need to make a separate entry on your UCAS form for each programme you are interested in. It is not necessary to apply separately for specialisations within each degree programme. You can change between programmes during the first year, although conditions may vary depending on the timing of a transfer.

Four-year degree programmes

Many of our degree programmes offer you the opportunity to add value through an extra year, for instance through a placement year. If you are considering any of our four-year options you should apply through UCAS for this at the outset. You will retain the flexibility of switching your registration during Year Two to one of our three-year degree programmes.

Subjects required

These are different for each degree programme and specific information can be found in the relevant sections of this booklet. General Studies or Critical Thinking are excluded from the offer.

Biochemistry degrees

What is biochemistry?

Biochemistry is the study of life at the molecular level.

Biochemistry deals with the whole range of living organisms from the simplest to the most complex and explores how they work at the molecular level. It provides an understanding of what living organisms contain; how cells function and communicate; how cells utilise building materials and energy for growth, perform catalysis, store and transmit genetic information, and how metabolism is co-ordinated and regulated.

Biochemistry is a key player in modern biomedical research and the biotechnology industry. The unveiling of the human genome offers unparalleled opportunities for research into life itself and its enhancement by the diagnosis, prevention and treatment of disease. To date, biochemistry has proved crucial to advances in medicine, such as enhanced drug design and gene therapy. It is also vital to the development of agriculture, the processing of foodstuffs, and the prevention or eradication of environmental pollution.

Our biochemistry degrees attract students with diverse interests and are designed to provide a sound knowledge base in biochemistry, with considerable scope for specialisation in the areas of greatest personal interest and challenge for each student. Our graduates successfully enter diverse sectors of the job market within and beyond the science sector. They are equipped with the knowledge and skills to advance to careers in research, further training for specialisation or conversion into different areas, or to enter employment directly, including a growing range of graduate jobs.

'A unique combination of two disciplines, Biochemistry provides the molecular insights into disease, giving great potential for future drug development!'

Bevan
Biochemistry student

Biochemistry degrees

Our programmes enable every student to acquire a firm grounding in biochemistry and to specialise in several aspects of the subject. Our programme structure allows you to delay your ultimate choice of specialisation until the second year and to switch between areas of biological, medical or biotechnological science as your interests change.

All programmes provide students with an opportunity to experience research first-hand and to acquire training and transferable skills for employment within and beyond biosciences.

Three-year BSc degrees

- Biochemistry C700
- Medical Biochemistry C720
- Biochemistry with Biotechnology C700
- Biochemistry with Molecular Cell Biology C700
- Biochemistry (Genetics) CC74

Four-year programme options

- BSc Biochemistry with Study in Continental Europe C701
- BSc Biochemistry with Professional Placement C702
- Undergraduate Masters in Biochemistry C703

Entry requirements for Biochemistry degree programmes

Typical offers

C703 MSci Biochemistry AAB
C702 Biochemistry with Professional Placement AAB
Other Biochemistry programmes ABB

Subjects required

Two science subjects at grades BB minimum, normally including Chemistry and one other from Biology, Psychology, Physics, Mathematics, Geography, Geology and Sport Science.

GCSE English, Mathematics and Biology (or double Integrated Science) are required at grade C minimum if not offered at AS or A Level.

International Baccalaureate Diploma:

32–34 points including Chemistry and one other science at HL.

Access, EB and other qualifications are considered.

Biochemistry with Study in Continental Europe.

A GCSE at grade B minimum in an appropriate modern language.

If you have a language at AS or A Level this would be beneficial.



Biochemistry modules year by year



Frank Michelangeli,
Head of the Biochemistry
Programmes

I have been a lecturer in biochemistry at Birmingham for nearly 20 years, I teach a wide range of biochemical topics, which include: membranes, enzymes, metabolism, cellular signalling and biochemical pharmacology/toxicology. My research interests are focused on the regulation of Ca²⁺ signalling processes within cells and more specifically on how Ca²⁺ transport proteins are regulated or dysregulated in health and disease. I am on the editorial board of several biochemical journals and am also an executive director of The Biochemical Society.

Our programmes are modular with a wide range of options in the latter stages of the degree. These choices build on the core knowledge and skills developed through Years One and Two. We aim to ensure that all our students leave Birmingham with highly developed written, oral and IT skills, and the ability to work and communicate effectively with others. Last not least we are proud to have been awarded **Accreditation by the Society of Biology** for our MSci Biochemistry programme, which encompasses all elements of the corresponding BSc course.

First year

All biochemistry students take the same first year modules including: Biochemistry, Cell Biology and Physiology and Genetics. One of the key aspects of the course in Birmingham is that you will be taught honours level Chemistry in your first 2 years. This allows you to keep both your Biology and your Chemistry strong as you progress through the programme.

Students choosing our degree option with Study in Continental Europe will take language modules.

Second year

At this more advanced level, you complete the core of essential training in Biochemistry

and you begin to specialise. If you know which area of Biochemistry you want to specialise in from the outset you can choose one of our specialist pathways outlined here.

For detailed information showing the modules specific to each pathway see our web pages: www.birmingham.ac.uk/c700

Final year

This is the year of specialisation as you devote most of your time to specialist modules. No matter which Biochemistry degree you choose

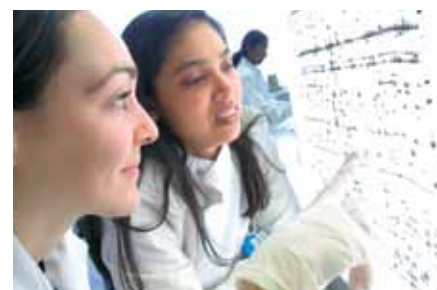
First year
Genetics I
Cell Biology and Physiology
Biochemistry
Enzymes and Metabolism
Physical Biochemistry
Chemistry
Skills for Biosciences

Second year
Core modules
Proteins and Enzymes
Membranes, Energy and Metabolism
Molecular Biology and its Applications
Chemistry
Communications and Skills in Biosciences
Optional modules choose 2 from:
Cell and Developmental Biology
Topics in Medical Biosciences
Genetics II
Microbes and Man

there will always be a wide choice of final-year modules. These modules present different aspects of biochemistry and illustrate the relationships between these and their applications to industry and medicine. In addition, all students take a module covering key aspects of Biochemistry.

You undertake a project selected from a very broad range offered by the staff according to ongoing research activities. You may opt for a laboratory project or a two-part project involving laboratory and library research or a library project alone or a computing project. Most students enjoy project work as a highlight of their academic training and experience.

