

GO BEYOND BOUNDARIES



# School of Biological Sciences

UNDERGRADUATE GUIDE



→ **TOP 20 UNIVERSITY IN**  
**2 UK LEAGUE TABLES**

Times & Sunday Times Good University Guide 2024  
and Guardian University Guide 2024

# Welcome

From the moment you join our vibrant and friendly community we are committed to ensuring that your experience is excellent. We take pride in the diversity and quality of our teaching and research, both of which are world renowned.

We offer a suite of undergraduate and postgraduate programmes that reflect your study aspirations and needs, within a framework of flexibility. Our exciting curriculum enables a provision of transferable skills, which explains why University of Aberdeen graduates have some of the highest UK statistics in employability.

With its own zoology museum, botanic gardens and field station on the Cromarty Firth, the School of Biological Sciences offers students a unique learning experience.

I very much hope you enjoy meeting the key staff in this brochure and learn more about what we have to offer. Please contact us for specific details and we will be delighted to host a visit, to let you see first-hand why you should select to join us in Aberdeen and become part of our team.

**Professor Graeme Paton**  
Head of School



# Your learning experience

Exciting field work opportunities are available to all students - where academic staff provide structured activities to support your learning.




Aberdeen is a great place to study Biological Sciences because we have good access to fantastic natural habitats including coast, moorland, mountains, freshwaters and forests. We also have our own field station at Cromarty on the Moray Firth where our sea mammal researchers are based.

Many of the academic staff in Biological Sciences are involved in field research in Scotland and overseas, from the Tropics to the Arctic, and our experiences influence what we teach on our courses.

Teaching at the School of Biological Sciences is research-led in three main ways:

- Firstly, we have a team of talented and enthusiastic academics who apply educational research to their teaching and learning methods. They lead the way in terms of innovation in teaching delivery and assessment.
- Secondly, our leading researchers are engaged in teaching, for example, by delivering lectures to first year students and specialist course options to fourth year students. Our curriculum is informed by expert knowledge and insight into the future priorities in the disciplines. Our course materials are continually updated to ensure they reflect current understanding and perspectives.
- Thirdly, our students are actively involved in scientific research. In Senior Honours (year 4), our students conduct independent research within one of our research groups or with one of our collaborating institutions. For many students, this project experience is pivotal because it influences their career choice. In years 1, 2 and 3, students conduct investigations as part of their core courses, thereby developing skills and understanding of the scientific process.

As testimony of the high quality of our student projects, more than 40 projects in the past eight years have resulted in scientific publications.



“Lectures are very informative and helpful. All lecturers welcome ideas and questions which is helpful for the other students. The slides are uploaded onto MyAberdeen, which is an interactive website for all our courses.”

ANDREA DE COSTA -  
BSC BIOLOGY

# Combining teaching with research excellence

## **Professor Sam Martin**

Sam is a passionate fish biologist and teaches on our popular Diversity of Life course. His teaching focuses on fish biology as does his research interests. Sam uses state of the art genomics approaches to study nutrition, health and evolutionary adaptations in fish.



## **Professor Cécile Gubry-Rangin**

Cécile teaches environmental microbiology in our Diversity of Life and Fundamentals of Marine Biology courses. Her research is directed towards understanding ecological adaptations of microorganism populations.



**Professor Lesley Lancaster**

Lesley teaches our Global Change Biology course. Her research focuses on evolution under climate change; one of her current study systems is Scottish damselflies.



**Professor David Burslem**

David is an ecologist and conservation biologist who teaches these subjects across all levels in the School of Biological Sciences. He has a strong interest in conserving tropical forests and his research is dedicated to finding solutions to the biodiversity crisis linked to tropical deforestation.

# Key teaching staff



## **Professor Michelle Pinard**

Michelle is the Director of Education in the School and will be someone that you will be seeing throughout your programme. Michelle is a tropical forest ecologist with research interests in conservation science. Michelle takes overall responsibility for leading and coordinating the teaching and learning activities in the School.



## **Dr John Baird**

John coordinates your core level 1 course Frontiers in Biological Sciences and will be one of the first people you will meet when you arrive at the University. John is an entomologist with research interests in disease-causing insects such as mosquitoes and fleas and ecologically important insects such as beetles, ants and mayflies.



## **Amie Connolly**

Amie is Team Lead for Teaching Support in the School. You will meet her and her team in our Student Information Centre in the Zoology Building.

Staff in the School are friendly, helpful and available to assist students throughout their studies.

