



Department of Life Sciences

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Undergraduate studies in

# Ecological Sciences

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# Contents

Welcome	p.1
Our courses	p.2
Integrated Masters	p.16
Integrated year in industry	p.18
Global opportunities	p.20
Studying through the medium of Welsh	p.22
Research	p.24
Research highlights	p.26
How to apply	p.28



## Important information

The programme information published in this brochure was correct at time of going to print (May 2022) and may be subject to change. Prospective students are advised to check the definitive programme information, including entry requirements, that is available on our website before making an application, to ensure that the programme meets their needs.

# Welcome

Welcome to the Department of Life Sciences, a world-class research and education centre based here at Aberystwyth University. Our mission is to improve the health and well-being of people through research, education and engagement activities. We believe this depends on delivering a healthy environment, healthy plants and animals, and healthy businesses.

We provide an excellent learning environment for both your academic and personal development, with state-of-the-art facilities and generous scholarships. Your course will be brought to life by our committed and inspiring lecturers. Much of our teaching is led by the cutting-edge research interests of our staff.

In the Department of Life Sciences we are able to offer you a wide range of learning opportunities, including interactive lectures and seminars, laboratory classes, small group tutorials, and field courses. The flexibility of being able to select from a range of diverse modules means you can tailor your course to your individual interests. You will be assessed in a variety of ways, including exams, laboratory reports, presentations and essays, all of which are designed to enhance your subject-specific, personal, and transferable skillsets.

Aberystwyth lies on the shores of Cardigan Bay on the west coast of Wales, set in stunning natural surroundings. The locality offers a fine coastline with expanses of rolling moorland and wooded valleys immediately inland, making Aberystwyth University the ideal place to study ecology and related subjects.

Further information about our courses and other opportunities can be found in this booklet. Why not join us on an Open Day or Applicant Visiting Day to see for yourself what makes Aberystwyth such an incredible place to study.

**Professor Iain Donnison**  
Head of Department



# Our courses

## Single Honours

Animal Behaviour	p.3
Biology and Climate Change	p.4
Ecology	p.6
Life Sciences	p.8
Marine and Freshwater Biology	p.9
Plant Biology	p.10
Wildlife Conservation	p.12
Zoology	p.14

## Integrated Masters Schemes

Marine and Freshwater Biology	p.16
Zoology	p.16

## We also offer:

- Agriculture (BSc, 3 years)
- Agriculture (top-up scheme) (BSc, 1 year)
- Agriculture (Foundation) (FdSc, 2 years)
- Agriculture (MAg, 4 years)
- Agriculture with Animal Science (BSc, 3 years)
- Agriculture with Animal Science (MAg, 4 years)
- Agriculture with Business Management (BSc, 3 years)
- Animal Science (BSc, 3 years)
- Biochemistry (BSc, 3 years)
- Biochemistry (MBiol, 4 years)
- Biology (BSc, 3 years)
- Biology (Foundation) (FdSc, 2 years)
- Biology (MBiol, 4 years)
- Biomedical Sciences (BSc, 3 years)
- Equine and Veterinary Bioscience (BSc, 3 years)
- Equine Science (BSc, 3 years)
- Equine Studies (Foundation) (FdSc, 2 years)
- Equine Studies (top-up scheme) (BSc, 1 year)
- Genetics (BSc, 3 years)
- Genetics and Biochemistry (BSc, 3 years)
- Human Biology and Health (BSc, 3 years)
- Microbiology (BSc, 3 years)
- Microbiology (MBiol, 4 years)
- Sport and Exercise Science (BSc, 3 years)
- Sport and Exercise Science (Foundation) (FdSc, 2 years)
- Veterinary Biosciences (BSc, 3 years)

# Animal Behaviour

## BSc (Hons)

With integrated year in industry

(C122)

Aberystwyth is a great place to explore the behaviours of wild and domesticated animals. Accessible nearby habitats enable the observation of a diverse range of charismatic wild animal species, while domesticated species are housed in our own farms, equine centre and aquarium facilities. Many of our teaching staff are active researchers, investigating the ecology and evolution of behaviour or its neurobiological mechanisms.