Final year
Core modules
Project
Experimental Design, Analysis and Interpretation of Biochemical Data
Optional modules choose 3 from:
Structures of Destruction
Bacterial Gene Regulation
Cellular Signalling
Mechanisms of Toxicity and Disease
Cancer Biology
Molecular and Cellular Immunology
Molecular Basis of Bacterial Infection
Genetic Variation in Humans and other Eukaryotes
Applied and Environmental Microbiology
Cellular Neurobiology
Eukaryotic Gene Expression



'The Society of Biology's Accreditation Programme will signpost students to the degree courses recognised by industry as providing the essential scientific and practical skills needed for a career in life sciences.'

David Willetts, MP
Minister for Universities and Science

Specialisations within the Biochemistry Programme

Biochemistry C700

Keep your options open or follow your special interests. Nearly every week there is a news item in the media highlighting a major breakthrough or advancement in biochemical sciences. Examples include the elucidation of the human genome, cellular cloning and stem cell research.

In common with all the students on Biochemistry programmes, you will take a broad first year giving you a sound grounding in biochemistry. You then have a free choice from the second and third-year options allowing you to follow your own interests. You may follow a path similar to one of those outlined for the specialisations below, or keep your studies broad and obtain a degree in Biochemistry. Students graduating from all of our Biochemistry programmes gain the transferable skills and practical experiences that are particularly attractive to employers.

Medical Biochemistry C720

With the decoding of the human genome, the possibility of personalised medicine has come into focus. From identification of mutations responsible for genetic diseases will come a better understanding of what has gone wrong, leading ultimately to better strategies for treatment.

After a common first year for all Biochemistry undergraduates, students undertaking Medical Biochemistry will study a variety of biomedically related topics such as immunology, human physiology, biochemical pharmacology, molecular endocrinology and neurobiology. In the final year, students will undertake modules that reflect recent advances in biomedical sciences,

which include Mechanisms of Toxicity and Human Disease Processes; Cellular Signalling; Cancer Biology and Molecular and Cellular Immunology

Biochemistry (Genetics) CC74

Genetics is central to all areas of Biochemistry from cellular differentiation and development, through reproduction and disease to genetic engineering.

Today's Geneticists are striving to understand how the multitude of genes in an individual's genome work together through complex networks to direct life's processes. Discoveries in genetics are having a major impact on society, ranging from the prospect for breakthroughs in the treatment of disease and the understanding of individual differences emerging from the Human Genome Project, to improvements in food production through genetic engineering.

The Biochemistry (Genetics) Programme is structured to give you a comprehensive introduction to modern genetics, the first year genetics module covers DNA structure and function, information flow, gene regulation and the genetics of bacteria and higher organisms. In the second year you will study the basis by which genetic variation arises and is transmitted from generation to generation. You will also look at the organisation, structure and dynamic nature of genomes, as well as advanced topics in gene regulation in both bacteria and higher organisms, including man. The final year allows choice from a range of specialised topics in genetics and gives the opportunity to carry out a piece of genetical research.

Biochemistry with Biotechnology C700

One of the most exciting challenges facing us today is how to exploit the rapid developments in biological sciences for the benefit of society. We now understand the molecular basis of many diseases, how to minimise pollution from industrial processes, how to prevent environmental problems arising from inadequate treatment of waste, and improve methods of food production. These developments, together with rational drug

design, clean chemistry based upon biochemical reactions, and aquaculture, are all different facets of modern biotechnology.

Biochemistry with Molecular Cell Biology C700

The sequencing of the human genome is merely the discovery of a coded map. It tells us what is there, but what it does not do is tell us what the molecules encoded by these genes do. It does not tell us how the presence of one gene predisposes us to develop heart disease or how the absence of another leads to cancer. Our degree in Biochemistry with Molecular Cell Biology explores how these molecules work collectively to control the functions of the individual cells that together comprise a living organism. It is this knowledge that will allow us to exploit the information derived from the sequencing of the genome to drive forward advances in modern medicine.

Graduate with a Masters degree

The Undergraduate Masters in Biochemistry offers you something extra; you will graduate after 4 years with an MSci having undertaken a year of advanced research training in addition to the taught elements of the programme. The 4th year is natural progression from the teaching you will experience in your first 3 years which is informed by the research carried out in the School. See page 13 for more details.

Work experience while doing your degree

Gain experience of the world of work and an understanding of how biochemistry is practised in the workplace.

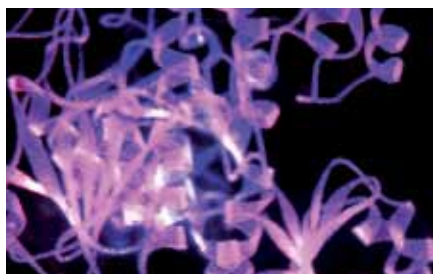
We offer you the opportunity as part of our Professional Placement Programme to gain a year's work experience while studying for your degree in Biochemistry. See page 14 for more details.

A year abroad while doing your degree

Develop your language skills while doing your degree. We offer you the opportunity to study in continental Europe while doing your degree in Biochemistry. See page 15 for more details.

'The modules were taught by expert members of staff involved in the research field, which I found very interesting and stimulating.'

Nora, Biochemistry graduate



Human Biology degrees

The School of Biosciences delivers teaching and research of the highest quality.



Dr Roland Brandstaetter, Head of the Zoology Degree Label and the Human Biology Programme

I graduated from the University of Salzburg in Austria and gained experience in research and teaching at 2 Max-Planck-Institutes and six European Universities. I joined the University of Birmingham in 2003.

My research concentrations include neurobiology of complex natural behaviour and circadian biology in a wide range of animal species, including humans.

As Head of the Zoology Degree Label and the Human Biology Programme, it is my aim to provide students with a balanced and comprehensive education that includes traditional and modern aspects of biology. I teach a wide range of biological topics in all three undergraduate years and offer undergraduate and postgraduate projects ranging from Animal Phylogeny to Neurobiology and Chronobiology. The encompassing theme of my teaching is 'the whole organism as an integrated system'.

Human biology is crucial to the continual development of fields of medicine, sports science, nutrition, fertility and many other areas. In addition human biologists play important roles in informing international political debate on moral and ethical issues, such as the means of achieving sustainable world development or reducing mankind's destructive effects upon the ecosystem.

This programme promotes the development of a broad understanding of biological principles and the skills to place this understanding in the context of the human condition. The first year includes modules covering cell

biology, physiology, human biochemistry, and reproduction. In year 2, and more so in the final year, you will be able to tailor your degree to your own interests by selecting from a variety of modules reflecting different aspects of human biology.

