Our teaching excellence is evidenced by our strong National Student Survey and league table rankings. In recent years, biological research has advanced rapidly and has had an amazing impact on our daily lives and Leicester has been at the forefront of this work.

The University is renowned for the discovery of DNA profiling (fingerprinting) by Professor Sir Alec Jeffreys, which has generated a multi-million pound industry and has had profound effects in the spheres of health and criminal justice. Leicester has also recently been involved in research ranging from the development of vaccines to the population effects of pollutants and the restoration and conservation of ecosystems.

The School’s teaching is delivered by four departments which collaborate in teaching and research: Genetics; Molecular & Cell Biology; Neuroscience, Psychology & Behaviour; and Infection, Immunity and Inflammation. Our ability to offer a wide range of degrees gives our students both breadth of vision and specialised knowledge across the whole range of the biosciences.
Why Choose to Study at Leicester?

- We are globally recognised for our research excellence, which spans the biosciences. As a result we offer a range of degrees and flexible course designed to allow you to follow your own interests.
- We take our teaching as seriously as our research. We are proud of our consistently excellent scores in the National Student Survey (NSS). In the 2016 National Student Survey (NSS) 92% of our students were satisfied with their course.
- The written feedback from the 2016 NSS survey stresses the approachability of the staff, the quality of the teaching support, and the opportunities provided by our final-year research projects.
- A degree in Biological Sciences offers you a wide range of career opportunities. Many of our graduates follow further training for research in biosciences, often on the MSc or PhD programmes in Leicester.

Degrees Offered

Three year degrees
- BSc Biological Sciences
  UCAS code C100
- BSc Biological Sciences (Biochemistry)
  UCAS code C700
- BSc Biological Sciences (Genetics)
  UCAS code C400
- BSc Biological Sciences (Microbiology)
  UCAS code C500
- BSc Biological Sciences (Neuroscience)
  UCAS Code B140
- BSc Biological Sciences (Physiology with Pharmacology)
  UCAS code B1B2
- BSc Biological Sciences (Zoology)
  UCAS code C300

For more information on modules go to
www.le.ac.uk/courses/biological-sciences-bsc

Four year degrees

Four-year degrees with year three spent either in industry, in Europe, in Japan or the USA studying at another university or working in a European research laboratory.
BSc Biological Sciences with a Year in Industry

If you are successful in the competitive selection process you may transfer to the four-year programme and spend your third year working in industry before returning to Leicester for the final year. Previous students have spent their sandwich year working in companies such as AstraZeneca and GlaxoSmithKline. Others have spent their sandwich year in research institutions such as the Animal Health Institute and Kew Gardens.

University of Leicester Biological Sciences students who complete an industrial placement year will graduate with an accredited degree. According to the Royal Society of Biology, the UK learned society for biologists, this means that:

"Degree accreditation by the Royal Society of Biology recognises academic excellence in the biosciences, and highlights degrees that educate the research and development leaders and innovators of the future. The accreditation criteria require evidence that graduates from the programme meet defined sets of learning outcomes, including gaining a substantial period of research experience."

BSc Biological Sciences with a Year Abroad

Through this four-year programme, you may choose to spend your third year taking courses or working in a research laboratory at universities in Europe (eg. France, Italy, Spain, Germany, Portugal) through the ERASMUS scheme.

Alternatively, the School has links with universities in the USA and Japan where you can also spend your third year taking courses or carrying out research work.

Many organisations have an international scope so knowledge of a foreign language and a global outlook can give you a vital edge.

Other Programmes

The School also offers the following degree programmes, for which a brochure is also available:

- **BSc Medical Biochemistry**
  - UCAS code C720
- **BSc Medical Genetics**
  - UCAS code C431
- **BSc Medical Microbiology**
  - UCAS code C521
- **BSc Medical Physiology**
  - UCAS code B120

All Biological Sciences Degrees – Common First Year

Seven variations of the degree in Biological Sciences are offered but all students take the same modules that provide a common first year covering the breadth of modern biology, from molecules to populations.