Our Animal Behaviour degree will equip you with an intricate knowledge of animal behaviour, firmly grounded within a broader understanding of the biological sciences. You will develop scientific, observational and analytical skills needed to investigate animal behaviour, and will apply those skills through practical study of vertebrate and invertebrate animals in a range of natural and captive environments and laboratory settings. Teaching by practising veterinary surgeons will help you to apply your understanding of animal behaviour to the field of animal health and welfare.

Opportunities for Animal Behaviour students at Aberystwyth include:


- access to aquarium facilities for the study of fish and aquatic invertebrates; a beech woodland hosting over 200 bird nest boxes; and our collection of historic biological specimens
- visits to study animals in captive and natural environments, such as the nearby Dyfi Estuary – an important overwintering site for migratory birds
- an optional seven-day residential field course to immerse yourself in hands-on investigation of animal behaviour
- innovative, technology-enhanced teaching by active researchers and practising veterinarians.

## Employability

As a graduate of Animal Behaviour, you will be well prepared for a successful career in environmental education, research science, conservation, animal welfare or ecological consultancy.

## Key Facts

 Degree type: BSc.

 UCAS Code: C120 (C122 with integrated year in industry).

 Duration: 3 years (C122 is 4 years).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Biochemistry and the Cellular Basis of Life
- Biological Thought and Discovery
- Comparative Animal Physiology
- Disease Diagnosis and Control
- Ecology \*
- Evolution and the Diversity of Life
- Exploring Genetics
- Study and Communication Skills \*
- Wildlife Forensics.

### Second year:

- Behavioural Ecology
- Ethology
- Research Methods \*
- Vertebrate Zoology
- Veterinary Health.

### Final year:

- Advanced Animal Behaviour
- Behaviour and Welfare of Domesticated Animals
- Research Project \*.

See our website for the optional modules you may select to develop your specialist interests.

\* also available partially or entirely through the me

## Accredited by:



# Biology and Climate Change

## BSc (Hons)

With integrated year in industry

(FC72)

The Biology and Climate Change degree explores creative ways of responding to the challenges and opportunities of the current climate crisis, and will equip you with relevant subject-specific knowledge alongside the multi-disciplinary, interpersonal skills and attributes needed to create a more just and sustainable world. If your intention involves having a positive impact on the world, this course will set you securely on that rewarding journey.

On this degree, you will learn about the science underpinning climate, and how humans have changed these processes in recent times. You will explore the impacts of climate change on biodiversity at the level of species, habitats and ecosystems, and the scope for organisms and populations to evolve in the light of this threat. By working across disciplines, you will learn the need for both scientific research and governance in tackling these important issues.

Opportunities for Biology and Climate Change students at Aberystwyth include:

- the great variety of local habitats and ecosystems, both marine and terrestrial, and ideal locations to study the impacts of climate change on biodiversity, and the scope for mitigation
- the chance to carry out field research, both locally and abroad
- the option of a range of overseas courses
- the chance to work with established academic researchers who work on various aspects of the past, present and future effects of global change on natural ecosystems.

### Employability

Our graduates are well-placed for roles in climate change management, adaptation and mitigation and careers in related areas, such as environmental education and consultancy or conservation.

## Key Facts



Degree type: BSc.



UCAS Code: FC71 (FC72 with integrated year in industry).



Duration: 3 years (FC72 is 4 years).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Climate and Climate Change
- The Biosphere
- Introduction to Conservation
- The Green Planet \*
- Evolution and Diversity of Life
- Ecology \*
- Microbial Diversity \*
- Study and Communication Skills \*.

### Second year:

- Climate Change: Plants, Animals and Ecosystems
- The Governance of Climate Change
- Research Methods \*.

### Final year:

- Research Project \*
- Global Biodiversity Conservation.

See our website for the optional modules you may select to develop your specialist interests.

\* also available partially or entirely through the medium of Welsh.