Three-year BSc degree

- Human Biology C103

Four-year degree options

- BSc Human Biology with Professional Placement C104
- Undergraduate Masters in Human Biology C106

Entry requirements for Biochemistry degree programmes

Typical offer

C106 MSci Human Biology AAB
C104 BSc Human Biology with Professional Placement AAB
C103 BSc Human Biology ABB

Subjects required

Biology or Human Biology and one other science subject at grades BB from Chemistry, Psychology, Physics, Mathematics, Geography, Geology and Sport Science.
GCSE Chemistry grade B (or Double Integrated Science) and English and Mathematics grade C minimum if not offered at AS or A Level.
International Baccalaureate Diploma:
32–34 points including Biology and one other science at HL;
Chemistry is normally required at HL or SL.
Access, EB and other qualifications are considered.

'I chose human biology because I really felt that I wanted to specialise after previously studying a wide spectrum of topics at A level. I have thoroughly enjoyed my first year; it is hard work but very rewarding.'

Beth, first year student



Human Biology modules year by year

The flexible modular structure allows you to determine the flavour of your degree in Human Biology. You take a mixture of core and optional modules.

First year

In the first year you study core areas of biology that are designed to give a broad and balanced view of modern biology. These core studies include a specialist module for the human biology students, which includes aspects of human biochemistry, nutrition and clinical case studies.

Second year

In the second year you will take core courses in Human Evolution, Adaptation and Behaviour and Molecular Biology and its Applications. You will be able to choose optional modules allowing you to specialise in aspects such as Topics in Medical Biosciences, Genetics, Cell Biology, Microbes and Man and Developmental Biology.

'Birmingham is a friendly campus and one of the only Universities to offer a specialised Human Biology course. The course covers a wide range of topics from the cell to animal behaviour.'

Eleanor
Human Biology student

Final year

The final year is made up of a mixture of taught modules and independent study. It is here that the link between the teaching and the research in the School is particularly important. The final year modules are informed by the research being carried out in the School. Projects offered to final year students are closely linked with this research; most students opting to do a laboratory project will work in one of the research laboratories alongside the graduate students.

Graduate with a Masters degree

The Undergraduate Masters in Human Biology offers you something extra; you will graduate after 4 years with an MSci having undertaken a year of advanced research training in addition to the taught elements of the course. The 4th year is natural progression from the teaching you will experience in your first 3 years which is informed by the research carried out in the School. See page 24 for more details.

Work experience while doing your degree

Gain experience of the world of work and an understanding of how Human Biology is practiced in the workplace.

We offer you the opportunity as part of our Professional Placement Programme to gain a year's work experience while studying for your degree in Human Biology. See page 14 for more details.



Careers for Human Biologists

See page 17 for details of career opportunities for Bioscience graduates.

First year

Genetics I
Cell Biology and Physiology
Biochemistry
Human Biochemistry
Microbiology and Infectious Disease
Introduction to Evolution and Animal Biology
Skills for Biosciences

Second year

Core modules

Molecular Biology and its Applications
Human Evolution, Adaptation and Behaviour
Communication and Skills in Biosciences

Optional modules choose 4 from:

Genetics II
Cell and Developmental Biology
Microbes and Man
Topics in Medical Biosciences
Animal Sensory Systems, Neurobiology and Behaviour
Membranes, Energy and Metabolism

Final year

Project

Optional modules choose 4 from:

Human Reproductive Biology and Development
Human Evolution
Cancer Biology
Mechanisms of Toxicity and Disease
Molecular Basis of Bacterial Infection
Molecular and Cellular Immunology
Cellular Neurobiology
Genetic Variation in Humans and other Eukaryotes
Cellular Signalling
Eukaryotic Gene Expression
Advanced Topics in Animal Behaviour
Whole-Organism Biology
Applied and Environmental Microbiology



Biological Sciences degrees

Biology, the study of life, is a diverse discipline, relevant to all areas of modern life. Recent advances in Biology are shaping our understanding of issues ranging from human health to predicting the effects of environmental factors, such as global warming.



Dr Julia Lodge
Head of the Biological Sciences programmes

I graduated from Southampton University with a degree in Biology and started to specialise in microbiology during my PhD. My research has focused on bacteria which cause diseases in humans, most recently looking at how *Salmonella* invade gut tissue.

I teach microbiology, focusing on bacteria and their role in human health and disease and will teach you in all 3 years if you decide to choose microbiology modules. I am also interested in molecular genetics; I teach about human genetic diseases and gene cloning and – with two of my colleagues – have written a text book on gene cloning.

One of my other interests is in innovative teaching methods designed to enhance the experience of learning for students and in particular in improving the quality of the feedback that students receive on their work.

As a tutor I will be here to help you settle into the new learning environment of the university. As the organiser of the first year Skills module you will meet me in your very first practical classes.

We offer a course which provides insight into the range and depth of topics that make up modern biology, spanning the four levels of the biological hierarchy of molecules, cells, organisms and ecosystems.

Teaching is delivered in a student-centred and research-led environment. The programme is modular, giving you a lot of flexibility, and teaching is delivered by internationally recognised staff in a wide variety of ways, from lectures, seminars, practicals and field courses to enquiry-based learning and directed independent work. Our biology degree is ideally suited to students who want to follow a broad-based biology course or who want to decide on an area of biological specialisation as their interests develop.

Our tutorial system supports delivery of core knowledge and skills, in addition

to providing important welfare and careers support.

Three-year BSc degrees

- Biological Sciences C100

The following specialisms are available:

- Zoology C300
- Genetics C400
- Microbiology C100
- Biotechnology C100
- Plant Biology C100
- Environmental Biology C100

Four-year degree options

- BSc Biological Sciences with Study in Continental Europe C101
- BSc Biological Sciences with Professional Placement C102
- Undergraduate Masters in Biological Sciences C105

Entry requirements for Biological Sciences degree programmes

Typical offer

C105 MSci Biological Sciences AAB
C102 Biological Sciences with Professional Placement AAB
All other Biological Sciences Programmes ABB

Subjects required

Biology or Human Biology and one other science subject at grades BB from Chemistry, Psychology, Physics, Mathematics, Geography, Geology and Sport Science.

GCSE English, Mathematics and Chemistry (or Double Integrated Science) are required at grade C minimum if not offered at AS or A Level.

Biological Sciences with Study in Continental Europe
A GCSE at grade B minimum in an appropriate modern language. If you have a language at AS or A Level so much the better.

International Baccalaureate Diploma: 32–34 points including Biology and one other science at HL
Access, EB and other qualifications are considered

'In the first year you get a taste of all areas of biology. I found this motivated me to study areas I had not previously considered.'

Alison, Biological Sciences graduate



Biological Sciences modules year by year

The modular structure of our degree programmes allows great flexibility and delayed choice of precise degree content, whilst at the same time providing a thorough grounding in the core areas of biology. You can select one of the six specialised areas represented by the degree labels when you apply, or leave any final decision on specialisation to the end of the second year of the programme. This allows you to study more widely before making a choice, and may result in a decision not to specialise at all but to retain a wide spectrum of interests.

