The School of Biological Sciences

Undergraduate Guide

www.abdn.ac.uk/sbs
Welcome to the School of Biological Sciences (SBS) at the University of Aberdeen.

It is my hope that you will join our vibrant and friendly community, and enable us to help you achieve your aspirations and potential. We pride ourselves in excellence in both teaching and research. As our teaching is research-led you will be taught by some of the top academics in the UK, delivered in the best possible environment of world class facilities.

We offer a range of degrees, and many choices within these, allowing you to shape your study to suit your career aspirations and interests. Our exciting curriculum and the opportunities we provide for you to enhance your transferable skills and employability, mean that when you graduate you will leave this University empowered and with the right skill set for the next stage of your career.

I hope you enjoy reading about the opportunities there are for you in the School of Biological Sciences.

**Professor Liz Baggs**
Head of School

[www.abdn.ac.uk/sbs](http://www.abdn.ac.uk/sbs)
With its own zoology museum, botanic gardens and field stations in key locations across Scotland, the School of Biological Sciences offers students a unique learning experience.
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 stations, in the beautiful village of Bettyhill on the north coast of Scotland, and 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.
Research-led: our teaching is inspired by our research.

Teaching at the SBS is research-led in three main ways:

– Firstly, we have a team of talented and enthusiastic teaching fellows 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 research stars are engaged in teaching, for example, by delivering tutorials 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 high quality of our student projects, more than 40 projects in the past eight years have resulted in scientific publications. Also, one of our students Marius Wenzel recently received the Darwin Prize for the best undergraduate project in the UK in his year.

“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 Pete Smith, a leader in climate change science, has just published findings that indicate that radical action is required to avoid dangerous climate change—he is one of our first year tutors.

Professor Xavier Lambin, who teaches the 3rd year Animal Population Ecology course and a 4th year option in Wildlife Conservation and Management, carries out an annual project surveying and trapping water voles with his research group.
Dr Alan Jamieson, who coordinates and teaches the second year Ocean Biology course has just been involved in a research expedition to one of the deepest ocean trenches.

Dr Helen Dooley is a first year tutor and she also teaches in the second year animal physiology course. Helen and her team are currently investigating if antibodies found naturally in sharks could be used to target breast cancer.
Key teaching staff

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

Dr Michelle Pinard is the Director of Teaching in the School and will be someone that you will be seeing throughout your programme. She helps with the first year Organismal Biology course, but also teaches into Community Ecology and Sustainable Resource Management.

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.

Any questions?
Phone us on 01224 272861
or Email zoooffice@abdn.ac.uk

Dr John Baird coordinates your core level 1 course Organismal Biology 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.

As well as being heavily involved in level 1 teaching, John teaches on many other courses and coordinates the BSc in Biology and the MSci in Biological Sciences. Outside of work, John plays football, kayaks and loves going to concerts. He also loves dogs and you will certainly see him with his spaniels in Cruickshank Botanical Gardens.
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.

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

BSc BIOLOGY:

The BSc Biology degree provides students with a broad base in biology by combining courses in both animal and plant sciences, terrestrial ecology and marine biology, and lab – and field-based activities. Biology students take advantage of our residential field courses and can choose options across all four years of study. As the degree develops, students can specialise, in particular by carrying out an extended research project in an area of biology in which you have developed a particular interest.
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 have residential field courses during each of the first three years, learning identification and field sampling techniques, and 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 molecular ecology, ecological modelling and evolutionary ecology. Students attend at least two residential field courses, do a major ecological research project and many choose to undertake an overseas expedition.

www.abdn.ac.uk/sbs
**BSc ENVIRONMENTAL SCIENCE:**

The environmental science programme combines courses in biology, chemistry, ecology and soil science, 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 FORESTRY AND BSc FOREST SCIENCES:**

These degrees bring together the disciplines of forestry, ecology, zoology, and plant and soil science to provide students with an integrated understanding of forest ecosystems and how they can be managed sustainably. Scotland provides a unique and diverse environment for studying native forest management, forest restoration and commercial forestry. Easy access to large areas of forest, including remnants of the internationally important native Caledonian pine forest, enhances the learning environment. The forestry programmes include regular opportunities for field-based learning and residential field courses are offered in all four years. Graduates from these programmes are well-equipped for the general graduate job market but also the more specialised, forestry job market; both degrees are professionally accredited by the UK Institute of Chartered Foresters.
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 Florida.