# Ecology

## BSc (Hons)

With integrated year in industry

(C181)

Due to the urgent need to document, understand and ultimately prevent the decline of biodiversity, graduate ecologists are in high demand. This degree aims to provide you with the academic knowledge and practical skills to meet this demand.

On our Ecology degree, you will study the interactions between organisms and their environment, building the essential foundation on which to develop your understanding of how wildlife will respond to current and future environmental threats, including pollution, climate change, invasive species and habitat destruction. Our aim is to train you to be part of the next generation of ecologists who will respond to environmental threats, identify solutions and help conserve biodiversity into the future.

Opportunities for Ecology students at Aberystwyth include:

- studying in an area rich in a variety of stunning landscapes, providing natural and semi-natural habitats and ecosystems including the Cardigan Bay coastline, freshwater environments, woodlands, heaths, moorland and alpine habitats
- engagement with local fieldwork using a wealth of local habitats; also the potential for international field experience
- the option of an eight-day residential field course in Ireland or nine to ten days in Sweden, depending on module choice
- many nature reserves within easy reach, including Snowdonia and Brecon Beacons National Parks
- established links with the British Trust for Conservation Volunteers, National Botanic Garden of Wales, Natural Resources Wales, Snowdonia National Park Authority, the RSPB and various wildlife and woodland trusts.

### Employability

Many of our graduates find employment in conservation and environmental protection, or in environmental education in schools, colleges or nature reserves. Our graduates can be found working for organisations such as DEFRA (Department for Environment Food & Rural Affairs), the Environment Agency, Natural Resources Wales, Natural England, ADAS, Forestry Commission, wildlife trusts, the Wales Environment Link, the National Grid and water authorities.

### Key Facts



Degree type: BSc.



UCAS Code: C180 (C181 with integrated year in industry).



Duration: 3 years (C181 is 4 years).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Introduction to Palaeobiology
- Comparative Animal Physiology
- Ecology \*
- Evolution and the Diversity of Life
- Study and Communication Skills \*
- Introduction to Conservation
- The Biosphere
- The Development and Management of British Habitats
- The Green Planet \*
- Microbial Diversity \*
- Exploring Genetics.

### Second year:

- An Introduction to Landscape Ecology and Geographic Information Systems
- Climate Change: Plants, Animals and Ecosystems
- Ecological Surveying \*
- Research Methods \*.

### Final year:

- Research Project \* or Critical Review \*
- Environmental Protection, Law, Sustainability and Consultancy
- Population and Community Ecology.

See our website for the optional modules you may select to develop your specialist interests.

\* also available partially or entirely through the medium of Welsh.

### Accredited by:



# Life Sciences

## BSc (Hons)

The Life Sciences foundation year is specifically designed to provide you with an alternative route into higher education to study one of our biological sciences degrees. You may be eligible for this scheme if you are qualified to enter higher education but do not have the relevant qualifications in science at A level (or equivalent), if you come from a non-traditional academic background, or if you have not yet achieved your full academic potential.

The Life Sciences foundation year is taught by staff from within the Department of Life Sciences, and consists of a fully integrated programme of lectures, practicals, workshops and tutorials in biology and associated subjects. This course will give you a solid foundation in a range of scientific disciplines including biochemistry, botany, cell biology, ecology, evolution, genetics, microbiology, zoology, study skills, and biological field and laboratory techniques. At the conclusion of the foundation year, you will have developed the knowledge and skills needed to progress into the first year of one of our degree schemes.

### Employability

The Life Sciences foundation year provides a route into higher education, and through it a range of exciting opportunities for employment and further training. Depending on your chosen discipline, you will be a strong candidate for work as a research scientist, a conservation officer, a higher education lecturer or secondary school teacher.

## Module list

Core modules you may study in your foundation year include:

- Communication Skills
- Molecules and Cells
- Organisms and the Environment
- Practical Skills for Biologists.

The modules you will study after your first year are determined by the degree scheme you choose to progress onto.

For an indication of the modules available, see the relevant degree pages in this prospectus, visit our website, or contact us.

## Key Facts

 Degree type: BSc.

 UCAS Code: C990.

 Duration: 4 years.