The first year develops your understanding of information transfer in biological systems, macromolecular structures, enzyme kinetics, membrane structure and function and metabolic pathways. You will be introduced to the cell and developmental biology of plants and animals and their vast diversity, from both evolutionary and environmental perspectives.

You will study the basic concepts of genetics and genetic analysis using both traditional and molecular approaches, so that you will be able to describe the effects of mutations and explain how they arise. Physiological processes in whole tissues and body systems, such as the cardiovascular and respiratory systems, are investigated. You will also explore the diversity of plants and animals and the links between environmental and evolutionary biology and how these relate to animal behaviour. There will be an introduction to the structure and function of microorganisms and consideration of their impact on the biosphere.

Key skills in IT, numeracy and communication will form part of all of these modules and will provide you with the relevant experience for the second and third years.

Throughout the first year, you will gain practical experience in the laboratory classes associated with each module and have the opportunity to discuss topics in the tutorials that form an integral part of the learning process.

"The recommended books, approachable lecturers and excellent laboratory facilities with appropriate practical sessions really helped to reinforce all the new material that we covered."

Tina, Biological Sciences Graduate
Biological Sciences BSc
UCAS Code C100

Three years full-time or four years with a year in industry/abroad

Second Year
After successful completion of the first year, by choosing from the full range of modules available in the subject areas offered, you may begin either to specialise in one of the degree streams in the second year or to retain a broad approach to the subject. Even within a specialist degree stream, you will still have a choice of modules in addition to those core to your specialism.

Final Year
In the final year you will take a selection of advanced modules. If you wish to graduate with a named degree, at least 50% of the modules must be from within the selection for that degree. During the final year you will undertake a research project working alongside an expert who will guide you through a research topic related to his/her research interests. These projects can either be laboratory-based, where you will work alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

Biological Sciences (Biochemistry) BSc
UCAS Code C700

Three years full-time or four years with a year in industry/abroad

Second Year
Topics in Biochemistry develop your appreciation of the varied nature of proteins and their functional importance to the behaviour of cells and organisms. You will study the expression of genetic information into the final protein product. With the aid of computer graphics you will explore the relationship between protein structure and function. You will also consider how proteins are organised into complex networks within cells, including the molecular machinery controlling such processes as cell division and movement.

Final Year
Modules include the study of a wide range of biochemical topics. You will study the molecular basis of human cancer and the development of new treatments. You will learn more about techniques used in the study of protein structure and protein complexes and their importance in cells. The methodology of research and an up-to-date understanding of the molecular mechanisms of gene expression constitute another major component of the final year options. During the final year you will undertake a research project working alongside an expert who will guide you through a research topic related to his/her research interests. These projects can either be laboratory-based, where you will work alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

Claudia, Biochemistry Graduate

Despite the extra pressure I think I enjoyed the third year the most because I got to totally focus on the things that interested me the most, in my case biochemistry.

www.le.ac.uk/biology-bsc

www.le.ac.uk/biochem-bsc
Biological Sciences (Genetics) BSc
UCAS Code C400

Three years full-time or four years with a year in industry/abroad

Genetics is important in many aspects of society including medicine, the quality of the environment, conservation, ethics and the law. The aim of the Genetics course is to provide a balanced coverage of modern genetics focusing on the organisation, inheritance, expression and evolution of genes in organisms ranging from bacteria to man.

Second Year
In the second year you will learn how genomes are organised and investigated. You will gain experience of the range of techniques and approaches that can be used to investigate the role of genes in complex biological situations, such as the development of organisms and the response of organisms to their environment. You will be introduced to the expanding role of genetics in the diagnosis and treatment of disease.

Final Year
In the final year you will have the opportunity to study specialised topics in genetics to an advanced level. These include human genetics, microbial genetics, evolution, the effect of the environment on our genomes and the study of gene function in development. During the final year you will undertake a research project working alongside an expert who will guide you through a research topic related to his/her research interests. These projects can either be laboratory-based, where you will work alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

www.le.ac.uk/genetics-bsc

Biological Sciences (Microbiology) BSc
UCAS Code C500

Three years full-time or four years with a year in industry/abroad

The course explains and emphasises those features that make micro-organisms, including viruses, special and remarkable biological entities.