### **If you have any questions:**

Please call us on 01224 272090 or email us at [study@abdn.ac.uk](mailto:study@abdn.ac.uk)



# Undergraduate degree programmes

In the School we offer ten undergraduate programmes. If you are still deciding which direction you would like to take in your studies, our programmes are designed to be flexible so that students can easily transfer from one programme to another.

## **BSc Biology**

By having courses in animal and plant sciences, terrestrial ecology and marine biology as well as combining lab and field-based activities, our BSc Biology degree provides you with a broad foundation in biology. As your degree develops, you take advantage of our residential field courses and the programme's broad scope ensures that you benefit from the range of international expertise we have across the School. As you go through the different levels, you then begin to specialise, in particular by carrying out an extended research project - this will be in an area of biology in which you have developed a particular interest.

**Our programmes allow students to take courses from other parts of the University, so if you have an interest in medical sciences, geography, a language or something else, you can sample courses from elsewhere in your first two years to help you decide what best suits you.**





### **BSc Conservation Biology**

This degree provides training in both applied and theoretical biology, with courses that include animal and plant science, ecology and geography, leading to increasing specialisation in conservation from second year onwards. Practitioners from across the sector contribute to our programme, by providing lectures, hosting field visits and supporting students during their final year projects. Conservation Biology students will have the opportunity to take part in residential field courses exploring current conservation issues in Scotland. Teaching staff are actively involved in a wide range of conservation issues in the UK and beyond.

### **BSc Ecology**

This degree combines the biology and ecology of plants, animals and ecosystems, with the opportunity to include our particular specialisms in marine biology and conservation biology in the curriculum. The degree is taught by a wide range of staff active in field ecological research, from the Tropics to the Arctic, from the deep ocean to mountain summits. Students can gain specialist knowledge in behavioural ecology, ecological modelling, evolutionary ecology and experimental community ecology. Students will have the opportunity to attend residential field courses and do a major ecological research project.



**WE WERE AWARDED THE QUEEN'S ANNIVERSARY PRIZE IN 2021 FOR OUR WORLD-LEADING RESEARCH AND TEACHING IN SOIL SCIENCE PROMOTING THE CONTROL OF GREENHOUSE GAS EMISSIONS AND SUSTAINABLE FOOD PRODUCTION.**

### **BSc Environmental Science**

The environmental science programme combines courses in biology, chemistry, ecology, soil science, geography and geology with contributions from industrial and government agency representatives to provide state of the art training in environmental science. The programme benefits from excellent input from staff with strong research interests in environmental analysis, remediation technology and biogeochemistry. Lab-based and field-based teaching is combined to provide students with a diverse skill set.

### **BSc Plant & Soil Science**

The programme provides a unique opportunity for study of plant and soil interactions with excellent input from staff with internationally-renowned research expertise. The programme is enhanced by our location in Aberdeen with great laboratory, glasshouse and field facilities. Students benefit from a soils course rich in field-based learning, practical courses that provide lab training in environmental analysis and a final year project that provides an opportunity to specialise in a chosen area.

## **BSc Zoology**

Students on this degree study all aspects of animal life from the microscopic single-celled protozoa to the whales, in all habitats from the ultra-deep oceans to the Highlands of Scotland. Students have flexibility in choice of courses; for example, courses are available in population ecology, comparative physiology, animal behaviour, animal evolution, animal management and welfare, biology and control of infectious diseases, and wildlife conservation and management. Residential field courses are attended in the second year with optional trips in other years.

## **BSc Marine Biology**

The programme combines knowledge of the biology of marine organisms with a detailed understanding of how marine ecosystems function. Students benefit from a combination of classroom, practical and field-based learning activities. The degree is taught by staff with expertise in a range of marine environments including the deep sea, open ocean and coastal zone. Students undertake independent research projects on benthic invertebrates, fish, dolphins, whales, seals, seabirds, cephalopods and sharks. Residential field courses are offered for second and third year students in Scotland and overseas.





### **BSc Biological Sciences**

This programme allows you to choose courses from the broad range of subjects offered to our undergraduate students, while ensuring that you take advantage of our core knowledge and skills-based courses that all students take. You will develop a broad understanding of the nature of living things, from molecules and cells to organisms and populations, communities and biomes, but crucially, you will become a specialist in the area that is of most interest to you.

### **BSc Animal Behaviour**

Animal Behaviour is an interdisciplinary degree and field of science that examines the interactions between behaviour and biology. An organism's evolutionary history and current environmental conditions drive behaviour, and feedback from behavioural decisions in turn drives evolutionary processes. Our Animal Behaviour degree differs from our Zoology degree in that it includes courses from Psychology in the first two years.