# Marine and Freshwater Biology

## BSc (Hons)

With integrated year in industry (C166)

Situated on the coast of Cardigan Bay, Aberystwyth is one of the best places in the UK to study marine and freshwater biology. You will have easy access to rocky and sandy shores, estuaries of conservation importance, as well as near-pristine rivers and lakes. Cardigan Bay is also home to the largest residential population of bottlenose dolphins in the UK.

Our Marine and Freshwater Biology degree is one of only a few nationally to provide you with an integrated catchment to ocean understanding of the biology, ecology and stressors affecting these intimately interconnected ecosystems. This is crucial, given that they support some of the most threatened species and habitats on the planet. On this course you will develop practical skills in the sampling techniques used in the aquatic environment, the critical analysis of data and literature, and the presentation of your findings to a variety of stakeholders. This will ensure you are well prepared for professional roles that seek to understand and address the various challenges facing marine and freshwater organisms and ecosystems.

Opportunities for Marine and Freshwater Biology students at Aberystwyth include:

- an optional residential two-centre field course, currently based in Portugal and Scotland, allowing you to immerse yourself in the study of marine and freshwater biology further afield
- two research vessels enabling you to gain real hands-on experience of the sampling techniques used by professional marine and freshwater biologists
- access to our aquarium systems for experimental studies of marine and freshwater organisms.

### Employability

Marine and Freshwater Biology graduates are equipped with the skills and knowledge to enter a wide range of careers including ecological consultancy, environmental management and conservation, teaching and scientific journalism. You will also be well prepared to pursue a scientific research career, continuing postgraduate study at Masters or PhD level.

## Key Facts

 Degree type: BSc.

 UCAS Code: C164 (C166 with integrated year in industry).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Exploring Genetics
- Biochemistry and the Cellular Basis of Life
- Comparative Animal Physiology
- Ecology \*
- Evolution and the Diversity of Life
- Microbial Diversity \*
- Study and Communication Skills \*
- The Green Planet \*
- Wildlife Forensics.

### Second year:

- Applied Aquatic Conservation
- Aquatic Botany
- Freshwater Biology
- Marine Biology
- Research Methods \*

### Final year:


- Fish Biology, Fisheries and Aquaculture
- Research Project \*

See our website for the optional modules you may select to develop your specialist interests.

\* also available partially or entirely through the medium of Welsh.

## Accredited by:



 Duration: 3 years (C166 is 4 years).

# Plant Biology

## BSc (Hons)

With integrated year in industry

(C202)

Excellent career opportunities await Plant Biology graduates, and Aberystwyth University is an ideal place for the first step in your career. We host internationally acclaimed plant breeding programmes for high-sugar grasses, plant genetics resources and databases, botany gardens and the National Plant Phenomics Centre. Our campus is also set within beautiful and accessible countryside that hosts a range of habitats and species.

On this degree you will study all aspects of plant life, from the molecular to the landscape levels, while also examining global issues relating to plants. You will consider how plant-based technologies can help us meet the demands of a growing human population and respond to global threats including food security and climate change. The course will also provide you with real-life opportunities to challenge your knowledge and think creatively. You will benefit from many fieldwork opportunities, including the possibility of studying temperate, tropical and Arctic-Alpine flora.

Opportunities for Plant Biology students at Aberystwyth include:

- world-class facilities including botany gardens with a wide range of temperate and tropical plants, an extensive range of growth rooms and glasshouses, a museum of historic botanical specimens, and plant genetic resources collections and databases
- access to the National Plant Phenomics Centre and the possibility to engage with our world-leading plant breeding programmes
- beautiful habitats, including marine, moorland, mountain, woodland and grassland ecosystems, offering a fabulous variety of fieldwork and recreational opportunities.

### Employability

Career opportunities for Plant Scientists are truly excellent, with many jobs and few trained scientists in this area. Our Institute is perfectly placed to help you exploit UK and international links. Our graduates are working in conservation management, industrial and government-funded plant research institutes and the scientific civil service.

### Key Facts



Degree type: BSc.



UCAS Code: C200 (C202 with integrated year in industry).