First year

All students take the same modules whether or not they have selected one of the specialised degree programmes. These are designed to give an integrated view of modern biology.

For students choosing our degree option 'with Study in Continental Europe' the language module will replace one of the Biosciences modules.

Second year

The second year of the Biology programme is flexible; you have a core skills module and will study gene cloning and its applications across biology. You will be able to choose 5 optional modules so that you can follow your own interests; your personal tutor will advise you about combinations of modules which will work well for you. If you are interested in studying organisms and how they interact with their environment you will also have the opportunity to take part in a field course. If you want to follow one of the specialist degree labels you will find a second year module tailored to your interests.



Final year

The final year combines taught modules with project work, both promoting and requiring independent study. It is here that the link between the teaching and the research in the school is particularly important. The final year modules are informed by the research being carried out in the school. Projects offered to final year students are closely linked to the research and most students opting to do a laboratory project will work in one of the research laboratories alongside the graduate students.

Graduate with a Masters degree

The Undergraduate Masters in Biological Sciences offers you something extra; you will graduate after 4 years with an MSci having undertaken a year of advanced research training in addition to the taught elements of the course. The 4th year is natural progression from the teaching you will experience in your first 3 years which is informed by the research carried out in the School.

Work experience while doing your degree

Gain experience of the world of work and an understanding of how biology is practiced in the workplace. See page 13 for more details.

We offer you the opportunity as part of our Professional Placement Programme to gain a year's work experience while studying for your degree in Biological Sciences. See page 14 for more details.

A year abroad while doing your degree

Develop your language skills while doing your degree. We offer you the opportunity to study in continental Europe while doing your degree in Biological Sciences. See page 15 for more details.

'One of the most enjoyable and satisfying aspects of my job is integrating cutting edge research with undergraduate education. This takes the form of both including new data from my own lab into lectures, as well as working with undergraduate students on their research projects.'

Joshua Z Rappoport
Lecturer in Molecular Cell Biology

First year

Genetics I
Cell Biology and Physiology
Biochemistry
Microbiology and Infectious Disease
Plant Sciences and Environmental Biology
Introduction to Evolution and Animal Biology
Skills for Biosciences

Second year

Core modules

Molecular Biology and its Applications
Communications and Skills in Biosciences

Optional modules choose 4 from:

Genetics II
Cell and Developmental Biology
Microbes and Man
Animal Sensory Systems, Neurobiology and Behaviour
Ecology
Plant Sciences: from cells to the environment
Human Evolution, Adaptation and Behaviour

Field courses

Biodiversity Assessment Techniques (Shropshire)
Urban Ecology in Birmingham
Adaptations to Aquatic Environments (Orielton, Pembrookshire)
Alpine and Glacial Ecology (Norway)

Final year

Project (includes field course opportunities)

Optional Modules choose 4 from:

Conservation Biology
Human Evolution
Adaptation to Changing Environments
Advanced Topics in Animal Behaviour
Whole-Organism Biology
Applied and Environmental Microbiology
Molecular Basis of Bacterial Infection
Structures of Destruction
Bacterial Gene Regulation
Eukaryotic Gene Expression
Genetic Variation in Humans and Other Eukaryotes
Cellular Neurobiology
Human Reproductive Biology and Development
Cancer Biology
Molecular and Cellular Immunology

Hear from one of our students by watching this short film:



Specialisations within the Biological Sciences programme

BSc Biological Sciences C100

Biology is the science of life. Learn about animals, plants and microorganisms, from their genes and cells to how they interact in the environment.

In common with all the students on Biological Sciences programmes you will take a broad first year giving you a solid foundation in modern biology. You then have a choice of second and third-year options allowing you to follow your own interests.

BSc Biological Sciences (Zoology) C300

Zoology is the study of animal life across all levels of organisation; from the evolution and adaptations of whole organisms to the activities of animal cells and the biochemical processes that maintain them. In recent years the development of new technologies has resulted in a particular emphasis on the study of cellular and molecular levels of animal organisation and activities.

We provide all students in the first year of their Biological Sciences programme with a firm grounding in all aspects of Zoology. You will cover the biochemistry and molecular biology of animal cells, the physiology of key animal systems and the biology of major animal groups.

In the second year you have the opportunity to select specialised modules in Animal Sensory Systems, Neurobiology and Behaviour, Developmental Biology and Ecology; animal cell biology is a central theme in many of the other optional modules available. Final year modules within the Zoology stream reflect the research activities and strengths of teaching staff.

BSc Biological Sciences (Genetics) C400

Genetics, the study of biological information, is central to all areas of biology, from cellular differentiation and development, through reproduction, to biodiversity and conservation. Discoveries in genetics are having a major impact on society, ranging from the prospect for breakthroughs in the treatment of diseases and the understanding of individual differences emerging from the Human Genome Project, to improvements in food production through genetic engineering.

This programme is structured to give you a comprehensive introduction to modern genetics. The first year genetics module covers DNA structure and function, information flow, gene regulation and the genetics of bacteria and higher organisms. In the second year you will study the basis by which genetic variation arises and is

transmitted from generation to generation. You will also look at the organisation, structure and dynamic nature of genomes, as well advanced topics in gene regulation in both bacteria and higher organisms, including man. The final year allows choice from a range of specialised topics in genetics and gives the opportunity to carry out a piece of research in genetics. In all three years, attention is given to the economic and ethical implications of advances in genetics for our understanding of ourselves and for human society.

BSc Biological Sciences (Microbiology) C100

Even though you can't see them, microorganisms are all around us. Since microbiology is little studied at school, our primary aim is to interest and involve students in the fascinating and beautiful world of bacteria, fungi and viruses.

The first year microbiology module gives you a broad introduction to microbiology with a focus on infectious disease and will introduce you to the major microbial groups: bacteria, fungi, protists, archaea and viruses. Our second year Microbiology module 'Microbes and Man' is focused on the role of microbes in disease and explores aspects such as antibiotics and biological warfare. The microbiology options available in the final year have their roots in the areas of research expertise in the School. These include Molecular Basis of Bacterial Infection and Applied and Environmental Microbiology.

BSc Biological Sciences (Biotechnology) C100

Genetic Engineering, the ability to manipulate the genetic composition of an organism is one of the most remarkable advances in modern biology and has a huge potential impact on industry, agriculture, medical science and the environment. This is the basis of biotechnology.

The primary aim of this degree is to give students a detailed understanding of these methods for genetic manipulation and their applications in modern biological industries. This understanding will be grounded in a wider appreciation of biology developed from the breadth of modules undertaken in the first and second years. You will develop expert knowledge in the uses and implications of biotechnology.

First year modules in microbiology and genetics are an important foundation. In the second year the core 'Molecular Biology and its Applications' introduces you to gene cloning and you choose two other modules; 'Genes and Genomes' and 'Microbes and Man' are recommended. In the final year you have a range of modules to choose from

and you will have the opportunity to undertake a final year project in one of our laboratories.