Second Year
For part of your second year you will hear about the diversity and flexibility within the microbial world. You will study form, function and habitats of bacteria, archaea and eukaryotic micro-organisms; their industrial uses and the diseases they cause. An examination of the variety of structures and mechanisms of replication of viruses plus an introduction to immunology are also part of the second year. A field course held during the Easter vacation gives you the opportunity to visit industrial microbiology laboratories.

Final Year
During the final year you will investigate the complex interactions between pathogens and their hosts, analyse the mechanisms of immunity and the nature of microbial pathogenicity, the molecular approach to vaccine development, the role of viruses in cancer and the biology of AIDS and prion diseases (such as BSE – “mad cow disease”). You will also consider the role of bacteria in terrestrial and aquatic environments, with an analysis of the current views on the origin of life and includes aspects of microbial biochemistry, plant/microbe interactions and the microbiology of pollution, waste-management and bioremediation. Other options consider aspects of microbial molecular biology of relevance to modern industry and research. During the final year you will undertake a research project working alongside an expert who will guide you through a research topic related to his/her research interests. These projects can either be laboratory-based, where you will work alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

www.le.ac.uk/microbio-bsc
The BSc in Biological Sciences (Neuroscience) provides you with the opportunity to study the nervous system and how it influences all aspects of animal physiology. You will have the unique opportunity to study alongside neuroscientists who are investigating some of the most important questions in neuroscience research in order to gain insight into the mechanisms of human neurological disease.

Second Year
As described earlier, Year 1 of all degree streams provide a common and broad grounding in biological sciences and of course in transferrable skills. Following the successful completion of Year 1, students in the Biological Sciences (Neuroscience) degree programme will study a number of neuroscience modules alongside a selection of modules of their choice, which may be focused, for example, on topics in biochemistry, physiology and pharmacology. The neuroscience modules will enable students to understand attributes of the nervous system at the molecular, cellular and whole organism levels, including an understanding of how the nervous system regulates behaviour. Other modules will support an understanding of how the nervous system works at the cellular level, how it integrates information across other systems and how alterations in function can lead to disease.

Final Year
The final year modules are aimed at developing a research level understanding of neuroscience so that you are equipped to progress to postgraduate neuroscience research. The neuroscience-focused modules will develop selected topics in neuroscience, providing insight into research goals and strategies that are aiming to answer some of the many remaining significant questions in this area. Again, you will have the opportunity to select modules from other areas such as physiology and pharmacology to supplement and extend your understanding of neuroscience, disease and treatment. During this year you will also undertake a research project working alongside an expert who will guide you through a research topic related to his/her research interests. These projects can either be laboratory-based, where you will work alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

www.le.ac.uk/neurosci-bsc

The BSc Biological Sciences (Physiology with Pharmacology) offers you the opportunity to study the physiology of different body systems in health and disease. This course adopts molecular, cellular and systems approaches to the study of physiology so that you develop an integrated understanding of all aspects of the subject.

Second Year
As described earlier, Year 1 of all degree streams provide a common and broad grounding in biological sciences and of course in transferrable skills. Following the successful completion of Year 1, students in the Biological Sciences (Physiology with Pharmacology) degree programme will study a number of specialist modules alongside a selection of modules of their choice from across the Biological Sciences programme. The physiology and pharmacology modules will focus on cellular and systems physiology and will introduce you to the concepts underlying the mechanisms of drug action. Cell physiology addresses the properties of non-excitable and excitable cells including mechanisms by which cell homeostasis is maintained. You will be introduced to the functions of major body systems and gain insight into how these either influence or are affected by disease. You will also develop an understanding of how drugs are able to influence the body in health and disease.