### **BSc Animal Behaviour and Welfare**

Animal Behaviour and Welfare prepares students for graduate careers by providing an exciting opportunity to explore the science that underpins our understanding of animal behaviour and welfare. We are the only University in Scotland to offer HND Animal Care students the opportunity to "top up" their qualifications with a BSc Honours degree. This additional qualification will enhance your employability and open up additional opportunities in terms of career options and further study.





## Our facilities

Our students benefit from the School's facilities located on campus and beyond.

### Teaching labs

Students in all degree programmes have practical classes in our teaching laboratories. Students work individually and in small groups. This arrangement allows students to carry out experiments, swap ideas and get support from teaching staff while using the computers to access the latest scientific developments.

## Research labs and infrastructure

Many students conduct their final year projects in one of our research labs, working alongside research scientists. Our state-of-the-art facilities for gene sequencing, analysing plant and soil samples, studying animal energetics and the deep ocean are commonly used in student projects.

In Old Aberdeen, the Cruickshank Botanical Garden, the Zoology Museum, the Aberdeen Biodiversity Centre, our greenhouses and our fresh and salt water aquaria provide students with a diverse set of resources to draw on for their studies.

## Science Teaching Hub

Our Science Teaching Hub opened in 2022, providing students with advanced analytical tools and flexible, safe laboratory spaces. Students have access to research grade equipment in a digitally focussed, paperless environment. The open plan layout offers a fantastic opportunity for interdisciplinary and collaborative teaching.

Find out more: [abdn.ac.uk/sth](https://abdn.ac.uk/sth)

**Our Lighthouse Field Station celebrated its 30th year in 2020; our research has been reported in over 130 publications and had important impacts on the way we understand and manage our marine ecosystems.**

## Field centres

The School of Biological Sciences uses a range of field centres throughout Scotland and elsewhere in the UK. Aberdeen-based students use the field stations during residential field courses and some will conduct their final year projects at the field stations.

The Lighthouse Field Station is situated on Cromarty firth. The research focuses mainly on sea mammals and sea birds and as well as getting involved in research, students on the Biodiversity field course work at the station as part of the course.

Find out more: [abdn.ac.uk/lighthouse](https://abdn.ac.uk/lighthouse)



# Study Abroad

The University of Aberdeen has academic links around the globe and there are many opportunities for current students to spend a semester or a year abroad at some of the most distinguished state universities and private colleges in America, Canada or Hong Kong to name but a few.

Students who choose to go on an exchange programme normally go in their second year of study. The year they spend abroad is an integral part of their Aberdeen degree and not an additional year. Credits gained are recognised by the University of Aberdeen and incorporated into the student's academic record.



## Cindy Babirye Nzyani



I spent my semester abroad at University College Cork in Ireland. Travelling around Ireland was incredible, since every part I visited seemed more beautiful than the one before, but it was meeting many different people, that made my time in Cork so unforgettable. Through them, I not only got the chance to learn new words in other languages, but was also encouraged to use the opportunity to reinvent myself and try out new things. I joined the choir society and started playing hockey - a sport I thoroughly enjoy and have continued playing in Aberdeen. I came back from my exchange in awe of what Ireland has to offer, with a new-found love for hockey and with the desire to visit many more places.

## Michael Gallagher



I went on exchange to Queen's University, Ontario during my second year as an undergraduate. Without a doubt this was the best overall year of my life. Experiencing a new university was fun but the new people and places definitely made this year what it was. During the nine academic months, I visited six different countries across North America and met countless people from all over the world.





# Careers and employability

One of the great advantages of having a Biological Sciences degree from the University of Aberdeen is that it provides you with a very broad range of skills to offer employers.

Not only do we train students in scientific methodology in the laboratory and in the field, we incorporate what we call 'graduate attributes' into the whole curriculum. Employers now expect an impressive list of skills, knowledge and experience in their graduate recruits and we aim to help you acquire these.



# Professional links

We have strong local, national and international links to industry, government bodies, charities and other research institutions.



Our research and professional networks are integral to our work and benefit our students in several ways:

- First, they benefit from exposure to policy-makers, practitioners, regulatory professionals and experts in our taught classes and field trips.
- Secondly, our curriculum is informed by an employer advisory board that provides the School with insight into changing requirements of employers.
- Thirdly, many students take advantage of our collaborators' facilities and expertise for their research projects or placement.





### **Professor Xavier Lambin**

who teaches on the third year Population Ecology course and a fourth year option in Wildlife Conservation and Management, carries out an annual project surveying and trapping water voles with his research group. Xavier's research often is conducted with stakeholders and end users, for example, Forest Enterprise Scotland and Crayfish Nairn River Trust.