Duration: 3 years (C202 is 4 years).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Biochemistry and the Cellular Basis of Life
- Ecology \*
- Evolution and the Diversity of Life
- Exploring Genetics
- Microbial Diversity \*
- Molecular Laboratory Skills
- Soils and their Management
- Study and Communication Skills \*
- The Biosphere
- The Development and Management of British Habitats \*
- The Green Planet \*.

### Second year:

- Agronomy and Crop Improvement
- Climate Change: Plants, Animals and Ecosystems
- Ecological Surveying \*
- Research Methods \*.

### Final year:

- Research Project \*
- Frontiers in Plant Science
- Microbial Pathogenesis.

See our website for the optional modules you may select to develop your specialist interests.

\* also available partially or entirely through the medium of Welsh.

### Accredited by:



# Wildlife Conservation

## BSc (Hons)

With integrated year in industry

(C184)

The Wildlife Conservation degree will equip you with an intimate understanding of the ecological concepts that underpin the conservation of flora, fauna and habitats on both local and global scales. Our teaching team includes academic staff who research conservation issues to inform management and policy. Aberystwyth's array of interesting and important habitats provides the ideal natural classroom for the teaching of practical skills.

By studying Wildlife Conservation, you will learn about the ecological and evolutionary processes that have shaped key habitats, and the interactions between these habitats and the wildlife they support. You will also explore the political, financial and social forces that underlie wildlife conservation and environmental management. You will recognise the importance of conserving biodiversity at a range of scales, from genetic diversity to entire biomes, and will develop the academic knowledge and practical skills to contribute to these priorities in your professional career.

Opportunities for Wildlife Conservation students at Aberystwyth include:

- the great variety of local habitats, and access to national parks, national nature reserves, and Special Areas of Conservation (SACs) – an ideal location for studying all aspects of wildlife conservation and habitat management
- direct interaction with governmental and non-governmental conservation bodies, such as Natural Resources Wales and the RSPB, through visits and seminars
- the chance to carry out field research, both locally and abroad
- being taught by expert academics who work closely with conservation bodies to inform and advise best-practice conservation, management and policy, both locally and on a global scale.

### Employability

Graduates of this degree will be well-placed to pursue career opportunities in conservation biology and management within the UK and abroad. In addition, you may opt to pursue careers in allied fields such as environmental education, or to undertake postgraduate study at Masters or PhD level.

### Key Facts



Degree type: BSc.



UCAS Code: C183 (C184 with integrated year in industry).



Duration: 3 years (C184 is 4 years).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Climate and Climate Change
- Ecology \*
- Evolution and the Diversity of Life
- Introduction to Palaeobiology
- Introduction to Conservation
- The Development and Management of British Habitats \*
- Wildlife Forensics
- Study and Communication Skills \*
- The Green Planet\*.

### Second year:

- An Introduction to Landscape Ecology and Geographic Information Systems
- Research Methods \*
- Wildlife Management.

### Final year:

- Research Project \*
- Global Biodiversity Conservation
- Wildlife Conservation.

See our website for the optional modules you may select to develop your specialist interests.

\* also available partially or entirely through the medium of Welsh.





# Zoology

## BSc (Hons)

With integrated year in industry

(C302)

Aberystwyth is a superb place to study animal life in all its diversity. Situated in a stunning location, an array of coastlines, estuaries, woodlands and hills provide outstanding habitats for the study of wildlife. The wildlife includes rare insects, red kites, ospreys, pine martens, red squirrels, seabirds, grey seals, bottlenose dolphins and harbour porpoises.

On this course you will develop your knowledge of animal diversity, behaviour, evolution, anatomy, physiology, conservation and ecology. You will also have the option to learn field skills in tropical zoology, tropical ecology and animal behaviour, locally and overseas in hyper-diverse tropical rainforest environments such as the Amazon basin or Costa Rica, depending on module choice.