Biological Sciences (Plant Biology) C100

The way in which plants interact with each other, animals, microorganisms and the environment is the science of ecology, central to developing sustainable conservation strategies. Sophisticated molecular techniques now allow us to modify plants to improve their performance and to, act as 'green factories' to produce products as diverse as new drugs, plastics and helping to clean up polluted environments.

Our first year plant and environmental biology module explains how crop plants have developed the strategies that underpin their success and introduces biotechnology and genetic engineering. The optional second year module 'Plant Sciences – From Cells to Environment' explores these areas in more detail, covering plant-microbe interactions, including aspects of plant pathogens and disease. Key aspects of plant biology are components of the genetics, environmental biology and field biology modules in the second year. (See page 12). The Norway field course studies succession at the snouts of glaciers whereas the Shropshire field course introduces the important skill of biological recording. In the third year there is a range of modules reflecting current areas of research into plants, in addition to a wide range of plant related projects and dissertation titles from which you may choose.

Biological Sciences (Environmental Biology) C100

The way in which living organisms interact with their surroundings and each other is the basis of environmental biology. The outcome of the interactions between organisms is the basis of evolution, the process by which all living things have been shaped. A major current challenge is climate change, altering the balance between organisms and creating problems in conservation and agriculture. An understanding of the interactions between organisms and their environment is essential if sustainable strategies are to be developed to solve these problems.

First year modules provide a thorough introduction to ecology and methods of study. In the second and third year, specialist options allow you to refine your environmental interests. Field courses are an important part of teaching and learning in Environmental Biology (see page 12). These options allow you to experience first-hand how organisms interact with their environment and to develop the necessary practical skills.

Fieldwork opportunities

Careers for Biologists

See page 17 for details of career opportunities for Bioscience graduates.

Fieldwork

The opportunity to study organisms in their natural environment is an essential experience when studying for a degree in biology. Field skills are not only important to your qualification as a biologist, but equally they are highly relevant to careers linked to the themes of climate change, land use and conservation. Biology students at Birmingham enjoy multiple field work opportunities in the second and final year of the course, including exciting excursions to Norway (2nd year) and Florida (final year). There is a fee for field courses, but they are subsidised by the School of Biosciences, representing not only good value for money, but an excellent opportunity to get a taste of field research.

Second year field courses

Studying biodiversity assessment techniques at the Preston Montford centre in Shropshire, this course offers the opportunity to acquire hands-on experience in a range of techniques such as small animal mark-and-recapture, habitat mapping and species identification.



Alternatively, you can join the excursion to the field station at Finse in Norway to study alpine and glacial ecology. Students will be able to observe first hand a retreating glacier, and the well-documented succession that has occurred as the glacier has retreated over the last 250 years; this provides a direct way of studying the impact of climate change at the front line.

Final year field projects

In the summer before your final year, you have the opportunity to complete a 3 week Final Year Field Project Module at a research site in Florida conducting an independent field research project. You will be able to study ecosystems, populations and individuals in the unique habitats of the Florida wildlands and ranchlands. As a local alternative, we offer a course on primate behaviour at the Trentham Estate in Staffordshire, where you will study behavioural ecology and sociobiology of free roaming Barbary macaques.



'I had a fantastic week on the field course at Preston Montford. I loved every aspect of the field course and although the days were long we were kept busy and interested all of the time. I think actually being able to go out in the field and do the practical side of the course helped us all learn much more easily. I know everyone I spoke to agreed that it was our favourite module by far. We went out collecting specimens and I still have a badger skull at home as a memory of the week. It was great to do the capture-release technique as we handled voles and mice.'

Kate
Second Year Biological Sciences



Undergraduate Masters programmes

These degree programmes offer you something extra; you will graduate after 4 years with an MSci having undertaken a year of advanced research training in addition to your undergraduate studies.



Dr Eva Hyde

Leader of the Undergraduate Masters programme

During my undergraduate degree in Chemistry, I took an optional course in Biochemistry which then led me to do first my research project and then a PhD in this area. Thus begun my career in trying to understand how the structures of proteins enable them to carry out their biological functions. I use a variety of biophysical techniques but, in particular, NMR spectroscopy which seems to constantly develop new tools for examining molecules in solution. I am especially interested in how DNA-binding proteins and enzymes bind specifically to their targets.

I joined the School in 1989 and have helped develop many of the Biochemistry modules. My research interests feature in much of my undergraduate teaching. The MSci course was inaugurated in October 2009 and, with my colleagues, I have tried to create a course in which individual students can largely pursue their own biological interests. At the same time, we aim to further develop skills that are important not only for scientific research but in a wide range of careers.

The Undergraduate Masters programmes are a natural progression from the research-led teaching you will experience in your first three years. This option is available with each of our three main degree programmes:

- Biological Sciences
- Biochemistry *
- Human Biology

* Accredited by the Society of Biology

These programmes are aimed at well-qualified students, particularly those wishing to pursue a career in scientific research. The fourth year allows you to gain research experience and training beyond what is attainable in a three year BSc. These programmes have a higher offer than our three year degree programmes. However they have a built in insurance offer. Candidates, firmly accepting as their first choice an offer for one of our MSci courses, are guaranteed a place on the corresponding BSc programmes if they meet the standard offer.

'[Accreditation] externally recognises academic excellence in the biosciences, highlighting degrees which educate the research and development leaders and innovators of the future.'

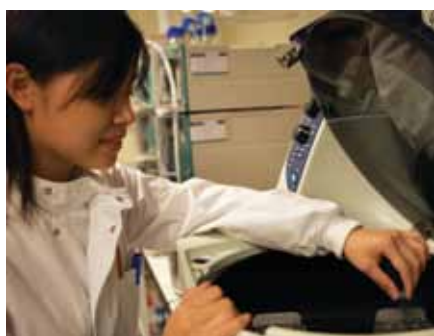
Rachel Lambert-Forsyth
Head of Education, Society of Biology

Structure of the programme

If you join one of our MSci courses you will follow the same programme as the students on the 3 year BSc. This means that you can specialise in areas such as genetics or medical biochemistry or keep your studies broad.

In your third year you will be able to choose from the full range of modules offered to students on the BSc programme and you will do a research project.

The Masters year is where this programme really comes into its own. Half of your time will be spent on a 60 credit research project chosen from a wide range of topics offered by the School. You will also take modules, which will expose you to the latest developments and techniques in your preferred area of the Biosciences. You will prepare a business plan or grant application and learn how to plan and carry out research and present your findings effectively.



Professional placements

Stand out from the crowd: this 4 year course offers you the opportunity to gain valuable experience of working alongside professional bioscientists while doing your degree.