The final year modules cover topics from the cellular to the organism level. They will allow focus on an understanding of cellular physiology and how processes may be influenced by drugs to treat diseases of, for example, the nervous and cardiovascular systems. Teaching in these modules is often research led and you will develop an understanding of some of the current key questions in these areas, how they are being tackled and how such knowledge may be beneficial to mankind. Again, you will have the opportunity to select modules from other areas of the Biological Sciences programme to supplement and extend your understanding of physiology and pharmacology. Central to this year is the opportunity to undertake a research project working alongside an expert who will guide you through a research topic related to their interests. These projects can either be laboratory-based, where you will work alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

www.le.ac.uk/physio-pharma-bsc
Biological Sciences (Zoology) BSc
UCAS Code C300

Three years full-time or four years with a year in industry/abroad

The BSc in Biological Sciences (Zoology) at Leicester provides you with a comprehensive understanding of the practical and theoretical approaches that zoologists currently use to tackle some of the fundamental unanswered questions in animal behaviour, neurobiology, ecology and evolutionary biology. During these studies, you will develop valuable transferable skills in collating, analysing and presenting data to peers and tutors in addition to thinking analytically and problem-solving.

Final Year
Our final year courses provide a range of specialised combinations for you to study to an advanced level, including topics such as comparative neurobiology, molecular ecology and conservation biology. We run popular residential fieldcourses focusing on practical aspects of analysing animal behaviour and biodiversity in the wild. Recent field trips have included an option to study subtropical ecology in south Brazil, behavioural ecology at the Field Studies centre in Slapton, Devon and a local conservation biology course in Leicestershire. You will also have the opportunity to develop your own research project during the fieldcourses and present your findings to your peers. You will be taught by specialists who are researching at the frontiers of their science, so you will also have the opportunity to work in a research team alongside professional laboratory scientists, or analytical, where you will probe the research literature in order to answer a specific research question.

In the Zoology degree some final year projects can be ‘field’ based such as assessing biodiversity and behaviour in local habitats. Reading for a degree in Zoology at the University of Leicester will present you with a range of exciting and interesting ideas and challenges, and will provide you with the depth and breadth of training necessary to progress to postgraduate study or to jobs across a broad range of applied biological fields or to other professional careers.

www.le.ac.uk/zoolology-bsc

Your Learning Experience
How will I be taught?

Examinations typically contribute 50-80% of the marks for each module. In the first year these are usually multiple choice and short answer papers, with the second and third year examinations containing a range of formats including short answer questions, data-handling and essays.

Coursework: Continuous assessment is a key component of all the Medical Sciences programmes. The amount of coursework in each module will vary, typically 30-40%, although some modules will be assessed solely by these methods. Typical types of coursework include reports of practical work, written assignments, essays and oral presentations.

Research Project (final year). An individual research study resulting in the presentation of a dissertation makes up a significant part of the final year.

How are the courses structured?
All of our courses are modular
The academic year is divided into two semesters. One of the benefits of the modular system is that your overall performance is fed back to you at the end of each semester in years one and two. This enables you to closely monitor your progress and, if necessary, adjust your work pattern.

Each year you must complete 120 credits in order to progress to the next year.

How will I be assessed?

Assessment is based on the following:
- Examinations typically contribute 50-80% of the marks for each module.
- Coursework: Continuous assessment is a key component of all the Medical Sciences programmes. The amount of coursework in each module will vary, typically 30-40%, although some modules will be assessed solely by these methods. Typical types of coursework include reports of practical work, written assignments, essays and oral presentations.
- Research Project (final year). An individual research study resulting in the presentation of a dissertation makes up a significant part of the final year.

How will I be taught?

Lectures
Lectures form a vital part of University teaching. They are used to define the basic material for a given module. Lecture styles vary considerably and may include web-based delivery, demonstrations/animations, as well as the traditional lecture format.

Tutorials
In a tutorial a small group of students meets with a member of staff. The format of tutorials will vary between modules but will involve teamwork. For tutorials students may be required to research a particular topic associated with the module concerned and discuss their findings with other members of their tutorial group, alternatively tutorials may take the form of problem-solving sessions.