Opportunities for Zoology students at Aberystwyth include:

- the latest zoological techniques including molecular analyses, advanced microscopy and contemporary biodiversity assessment
- a range of workshops, lab sessions and field courses to provide you with both theoretical and practical training
- the option of residential field courses overseas, currently Peru, Costa Rica or Borneo, depending on module choice
- an array of internationally important habitats and species within the Aberystwyth area
- access to our research aquarium facilities for the study of marine and freshwater animals
- access to our natural history museum of zoological and botanical specimens.

### Employability

Our graduates have developed exciting careers with a wide range of employers including zoos, education authorities, conservation and animal welfare organisations, the Natural Environment Research Council, the Veterinary Laboratory Agency, and as wildlife documentary producers. Other zoology graduates have continued into veterinary school or pursued further study at Masters or PhD level.

## Key Facts



**Degree type:** BSc.



**UCAS Code:** C300 (C302 with integrated year in industry).



**Duration:** 3 years (C302 is 4 years).

## Module list

Below is an indicative list of modules that you may study on this course.

### First year:

- Exploring Genetics
- Biochemistry and the Cellular Basis of Life
- Comparative Animal Physiology
- Ecology \*
- Evolution and the Diversity of Life
- Study and Communication Skills \*
- The Green Planet \*
- Wildlife Forensics.

### Second year:

- Invertebrate Zoology
- Research Methods \*
- Vertebrate Zoology.

### Final year:

- Research Project \*.

Optional modules you may select to develop your specialist interests include:

- Wildlife Management
- Behavioural Ecology
- Ethology
- Tropical Rainforest Ecology and Conservation (trec) Field Course
- Tropical Zoology Field Course.

For more details on the optional modules available, see the current list on our website, or contact us.

\* also available partially or entirely through the medium of Welsh.

### Accredited by:



# Integrated Masters schemes

## MBiol

MBiol Marine and Freshwater Biology	(C169)
MBiol Zoology	(C309)


Our Integrated Masters schemes offer you the opportunity to combine a BSc with an extra year of study so that you will graduate with a Masters-level qualification. These degrees are designed to develop the breadth and depth of knowledge, and the competence and confidence in research methods required to pursue a career as a professional scientist. All our Integrated Masters schemes have attained advanced accreditation from the Royal Society of Biology.

During your Masters-level final year of study, you will have the opportunity to apply your subject-specific knowledge and understanding to a major independent scientific research project conducted in close collaboration with one of our Institute's research groups. You will also study taught modules aimed at giving you insight into the most current techniques and theories in the biological sciences. Together, these will develop essential skills required by today's professional scientists.

Opportunities for Integrated Masters students at Aberystwyth include:

- access to extensive research and teaching labs equipped with the latest equipment, including bioimaging facilities, high-throughput DNA sequencing, flow cytometry, lab scale to pilot plant fermentation, extreme experimental environments, and proteomics, metabolomics and spectroscopic platforms
- aquarium systems and extensive growth rooms to support marine, freshwater and terrestrial organisms
- the chance to complete your Masters-level research project embedded within one of several pioneering research groups.

## Key Facts

 Degree type: MBiol.

 Duration: 4 years.

## Core module list

Core modules you may study in your final Masters year comprise:

- MBiol Research Project
- Frontiers in Biosciences
- Field and Laboratory Techniques
- Research Methods in the Biosciences.

## Accredited by:



## Employability

Our Integrated Masters degrees have been specifically created to meet the increasing demand for suitably qualified personnel to work at high level in scientific research, development, lecturing, training and education, public and private commercial enterprise, consultancy and advisory work in the UK and throughout the world. The MBiol is also a recognised alternative to MSc for progression to a PhD studentship, and an excellent foundation for a career as a professional scientist.



# Integrated year in industry

If you want to broaden your horizons and get a taste of the workplace or experience a career through a work placement, then the integrated year in industry will strengthen and improve your career prospects after graduating. The majority of our single honours courses are available with the option of an integrated year in industry.

The integrated year in industry takes place in your third year, after which you will return to Aberystwyth to complete your degree in your fourth year. The year is assessed and contributes towards your final degree mark.

#### Advantages:

- More employable when you graduate
- More likely to have a higher starting salary
- More likely to secure a graduate level job.