Dr Pete Lund
Leader of the Professional Placement Programme

My research career has involved spells both in academia and in industry (in both the pharmaceutical and agri-biotechnology sectors) in England, the USA, and Australia. Arising from my experience of commercial aspects of GM technology, I was a member for six years of the Food Standards Agency committee that regulates all GM crops in the UK. I teach undergraduate and postgraduate courses on cell biology and molecular genetics, and also on ethics and the relationships between science and society. My current research looks at how organisms detect and respond to various stresses, and how this may affect the ability of some bacteria to cause disease.

As leader of the Professional Placement programmes, I am keen to offer students the opportunity to experience, first hand, how their chosen degree relates to the work environment and to acquire skills valued by employers.

'My abilities and confidence in the laboratory have grown as I receive more training and responsibility in my section. I feel much more independent and confident in my capabilities to work either alone or in a team.'

Elizabeth

On a placement with The Binding Site Ltd who manufacture immunodiagnostic assay kits

In today's competitive jobs market having work experience will look excellent on your CV. The experience of working as a professional bioscientist during the course of your degree will also help you to define your career objectives.

You can gain this valuable experience by following one of our four year Professional Placement programmes; these involve a 12-month professional work placement between the second and final years of your degree. The School of Biosciences has extensive links with companies and organisations in diverse fields from the pharmaceutical industry and medical research to conservation organisations; this means that we can find placements for students with a wide range of interests.

The work you do in your placement year will probably be paid, especially if you work in industry or medical research. If you are more interested in an area such as conservation, you may be working for a charity and in this case you may not be paid during your placement. The companies and organisations you might be able to work for during your placement include:

Industry

- GlaxoSmithKline
- AstraZeneca
- Basilea Pharmaceutica, Basel, Switzerland
- Celltech
- Cambridge Antibody Technology
- Syngenta
- Novartis
- Oxagen
- Oxford Biomedica
- Prolifix
- Xenova

Medical/Research

- Campden and Chorley Wood Food Research Association
- DSTL, Porton Down

Ecology/Field work

- Horticulture Research International
- The Field Studies Council
- Yorkshire Water

Structure of the programme

If you choose to join one of our 'professional placement' degree programmes, you will follow the same modular structure as students on the mainstream programmes for the first two years. We will guide you through the process of selecting and applying to suitable employers for your placement year. Your third year will be spent working in your chosen placement; we will keep in touch with you during the year by visiting you in the workplace. On your return you will join the final year of the degree programme. Students returning from their placement are often better organised, more confident and motivated and have improved academic performance when they graduate.

Degree programmes offering work experience

You can take the 'professional placement' option with the following degrees:

- Biological Sciences
- Biochemistry
- Human Biology

Although you cannot combine the 'with professional placement' description with other detailed titles such as Biological Sciences (Genetics), or Biochemistry with Biotechnology, you can take the same optional courses as students with these degree titles. This will be reflected in the transcript of your degree, which can be presented to potential employers to show which areas you have specialised in.

Entry requirements

The subjects that you need to have studied at A Level for the 'professional placement' degree programmes are the same as for the mainstream degree programmes. However for these programmes a typical offer would be AAB.

Study abroad



Dr Matthias Soller
Programme Leader for study
abroad programmes

Having grown up in a country with four different native languages, I was keenly aware early on that being confident in speaking other languages and being familiar with other cultures opens career opportunities.

During my career in science, I was eager to learn by going to different places. I obtained a masters degree from the University of Berne, Switzerland. To learn about genes and behaviour in a genetic model organism, I started my PhD at the University of Zürich, but also visited laboratories in Göttingen, Germany and Edinburgh. In moving to Brandeis University in the US for my postdoctoral research, I was inspired by the emerging view that post-transcriptional regulation of gene expression brings about the immense molecular diversity in the brain, explaining in part its complexity. Joining Birmingham in 2006, I continued this line of research as an independent group leader.

'I soon met lots of people who were in similar circumstances; any large university town will have a wealth of foreign students who have that little bit extra in common to knit together in a close social group. As time went on, my ability to communicate in French rapidly improved and I was soon also mixing more with French students and locals.'

Louise
Former student

Improve your language skills while studying for your degree

Your degree will have added value by spending a year studying at a university abroad. This will enable you to widen and deepen your subject knowledge and to maintain and develop language skills while experiencing living in a different culture. The year abroad programme equips students with an unrivalled range of skills, in addition to their understanding of the biological world, which is much appreciated by employers.

During years one and two, you will study the same modules as the other students, but you will replace one Biosciences module in each year with the language module. While students come to us with different levels of ability in the foreign language, we find that the two years of language classes are adequate to prepare for the third year spent abroad. Safe to say that your ability to speak the language and to understand native speakers will improve



massively during the year abroad, and you will be very comfortable conversing in French, Spanish or German. You will return to Birmingham to complete your BSc degree in your fourth and final year.

You will study biology or biochemistry at one of the universities with which we have links in France, Germany or Spain. In many of the universities you also have the opportunity to carry out a project in a research laboratory, if you prefer.

We provide a wide range of information to help you choose the right university. You can also talk to Birmingham students who are currently studying abroad or were abroad the previous year, or French, German and Spanish students who are currently studying with us.

You can take the 'With A Year of Study in Continental Europe' option with the following degrees:

- Biological Sciences
- Biochemistry

While specialist degree titles, such as Biological Sciences (Genetics), cannot be awarded under the 'with a Year of Study in Continental Europe' programme, the relevant specialist modules will be available to you, and your transcript will include your module choices and thus convey your specialist qualification.

Entry requirements

The subjects that you need to have studied at A level for the 'with study in Continental Europe' degree programmes are the same as for the mainstream degree programmes. You will also need a GCSE grade B minimum in an appropriate modern language. If you have a language at AS or A level so much the better.



Student learning and student support



Dr Scott Hayward
First year tutor

I graduated from the University of Edinburgh with a degree in zoology, and then did my PhD at the University of Birmingham in collaboration with British Antarctic Survey. I spent a number of years in the USA as a Royal Society-Fulbright Fellow, followed by 3 years at the University of Liverpool. I eventually returned to Birmingham as a lecturer in 2008.

My research seeks to understand how insects cope with variable and stressful environments by investigating how different species detect, repair and stabilize the cellular and molecular damage induced by environmental stress, as well as their broader physiology and ecology. This research is fundamental to understanding the distribution and abundance of insects under climate change, with applications in insect pest control and optimising ecosystem services such as pollination.

I am passionate about research-led teaching using a student-centred enquiry-based learning approach. My research feeds directly into my teaching on undergraduate modules across all 3 years, including the 2nd year field trip to Norway.

Modular programme structure

Due to their modular structure, our degree programmes offer great flexibility and delayed choice of precise degree content, whilst at the same time providing a thorough grounding in core areas.