Laboratory classes
The biosciences are, of course, a very practical subject, and so strong emphasis is placed on the acquisition of varied laboratory and field-work skills. During your undergraduate career you will acquire a full range of personal, transferable, practical, IT, team work and presentation skills. Practical classes take place in well-equipped laboratories, under the guidance of academic staff and demonstrators. Laboratory based research projects allow you the opportunity to work in a research laboratory and gain experience of some specialist techniques, for example electron microscopy, NMR, PCR or patch clamping.
Resources

IT provision
IT Services provide a networked service to students, supplemented by PC sites, offering applications software, e-mail and access to the Internet and the University’s virtual learning environment (VLE). Student-access computer suites are used for some formal teaching sessions and are available to students for individual work. Students have access to their own computer file store, with common user interface, application software etc. from any of the 18 Open Access Areas on and off campus. Internet access is available in all the study bedrooms in University accommodation.

How will I be supported?

Personal Tutor
All students are allocated a Personal Tutor who is a member of staff in Biological Sciences. You will meet with your personal tutor at least four times a year to discuss progress in your studies and to help you engage with feedback on your work. Your tutor will provide a sympathetic ear for matters of personal concern, whether they be academic, financial, housing, career, social or personal problems.

Welfare Services
The University has a professional Welfare Service and the staff are available to assist with a wide range of issues from managing your money to healthy living. These will, of course, be treated in the strictest confidence.

Student Development
Support for the development of students’ independent learning skills is provided by this centre in the David Wilson Library. Students can make use of a year round programme of study workshops, a drop-in advisory centre and a wide range of written study guides.

Career Development Service
The Career Development Service can help you gain the extra dimension you need to stand out – real-world skills and qualities that will not only enhance your early career prospects, but will stay with you for life. The way to make the most of you is to work with them the moment you arrive at Leicester.

The Career Development Service looks at the bigger picture and encourages you to be reflective and think about what you want out of a career. You can then explore your options and begin looking at what you need to do to fulfil those big ambitions.

Your academic talent is a key ingredient to success, but having relevant experience is another vital element in securing that dream role after you graduate. The Career Development Service provides a multitude of opportunities to ensure you’re able to acquire the experience needed to get that all important foot on the ladder. So whether you want to make a difference in the voluntary sector, reach the top in high-flying business or be the next big thing in media, there are specially designed programmes and activities that can support you in getting the skills, experiences and exposure you need.

The Career Development Service has its own network of graduate employers who tell them what they want in an employee in terms of skills and knowledge. Graduate employers visit campus all year round, offering workshops and talks on different career pathways. You have the chance to network, get the inside knowledge on industries and find out exactly what employers are looking for.

For more details: www.le.ac.uk/careers
Entrance Requirements and Further Information

Biological Sciences – All Degrees:

**A-Levels**
Entry requirements are three A-levels or suitable equivalent including two relevant science subjects.

Applicants with only one science may still be considered. Contact the admissions tutor Dr Mark Goodwin to discuss further.

However, for certain courses, other science-based subjects may be acceptable (for example, Psychology, Geology or Environmental Science) depending on the subjects taken at GCSE and AS. At least Grade C in both GCSE English Language and Maths (if not held at A-level).

**Typical Offers:**
- EPQ with A-levels: BBB + EPQ at grade B. A-level subjects to include two relevant science subjects, preferably from Biology, Chemistry, Physics or Maths. General Studies not accepted.

**Access:** Pass with 45 credits at Level 3, depending on the course structure, plus Distinctions in 30 credits at Level 3 in relevant subjects.

**BTEC Nationals:** Full Diploma with DDD

**Irish leaving Certificate:** AABBB, including English, at higher level.

**Scottish Highers:** AABBB

**European Baccalaureate:** Pass with 77% overall including subject specific gradings.

**International Baccalaureate:** Pass Diploma with 30-32 points including 6 at Higher Level in two relevant sciences.

**Typical Offers:**
- EPQ with A-levels: BBB + EPQ at grade B. A-level subjects to include two relevant science subjects, preferably from Biology, Chemistry, Physics or Maths. General Studies not accepted.

**Access:** Pass with 45 credits at Level 3, depending on the course structure, plus Distinctions in 30 credits at Level 3 in relevant subjects.

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**Irish leaving Certificate:** AABBB, including English, at higher level.

