You will study life at all levels of organisation, from the molecular biology of virus replication to the behaviour of animals in their natural habitats, and the functioning of entire ecosystems.

- Flexible, modular degrees spanning a range of disciplines across the biological sciences.
- Integrated Masters degrees in Biology, Biochemistry and Marine Biology.
- A strong focus on analytical, research and quantitative skills provides an extensive training in scientific method.
- Lectures are augmented by substantial practical experience (in lab and field) and by regular small group tutorials.
- An independent research project provides key skills in experimental design, data collection, analysis and presentation, and vital preparation for a career in research.
- Small group, research-led teaching allows in-depth discussion and dissection of current science across a broad range of topics.

**What will I study?**

We offer the whole spectrum of the biological sciences, from molecules and cells to organisms and environments. After a broad-based introduction, you will take ever more specialised courses, culminating in an experimental research project in an area of your choice. You will graduate with a BSc (Honours) degree, such as Biology, Biochemistry or Marine Biology, or with a joint degree together with a second subject such as Economics, or with an Integrated Masters degree.

**First year**

You will study the whole breadth of biology, from molecules and cells through to evolution, ecology and organismal biology. You will gain hands-on experience through participation in weekly lab- and field-based practical classes.

**Second year**

You will begin specialising in areas of interest. You will have the opportunity to study cell and molecular biology, biochemistry, evolution, ecology, zoology and comparative physiology. You will also study research methods and attend lab- or field-based practical classes.

**Third and fourth years (Honours)**

In your first Honours year, you will study advanced topics in your specialism, allowing you to further enhance your subject knowledge and practical skills.

In your second Honours year, you will study in small group, research-led classes and will carry out an individual year-long experimental research project.

**Integrated Masters (five years)**

In your fourth year, you will undertake a year-long research placement within industry or at a research institute, usually away from St Andrews. The following year, you will return to study advanced classes in your chosen specialism.

**Direct entry into second year**

Note that minimum entry requirements are higher for applicants intending direct entry.
plants, as well as many aspects of pathology. The physiology and development of animals and plants, as well as many aspects of pathology.

Our degree programmes:

Behavioural Biology
Firmly set in an evolutionary framework, this degree covers why behaviour evolves, and how it develops. You will examine the building blocks of behaviour, such as its genetic and neural basis, and the role behaviour plays in ecosystem function. You will learn about cutting-edge research in a variety of topics including animal cognition, communication, and culture. Your final year research project might involve collecting data on animals at overseas field sites, on the shores or in the fields of Fife, or in research laboratories in St Andrews.

Biochemistry (BSc or MBiochem)
You will study recent advances in our understanding of the structure and function of macromolecules, alongside cell biology and organismal biology, developing an appreciation of the interdisciplinary nature of biochemistry. You will learn how biochemistry is providing solutions to global challenges, such as the urgent need for novel antibiotics or drugs to combat emerging diseases, and for crops with improved yields. You will study protein structure and function, gene regulation, bioenergetics, infection and disease, and pharmacology. For the MBiochem, see also Integrated Masters on page 55.

Biology (BSc or MBiol)
If you have broad interests in biology and would rather take a wide variety of topics throughout all years, these are the degrees for you. Many of our applicants initially choose a Biology degree and later decide on a more specialised degree. However, we are also keen to support broad-based biologists, who bridge whole-organism and molecular subjects. For the MBiol, see also Integrated Masters on page 55.

Cell Biology
You will concentrate on how molecular processes are organised within the cell and on how cells work together within an organism. This programme provides the basis for understanding the physiology and development of animals and plants, as well as many aspects of pathology.

The programme focuses on the structure and function of cells of animals, plants, and microbes, and on how cells interact as they form tissues and embryos. In addition to a year-long research project, you are able to take research-led, small group classes focused on, for example, advanced microscopy and image-analysis techniques.