Contact hours and independent learning

As a science student you will have plenty of contact with staff. In your first year you should expect 10–12 lectures and 1 or 2 practicals as part of 20–25 hours of timetabled teaching sessions per week. Lectures and practicals will be complemented by workshop sessions to help you develop your problem solving skills. In addition, there will be regular meetings with your tutor, with 4–6 students per tutorial group.

Independent learning, following-up what you have been taught in lectures, and completing assessed work will occupy the rest of your study time.

Lectures

Lectures are central to the delivery of course content. Our electronic voting system allows for 'ask the audience' style questions to monitor understanding in the class, and some lecturers will record their lectures for posting on our e-learning platform, WebCT.

Practical classes

Laboratory-based practical work is an integral part of our degree programmes. A typical practical session will last 3 hours. First year practicals will furnish you with basic technical skills. As you move through the degree, the skills you develop become increasingly complex. Ultimately you will deploy these in the third year, where you may choose to carry out a laboratory-based research project.

Tutorials

The same member of staff will mentor you throughout the course, helping you in three important areas: supporting your academic progress, developing transferable skills and helping with any welfare issues. While there are time-tabled tutorial group sessions, you can arrange to see your tutor any time the need arises. Tutorial group sessions offer the opportunity to interact with staff and fellow students, to question and explore your subject through debate and discussion.

e-Learning

Student learning is effectively supported by course material posted on our e-learning platform WebCT. The content includes audio recordings of selected lectures, collections of lectures summaries and slides, online quizzes, and reference material. Students also have access to formative feedback and plenty of links to valuable complementary learning resources from external content providers. If you do not own a computer or laptop yourself, you can access this content from the University's computer clusters located in the Learning Centre.

Assessment and feedback

Assessments during the course serve a dual purpose: to appraise your academic performance and to provide feedback on your progress. Each module is assessed independently. Continuous assessment during the teaching terms, typically contributing up to 40% to the overall module mark, can take the form of practical reports, class tests, or quizzes. End-of-year examinations

take place during the summer term and contribute the lion share to the overall mark for most modules. Your final degree classification is based partly on your performance in Year Two modules (25%) and partly on performance in your final year (75%).

Projects and dissertations

Opportunities to carry out independent research are an integral part of all our degree programmes. We offer a range of projects: practical work in the laboratory, field work, computer based projects, or literature reviews. Many students carry out their research project working in a research laboratory alongside research fellows and PhD students. Most students enjoy project work as a highlight of their academic training and experience. It provides an opportunity to put into practice the knowledge and skills you have learnt in lectures and laboratory classes. It also helps develop an appreciation of the process of original research, which is particularly important if you are thinking of this as a career path.

Field courses

Field courses are an important part of learning and teaching in the Biological Sciences, especially if you are interested in animals, plants and environmental aspects of biology. Biological Sciences students have the opportunity to develop their field skills on a range of field trips in environments that range from Shropshire, to Arctic Norway and Florida. For more details see page 12.

Transferable skills

During your studies you will develop a variety of personal transferable skills that are highly valued in the job market. Communication skills are particularly important and students write reports, take part in meetings and discussion groups and also give talks and seminars. In our second year module 'Communication and Skills in Biosciences', you will produce a short video exploring a topical area of biology. In the process you develop a wide range of skills in communication, group work and organisation. Students of the Biochemistry course hone their data analysis and interpretation skills in a final year module dedicated to the training of quantitative skills.

Outside of your studies you can join the University's Personal Skills Award, a programme designed to formally recognise skills acquired outside the course curriculum. Also, you may participate in one of the internship schemes that this University offers on a competitive basis.

Employability and careers in Biosciences

A Biosciences degree from the University of Birmingham is an excellent qualification for securing your future career in a diverse range of industries and employment sectors. Advances in the Biosciences are having a profound impact on our daily lives in areas from human health to conservation. As such Biosciences has become a really rewarding and exciting area of study and employment.

The Biosciences are a broad discipline and our students graduate with a wide range of expertise from those who specialise in molecular aspects of the subject to those whose interests are focussed on whole organisms, this diversity is reflected in the career paths they choose.

Emerging knowledge in areas such as genetics, molecular biology and ecology have effects on human society and the environment all over the planet. In studying the biosciences, you are given the opportunity to develop the skills to advance human knowledge and understanding allowing you to make a contribution in environments as varied as a laboratory, a zoo, a classroom, a TV studio or in industry.

Bioscience jobs are found in a range of different settings. You could work for universities or governmental research institutions as a research scientist. Pharmaceutical and biotechnology companies also employ research scientists but there are many other areas you might be interested in including quality control, regulatory affairs and clinical trials.

Options within the medical sector include graduate entry into medicine or dentistry, and physiotherapy training.

The combination of biology and chemistry knowledge that you will develop as a Bioscientist is useful for a career as a science teacher or in outreach organisations such as museums, science centres, broadcast companies, for example.

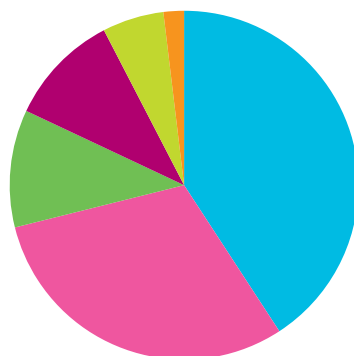
The wide range of skills that you will develop while studying for a Bioscience degree equips you for non-science careers. Many Bioscience graduates use their degree as a stepping stone to diverse careers in areas such as management, marketing, finance, patents, teaching, law, journalism and publishing.

A large number of our Bioscience students enjoy their subject so much that they choose to take a further degree, a Masters or PhD. This

is an important step in many career paths for scientists particularly those who want a career in research. Our graduates are highly sought after by universities around the world, some will choose other universities for post graduate study whilst many stay in Birmingham and join one of our prestigious research groups. Did you know that PhDs are fully funded and that graduate students receive a tax free stipend equivalent to a salary?

Our students are adventurous, as nearly 10% go travelling or work on conservation projects for a time after graduation before settling onto their permanent career path.