**Scottish Highers:** AABBB

**European Baccalaureate:** Pass with 77% overall including subject specific gradings.

**International Baccalaureate:** Pass Diploma with 30-32 points including 6 at Higher Level in two relevant sciences.

All applicants to whom an offer has been made are invited to visit the University on Open Days when prospective applicants are welcome to visit and see the campus and departments.

**Open and Visit Days**
We have a number of Open Days during the year to which you are very welcome to attend. Additionally, all offer holders to our undergraduate degree course are invited to attend one of our regular Visit Days. Other, individual visits can be arranged by appointment. You are very welcome to bring a friend or family member any time you visit the University, and we are always happy to answer any queries on the phone or by email.
Student Life

**Campus**

On our bustling compact campus, it’s impossible to walk from one end to the other without bumping into someone you know along the way. Our campus is a vibrant community, with all manner of places to meet, eat and drink, as well as study. We’re committed to providing you with high quality facilities and resources that meet the needs of modern and ambitious students.

**Students’ Union**

The Students’ Union is brimming with opportunities that will make your time at Leicester unforgettable. The Percy Gee building boasts superb facilities, including the fantastic live music venue, O2 Academy Leicester. You are encouraged to get involved with the Students’ Union – there are over 200 student societies covering a huge range – sport, politics, media, performing arts and much, much more. It’s a great way of meeting new people, gaining skills or trying something completely different!

www.leicesterunion.com

**Accommodation**

Our accommodation offers you a wide variety of choice, whether you fancy self-catered or catered, en-suite or shared bathroom facilities.

www.le.ac.uk/accommodation

Private accommodation is available through our lettings agency, SUlets.

www.sulets.com

**Sports Facilities**

You can enjoy a workout, take a swim or build up a sweat in a fitness class at our modern sports centres on campus or at Manor Road (next to our accommodation). You can also get involved with our sports clubs, which welcome members of all abilities. Keen competitors can represent the University through Team Leicester, the hotly-contested Varsity matches and our thriving intramural events.

www.le.ac.uk/sports

**Library**

Our award-winning David Wilson Library is a light, airy, five-storey building providing state-of-the-art services.

The Library is a first-class study environment with wireless access throughout, 24/7 opening during term-time, hundreds of PCs, laptop loans, group study rooms, support staff and a café. Our digital library, available 24/7 on and off campus, contains over 800,000 eBooks, 65,000 electronic journals and online support services. The Library is home to over one million printed volumes and extensive collections of rare books and archives.

Our Librarians have created online guides to help you find information for your coursework and we invest over £7 million each year in the Library to make sure that you have the resources and services you need.

www.le.ac.uk/library

**Attenborough Arts Centre**

The Attenborough Arts Centre is the University’s own arts centre, offering a vibrant programme of events, music, spoken word, and exhibitions in its new gallery and performance spaces. Attenborough Arts offers you the chance to try something new, from a variety of arts courses to hula hoop dancing or creative writing. There are special discounts for students. Or if you just want a break from your studies you can enjoy free lunchtime music performances or have a drink at the café.

www.attenborougharts.com
The city is large enough that it will take you three years to explore, but small enough so you’ll never feel lost... the best of both worlds.
This brochure was published in June 2017. The University of Leicester endeavours to ensure that the content of its prospectus, programme specification, website content and all other materials are complete and accurate. On occasion it may be necessary to make some alterations to particular aspects of a course or module, and where these are minor, for example altering the lecture timetable or location, then we will ensure that you have as much notice as possible of the change to ensure that the disruption to your studies is minimised. However, in exceptional circumstances it may be necessary for the University to cancel or change a programme or part of the specification more substantially. For example, due to the unavailability of key teaching staff, changes or developments in knowledge or teaching methods, the way in which assessment is carried out, or where a course or part of it is over-subscribed to the extent that the quality of teaching would be affected to the detriment of students. In these circumstances, we will contact you as soon as possible and in any event will give you 30 days written notice before the relevant change is due to take place. Where this occurs, we will also and in consultation with you, offer you an alternative course or programme (as appropriate) or the opportunity to cancel your contract with the University and obtain a refund of any advance payments that you have made. Full Terms and Conditions and Senate Regulations governing our teaching programmes can be found here: www.le.ac.uk/offer-terms.