BSc PLANT AND SOIL SCIENCES:
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 – as well as access to a long-standing herbarium. Students benefit from a field course where plant identification skills are taught, 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.

www.abdn.ac.uk/sbs
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 a great deal of flexibility in choice of courses; for example, courses are available in environmental physiology, population ecology, animal behaviour, animal evolution, parasitology and wildlife management. Students are taught by a wide range of internationally recognized researchers who offer opportunities of independent research projects in the final year. Residential field courses are attended in the second and third years. BSc Zoology is the largest degree programme in the School of Biological Sciences. Students graduate with a diverse skill set, strong quantitative training and high employability; our graduates find employment in agriculture, fisheries, environmental consultancies, wildlife and conservation organisations and education.

MSci IN BIOLOGICAL SCIENCES:

The MSci is an undergraduate masters programme. Along with their subject-specific disciplinary training, students gain skills in grant writing, public communication of science and complete two independent research projects rather than one as is typical in our four year degree programmes. Students can enter this programme from year one or transfer into the programme from any of the other SBS programmes at the end of year 3.

Depending on qualifications on entry to the University and the student’s own preference, all of our BSc degrees can be taken over 3 or 4 years, meaning students can enter at Level 1 or Level 2. The MSci Biological Sciences also allows students to enter at level 1 or 2, so the degree can take either 4 or 5 years.
Our facilities

Teaching labs

Students in all degree programmes have practical classes in our teaching laboratories. Students work individually and in small groups at pods (as we call them). This arrangement allows students to carry out experiments, swap ideas, 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.
Technology developed at Oceanlab enables us to carry out the deepest oceanic research of any UK institution and find new species in trenches up to 11 km deep.

Field centres

The School of Biological Sciences uses a range of field centres throughout Scotland and elsewhere in the UK. The closest to the main campus is Oceanlab, which is our subsea research facility situated 20 km north of Aberdeen. Students can get involved in research both at a local level in the Ythan estuary and North Sea or further afield in the Indian, Pacific or Southern Oceans.

For more info on Oceanlab visit: www.abdn.ac.uk/oceanlab

Other field centres include the Lighthouse Field Station which 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.

See www.abdn.ac.uk/lighthouse for more information.

In addition, the Bettyhill Field Centre is situated in the far north coast of mainland Scotland and is where students visit for the Plant Ecology and Taxonomy field course.
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.

**Michael Gallagher**
BSc Zoology

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 9 academic months, I visited 6 different countries across North America and met countless people from all over the world.”

**Corinne Hudson**
BSc Forestry

The main things I got from my year abroad at Clemson University were the chances to meet people from a range of cultures and backgrounds, experiencing American football and the American culture in general, and being able to travel across America with friends I made during my time there. My favourite experience was volunteering with other Clemson students during Spring Break, we went to Florida to reconstruct oyster reefs and undertake other environmental projects in the area.”
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.
Preparing you for industry

“Euan Mackenzie
I am currently on a one year work placement with Shell UK Ltd, based in Aberdeen. I work in the environmental department for North Sea oil and gas production ensuring that all operations conform with environmental legislation and that the appropriate permits and licenses have been granted.

Shell also offers the opportunity to move between departments within the company depending on your interests which has allowed me to gain experience in anything from law and legislation to drill engineering.

I decided to temporarily suspend my studies in Zoology to gain some industry experience to improve my employment prospects in an increasingly competitive market. The flexibility and assistance provided by the University and career service to help me gain this work placement was excellent. I would thoroughly recommend the work placements and internships promoted by the University as I have already gained considerable practical experience for when I graduate.”