Ecology & Conservation
You will discover key principles to understanding the diversity of environments, both terrestrial and aquatic, the processes of evolution and speciation, the interactions between plants and animals, and animal behaviour. You will also see their application in biodiversity, sustainability and conservation issues. You will take a field course on the Pembrokeshire coast and conduct research with one of our leading researchers in ecology and conservation. Your project could focus on the impacts of disturbance on coral reefs, for example, or of wind turbines on bird populations, and will provide crucial training in experimental design, data collection and analysis.

Evolutionary Biology
This degree focuses on the theory of evolution, via courses in evolutionary genetics and evolutionary ecology. The impact of evolution on animal and plant interactions, terrestrial and aquatic ecology, biodiversity and conservation, and infection and disease. You will take a field course on the Pembrokeshire coast and work with one of our outstanding evolutionary biologists for your research project. This might involve research on why animals typically produce an equal ratio of daughters and sons, the genetic basis of speciation, or the molecular evolution of animal development.

Marine Biology (BSc or MMarBiol)
These degrees will teach you about the diversity of marine life from the deep sea to estuaries, and from tiny cells to large marine mammals. Topics at an advanced level will cover marine molecular ecology, genomics and marine microbiology, and the ecology of marine mammals. The shores of the North Sea make St Andrews the ideal place to study marine wildlife in its natural habitat.

You will have the opportunity to learn not only in the lab, but also out in the field. You can access the world-renowned Scottish Oceans Institute, which incorporates the world-class Sea Mammal Research Unit, in order to facilitate your study. For the MMarBiol, see also Integrated Masters on page 55.

Molecular Biology
You will study core topics in molecular biology, such as nucleic acid structure and function, chromosome dynamics, gene structure and expression, molecular genetics, molecular virology, structural biology and bioinformatics. There are advanced classes in protein structure and function, gene expression and infection and immunity. You will choose from a range of small group, research-led classes that currently includes chromosomal DNA replication, chromatin structure and genome dynamics, and molecular virology. Your final year project is typically conducted with one of the internationally-recognised research groups working in the University’s Biomedical Sciences Research Complex.

Zoology
Embark on a wide-ranging exploration of the animal kingdom, encompassing the structure, development, evolution, classification, behaviour, and distribution of all types of animal, both living and extinct. Courses will enable you to understand animals from their genes to their cells, through their physiology and development, to their behaviour and the roles they play in terrestrial and aquatic environments. You will undertake a research project that builds on any question concerning the animal kingdom: the breadth encompasses insects and birds avoiding being eaten, how animals recognise possible mates, and how animals gain information from each other.

Our programmes are designed to prepare you for all kinds of future careers, including research, academic and industry roles.

Biology students participate in the University-wide St Andrews Abroad programme. You may also have the opportunity to participate in our School Abroad exchange programme. For information about study abroad options, please see: www.st-andrews.ac.uk/study-abroad

Careers
Graduates from the School of Biology have a wide range of skills sought by employers: lab and field data collection, data handling and presentation, problem solving, teamwork, planning, and organisation and communication skills. Our graduates have secure employment as clinical scientists, consultant ecologists, marine mammal scientists, museum curators and school teachers. Beyond biology, our recent graduates have gained employment in a wide variety of business sectors such as marketing and finance. Others have gone on to study for a wide range of Masters and PhD programmes in the UK and overseas.

Additional compulsory costs
Students need to cover costs for lab and course materials of up to £25 per year. In third year up to £100 is required for either a field trip, a reading party excursion or a biochemistry lab class. Some fourth year optional classes involve substantial additional costs. Students on Integrated Masters degrees may also encounter increased accommodation costs in their fourth year if they choose to take industry or research placements outside St Andrews.

“Studying at St Andrews has given me much more than just an education. It has instantly given me the feeling of home and it never ceases to amaze me how much the University cares about the wellbeing of the students. Thanks to the flexibility of the schedules, I was able to engage in other sciences beside Biology in the first year, and explore different aspects of the subject in the second year.”

Katarina (Bratislava, Slovakia)