First destinations of University of Birmingham Biosciences graduates six months after graduation:



■ Full-time work – 41% ■ Work/further study – 10%
 ■ Further study only – 30% ■ Part-time work – 6%
 ■ Looking for work – 11% ■ Voluntary/unpaid work – 2%

Destinations of Leavers of Higher Education report (DLHE) 2010–11

Helping you find the right career

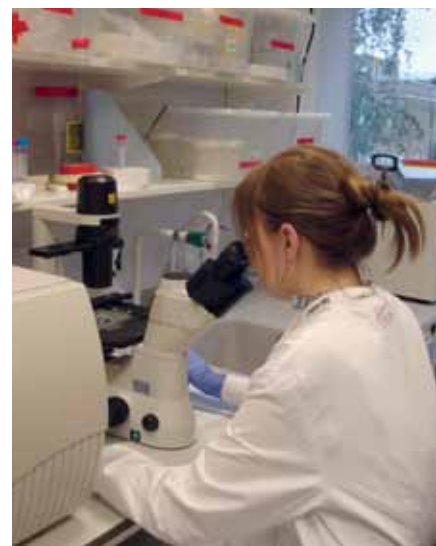
The School of Biosciences Careers and Employability Coordinator and the University's Careers and Employability Centre (CEC) are there to help you to improve your employability and to find the right career for you, holding regular CV clinics, careers talks, events and skills workshops. Our Annual Biosciences Careers Fair features presentations from former students and employers, and will give you a good idea of the wide range of employment open to Biosciences graduates.

Top Occupations for Birmingham's Biosciences Graduates (DLHE survey)

- Bioscientist
- Clinical Scientist
- Ecologist
- Genetic Technologist
- Immunologist
- Investigative Toxicologist
- Lab Technician
- Medical Technical Officer
- Research Fellow
- Poisons Information Specialist

'I had always been keen to work at the cutting-edge of conservation biology and my degree gave me the qualification I needed to work for the Mauritius Wildlife Foundation as a research biologist.'

Kath
 Biological Science graduate



International students

The School of Biosciences has a long tradition of welcoming international students. We have students from all over the world, including countries such as China, Singapore and India.



Professor Zewei Luo
Tutor for international students

I did my first and Master's degree in Agricultural Biology at the South West China Agriculture University. In 1987 I came to Birmingham to study for my PhD in Quantitative Genetics. From 1995 I had been teaching genetics in Fudan University in China.

In 2001 I returned to the School of Biosciences as a senior lecturer. My research explores theory and methods for fine mapping the genes underlying complex quantitative traits in artificial and natural populations. This is in association with experimental study on unravelling the molecular aetiology of inherited thyroid diseases in humans.

In my role as the School's International Tutor I am responsible for students from all over the world. I will be happy to help you if you have any problems settling in or adjusting to the British university system.

'I was attracted by the good reputation and facilities offered by the University... and, as an overseas student, I received extra support from my tutor and the School.'

Hansong
former student

Applications and qualifications

All of our undergraduate degree programmes are open to international students and we accept appropriate qualifications from around the world. If you contact the admissions tutor he will be able to advise you about whether your qualifications are suitable. All students need to show that they have an adequate knowledge of written and spoken English. In the case of international students this usually means taking either an IELTS (minimum score of 6.0) or TOEFL test (550 paper-based, or 213 computer-based).

If you decide that you want to apply for a place on one of our degree programmes, you should apply through the Universities and Colleges Admissions Service (UCAS). They can be contacted by email at app.req@ucas.ac.uk or via their website www.ucas.ac.uk

Support for international students

We want to do all we can to help you when you are applying to study here and also to help you enjoy, and benefit from, your time in Birmingham. The staff in our International Office have a wealth of experience in helping overseas students. They can be contacted at

The International Office
University of Birmingham
Edgbaston
Birmingham
B15 2TT
United Kingdom
Tel: +44 (0)121 414 3694/7167
Email: international@bham.ac.uk
www.birmingham.ac.uk/international

Once you have been accepted to study at the University you will be invited to join in 'Welcome Week International'. This is designed to guide you through your initial administrative tasks such as registering with the University and the police, and applying for a bank account. Welcome Week also includes a range of social activities to help you meet new students from all over the world and get to know the campus and the city.



'I am grateful to be the first person who received the Paul Nurse scholarship for international students. The scholarship really helps a great deal; moreover, winning such a prestigious scholarship makes me more confident.'

Tung
recipient of the Sir Paul Nurse Scholarship from Vietnam.

When you join the School you will meet your personal tutor who is there to help you throughout the three years of your degree programme. In addition, Professor Zewei Luo (left) has a particular role in supporting overseas students.

Fees and scholarships

If you are an overseas student, which generally means you are from outside the EU, you will have to pay fees. Information about fees and university scholarships can be found on the International Office website at www.birmingham.ac.uk/international

The School of Biosciences is pleased to offer a scholarship to an international student of excellent academic promise. To qualify for the award, you must be eligible for overseas fees status, and you must have applied to the University through UCAS. A scholarship application form will normally be sent to you if you are made a conditional or unconditional offer.

Student life at the University of Birmingham

Come to study at Birmingham and enjoy living in one of Europe's most exciting cities. Birmingham is changing fast.

There are three key attractions to Birmingham: its culture and entertainment, the retail experience, and its location at the heart of some of the UK's most beautiful countryside.

Entertainment, arts and culture

There is always something going on in Birmingham. In addition to an excellent choice of cafés and restaurants, there are theatres, museums, cinemas, nightclubs and bars in abundance. If you like live entertainment, then take your pick from comedy clubs, local music gigs and top shows at Birmingham's principal theatres, while all the star names appear at the National Exhibition Centre and National Indoor Arena.

Shopping

Bullring shopping centre is Europe's largest city retail development and includes the award-winning Selfridges building. Birmingham hosts four major markets, as well as all the principal chain stores and a wealth of smaller shops and retail centres.

The heart of England

Located in the heart of the country, Birmingham is at the centre of the motorway and rail network, with its own international airport – you can get almost anywhere in the world by starting from here.

Sport and the arts

Sport is central to life at Birmingham. UBSport brings together some of the best sports facilities in the country, professional coaching and imaginative programmes to offer a range of sporting opportunities to suit everyone.

Music is also a distinctive part of Birmingham life. The University has two symphony orchestras, a Big Band, a number of choirs, a symphonic wind band and a brass ensemble. A regular programme of public performances is staged in the concert hall at the Barber Institute of Fine Arts.

Student living

Several student villages and developments provide a range of accommodation, from standard packages including room and meals, to self-catering flats with en suite facilities.

We also provide student mentors to help you settle in, as well as all the amenities that you will need, including access to the University's high speed campus network and internet in all bedrooms.

The Guild – for students, by students

The hub of undergraduate student life is the Guild of Students, Birmingham's students' union. There are over 150 clubs and societies hosted by the Guild, and you can also get involved in our student radio station, BURN FM, or the student newspaper Redbrick.

Learn more

www.birmingham.ac.uk

'The University is huge so there's always loads going on, yet as a campus there are great facilities and a real community feel. The city of Birmingham has the lot; great nightlife, fantastic shopping, everything from an indoor ski slope to modern art galleries.'

Sarah
Year 3





SCAN ME

**UNIVERSITY OF
BIRMINGHAM**

**College of Life and
Environmental Sciences**
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