“Rachel Bennet
Between my third and fourth year I was offered the opportunity to take a year out and do a placement year. This consisted of working with the Forestry Commission in every aspect of the organisation, from forest management, to running events in the forest and environmental work.

My placement was in Fort William and the surrounding area which gave me a great opportunity to see the other side of Scotland and experience a different way of life. Working in the industry has increased my knowledge of the subject that I am studying and has given me new skills that will no doubt benefit me in future employment.

When doing a placement year not only do you take away a better understanding of the field of work but you also get to experience a new place of living. Forestry gets you out into some of the most amazing wild places and you get to meet some of the most inspiring people.”
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.

The SBS has developed an excellent relationship with Forest Enterprise Scotland, part of the Forestry Commission. This partnership has involved co-supervision and part-funding for four successful MSc and BSc projects on biodiversity issues as well as employing numerous SBS students for short term contracts.
Where your Biological Sciences degree can take you...

**Feruzah Attah**  
BSc Environmental Science

Having completed her BSc in Environmental Science Feruzah is now studying for an MSc Environmental Technology at Imperial College London.

**Andy Scobie**  
BSc Ecology

Andy is Rare Plants Officer for the Cairngorms National Park, having previously done a PhD on orchids and other rare plants and worked as a plant ecologist at a research institute.

**Debbie Banks**  
BSc Zoology

Debbie gathers evidence of illegal trade in tiger skins in China for the Environmental Investigation Agency.
I think the opportunity to carry out an honours project is a wonderful experience for students. I greatly enjoyed being able to work in lab settings outside of the University of Aberdeen as it improved my knowledge of how they operate and all the different people you interact with.

I have gained better research skills and most importantly it has opened my mind to a more research-based career, which is not something I was particularly interested in beforehand. I have come away from the experience with improved skills and some great friends who I regularly keep in contact with, giving me a good reason to visit China again in the future.”

Abby Gerrard
BSc Zoology, Honours project – China

Craig Johnson
BSc Zoology / MSc Ecology

Craig is currently the Ecologist for the ‘Oman Earthwatch Program’. Most recently he has been involved in leading teams to build the capacity for monitoring processes focusing on both flora and fauna throughout the Hajar Mountains, Oman.

Anna Swift
BSc Conservation Biology

Anna is an ecologist with an international engineering company. She has also worked on ancient woodlands with the Sussex Wildlife Trust.
10 reasons to choose Aberdeen

1. 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 120 countries set within a beautiful, historic campus that has seen five Nobel Prizes.

2. Degrees which are recognised and respected worldwide

Unique programme options with professional accreditation, industrial placements, plus the opportunity to study abroad.

3. 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.

4. A proven track record for employment, with the best head-start your career can get

Our experience and connections can help secure that all-important first step on the ladder to a successful career. 93% of University of Aberdeen students enter directly into good jobs, research posts or further study within six months of graduating.

5. 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 150 clubs and societies for students to join and offer excellent on-campus sports facilities.
6. **The very best learning resources**
   We pride ourselves on providing state-of-the-art learning resources for our students. Computing and library facilities are geared towards your needs and we are especially proud of our exceptional museums and special collections.

7. **A supportive community**
   A self-contained friendly campus in a friendly city; we will do everything we can to help you quickly feel at home. Our support services rank with the best in the UK and we aim to make sure, right from the start, that you have access to any guidance you might need – academic, personal, medical or financial.

8. **First class accommodation**
   All new students are guaranteed a place in student accommodation, either on the campus or close by – so no need to set the alarm too early!

9. **A buzzing, friendly city that has it all**
   Aberdeen is everything a student city should be and more! Historic, international, fashionable and friendly, Aberdeen is the perfect place to live and study. Aberdeen has also been voted the best place to be a student in the UK by a leading accommodation website.

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

Phone us on 01224 272861 or
Email zoooffice@abdn.ac.uk