### **Dr Tara Marshall**

teaches on a fourth year course titled Sustainable Management of Marine Resources which has featured guest lectures from Marine Scotland, the Scottish White Fish Producers Association, and the Scottish Fishermen's Federation. Assessments are designed to give students experiences that are relevant to working with any of these organisations. Her research includes projects that develop practical tools that can be used by the Scottish fishing industry.



### **Dr Alan Bowman**

is the coordinator of our Zoology programme. His pioneering research on varroa mites that kill off honey bee colonies resulted in Alan being named one of the world's most influential men by Esquire magazine. Alan works closely with the Scottish Beekeepers Association and the Scottish Government's Animal Health Division and several national and international animal health companies.

# What our students say

Our computing and library facilities are geared towards your needs and we are especially proud of our dedicated Zoology museum and beautiful Cruickshank Botanic Gardens.



**Victor Montalvo**  
BSc Zoology



Whilst studying Zoology at the University of Aberdeen, the mix of lectures, labs, computer labs and field courses offered was unbelievable. On top of these, we had access to a wealth of extracurricular activities available with the support of the School of Biological Sciences, from society events to term-time and summer internships getting involved in real research. What I loved most was that I had a lot of freedom throughout my degree to explore anything in the School of Biological Sciences that interested me and I was always supported by a network of professors. They made sure to build good relationships with their students and were always available to provide study advice about courses, exchanges and our future careers.



# Where your Biological Sciences degree can take you

## Harrison Lewis

BSc Zoology

Audio producer, researcher and podcast maker

I owe an awful lot to the biological science staff. Throughout my education I was mentored and offered the opportunity to discuss my future. Today I am a freelance radio producer, pitching, interviewing and editing a variety of scientific topics for broadcasts and podcasts. Due to my education I am deemed capable of interpreting and relaying a wide range of the complex things. I get the opportunity to speak to tech geeks, astrophysicists and my favourite biological scientists/conservationists.



## Aleks Mitseva

BSc Conservation Biology

Research Assistant in the Bioacoustics lab, Aarhus University

Undertaking the BSc in Conservation Biology has been extremely useful for my current position as a research assistant at the Bioacoustics lab of Aarhus University. My journey as an assistant has taken me through various areas of scientific research, from analysing seal vocalisations and defining sound sources in Greenlandic waters, to conducting my own study. The skills I developed during my time in Aberdeen, especially in my last year when I had to develop and execute a research project, have been extremely valuable.



# 10 reasons to choose Aberdeen

## **01** The academic strength you would expect from a 500 year old university – yet right at the forefront for careers in the 21st century

A thriving, cosmopolitan community with students from 130 countries set within a beautiful, historic campus that has seen five Nobel Prizes.

## **02** Choice and flexibility

It's your degree and we believe it should be planned around you, with the freedom to plan your own programme of study from a wide range of options.

## **03** Opportunities to develop yourself and your interests

Not only academic qualifications to rival the best, but also personal, communication and teamwork skills to make you an all-round achiever in whatever you choose to do. We boast over 220 clubs and societies for students to join and offer excellent on-campus sports facilities.

## **04** The very best learning resources

Aberdeen provides a unique learning environment with easy access to fantastic natural environments for fieldwork purposes. You will also have access to our well-equipped research field station.

## **05** Research-led teaching

Our teaching is informed by our research. We are ranked in the top quartile for research power in Earth Systems and Environmental Sciences (REF 2021).

## **06** A supportive community

A self-contained friendly campus in a friendly city; we will do everything we can to help you feel at home quickly. We have excellent support services to ensure you have access to all the support and guidance you might need - academic, personal, medical or financial. All new students are guaranteed a place in student accommodation, either on the campus or close by.

**07 A proven track record for employment, with the best headstart your career can get**  
Our experience and connections can help secure that all-important first step on the ladder to a successful career.

**08 Degrees which are recognised and respected worldwide**  
Our programmes are both current and well-established with professional accreditation, work-related placements, plus the opportunity to study abroad.

**09 A buzzing, friendly city that has it all**  
Aberdeen is everything a student city should be and more! Historic, international, fashionable and friendly.

**10 We're on the map!**  
Aberdeen is probably closer than you think. Affordable and regular air, rail and bus connections will get you around Scotland, the UK and further afield in no time.

**Any questions?** Phone us on 01224 272090 or email [study@abdn.ac.uk](mailto:study@abdn.ac.uk)



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