#### Our own students have identified additional advantages:

- Find out what you would actually like to do as a graduate
- Great experience - exploring a new area which can be abroad
- Makes your final year easier
- Develop your social and professional networks.

Applications and interviews can be time-consuming and you will graduate a year later than your university friends, but the advantages of the integrated year in industry definitely outweigh the disadvantages.

#### What support is available?

- Support is provided by an academic member of staff primarily responsible for the integrated year in industry students and the department's own Careers consultant, working hand in hand with the Careers Service
- In your first year you will receive guidance on how to explore career opportunities and enhance employability
- In your second year you will receive help searching for posts, writing CVs, cover letters and making applications. You will receive formal interview practice and official approval of your placement(s)
- During your Year in Industry you will receive regular contact and support and will be visited by an academic supervisor.

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### Ben, Intern, Southern African Foundation for the Conservation of Coastal Birds.

**Ben worked in the Chick Rearing Unit after specialised training in the care and hand rearing of penguin and seabird chicks.**

"A great experience, travelling and working abroad. It was a very positive introduction into working within the conservation sector and brilliant in providing me with unique experiences for my CV and to discuss at interview."

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# Global opportunities



Aberystwyth's Global Opportunities team offer an exciting range of options for you to go overseas as part of your degree: from short courses and volunteering opportunities in the summer, to a full semester or year abroad studying your chosen subject at one of our partner universities.

The University also offers a number of courses which include an integrated year studying abroad, enabling you to study at one of our European or international partner universities for one or two semesters during your third year, returning to Aberystwyth for your final year and graduation.

Reports have shown that students who study abroad are more attractive to employers and earn more than their peers. Take advantage of the opportunity of a lifetime while improving your critical skills by choosing to study abroad.



Sydney



Denmark



Montana



St. Petersburg



Hong Kong



Washington, DC



Bergen



Austria



Ottawa

# Studying through the medium of Welsh

All our undergraduate degree schemes can be studied partly through the medium of Welsh. For some degree schemes, more than half the modules are available through the medium of Welsh.

You may choose to present all your coursework, including assignments and oral presentations, through the medium of Welsh and complete your written examinations in Welsh, regardless of the module's medium of instruction. The Department also ensures that all Welsh-speaking students are allocated a personal tutor and dissertation tutor who can speak the language. These teaching arrangements mean that our Welsh-medium provision is open to students from a range of different Welsh language backgrounds.

Studying through the medium of Welsh is advantageous in many ways, including:

- increased job prospects
- being taught in smaller groups
- being part of a friendly and welcoming Welsh-speaking community.

All students studying Welsh medium modules will also be eligible for the University's Welsh medium study scholarship, worth up to £250 per year. Furthermore, many of our degree courses are eligible for Coleg Cymraeg Cenedlaethol undergraduate scholarships worth £1500 over three years. For more information about these scholarships and for a list of the eligible degree schemes please see the Coleg Cymraeg Cenedlaethol website: [www.colegcymraeg.ac.uk/en/study/mediumofwelsh](http://www.colegcymraeg.ac.uk/en/study/mediumofwelsh)



# Research

The Department of Life Sciences is an internationally-recognised research and teaching centre providing a unique base for research in response to global challenges such as food security, bioenergy and sustainability, and the impacts of climate change. Our scientists conduct research on genes and molecules, whole organisms and the environment.

## Ecological and Evolutionary Research Group

Ecological and evolutionary research within the department spans terrestrial, freshwater and marine ecosystems. We undertake research into water, soils, plants and animals (invertebrates and vertebrates) and their interactions. We employ a range of approaches across different temporal and spatial scales to address key questions about how ecosystems work and how they operate. Whilst we are interested in the present, our research extends into the future by looking at how a wide range of climate change variables such as increased warming, CO<sub>2</sub>, ocean acidification and ultra violet radiation will impact on ecosystems. Our research is integrated with teaching and we see our laboratories and the field as our training ground. Areas of focus include:

- soil and its component parts
- plant ecophysiology and how plants respond to abiotic and biotic stresses in semi-natural communities
- the close relationship between plants and invertebrates, including marine algae and herbivores
- how grazing animals including livestock affect plant communities
- the nature of competition and how plant and animal communities work
- techniques for making space for nature within coastal engineered structures.

## Plant Genome and Chromosome Biology Research Group

This group undertakes varied research into the biology of grasses, cereals and legumes. We apply genomic, cytogenetic and bioinformatic analyses in the generation and analysis of novel crop plant phenotypes. The National Plant Phenomics Centre (NPPC) is used by many of our members. It offers state-of-the-art phenotyping platforms with the aim of delivering integrated phenotyping solutions for key crop and model species. It uses innovative technologies to measure plant performance and physiology at different scales, from the molecular and cellular to organ and population level. This group focuses on:

- the genetics and genomics of the forage grasses *Lolium perenne* (perennial ryegrass) and *Festuca pratensis* (meadow fescue)
- the genetics and genomics of cultivated hexaploid oats (*Avena sativa*) and the development of experimental resources using tetraploid and diploid relatives
- the molecular phylogenetics of *Avena* and *Brachypodium* spp
- the molecular cytogenetics of meiotic recombination and genome constitution in various plant species
- the development of 'bioinformatics for breeding' computational tools and resources which integrate the results of genotypic and phenotypic investigations.

## The Aquatic, Behavioural & Evolutionary Biology Research Group

This group employs interdisciplinary approaches towards a unifying interest: how animals adapt to their environment. Within this aim we use a wide range of field- and lab-based techniques to investigate key questions in ecology, evolution and behaviour of wild populations. We combine group-wide expertise and activities to provide high quality research-led teaching. Members of this group look at:

- invertebrate behavioural plasticity and population ecology
- the evolution of aquatic organisms and their parasites
- opisthobranch biology and population genetics
- behaviour, birdsong and urban adaptation
- the cognition and neurophysiological control of animal behaviour
- invertebrate neuroethology
- the evolution of aquatic biodiversity and population connectivity
- circadian and circatidal rhythms in marine organisms.



Our 10 metre research vessel, Taliesin, with Aberystwyth town in the background.

# Research highlights

## Effects of climate change on coastal bird habitats

Researchers in the ECHOES project are modelling the behaviour and distribution of Greenland White-fronted geese and Eurasian Curlew along the Irish Sea coastlines in Ireland and Wales. Sea level rise and tidal inundation of key habitats, the availability of nutritious plants and soil invertebrates, and impacts on the condition of the birds before return flights to summer breeding grounds are being closely investigated.



## Constructing artificial coastal structures

Researchers are attaching special tiles to man-made coastal flood-prevention structures in nearby Borth, which are designed to mimic the ideal conditions to enable wildlife to take hold. The concrete tiles have been designed using a process called photogrammetry which creates a 3D image of the terrain found on natural rocky shores, and will enable the most diverse and rare species to thrive.

## Fabric colour to help control deadly tsetse flies

Our scientists have helped deliver a scientific breakthrough that could help control cases of a devastating tropical disease by engineering an improved coloured fabric for the insecticide-treated targets used to control tsetse, based on an understanding of how the flies see colour. The violet-coloured fabric is robust and effective for targets against savannah species, and will help to improve the lives of people and communities across Africa.



## Warnings of tuna overfishing in the Indian Ocean

A marine biologist studying the genetics of yellowfin tuna off the cape of South Africa, where the Indian Ocean meets the Atlantic Ocean, has shown that the geopolitical boundary used to define the outer limits of the Indian and Atlantic Ocean stock assessment areas means that tuna stocks are not being accurately measured. This means that current quotas set for the sustainable management of the fishery may need modifying as overfishing of yellowfin tuna in the Indian Ocean may be worse than previously thought.

# How to apply

Once you've decided what course you want to study and where, you'll be able to start the university application process. Here's a brief overview of the process and our procedures here at Aberystwyth.

## 1 Apply through UCAS.com

Deadline 15 January. Aberystwyth University institution code: A40.

**Top tip:** You'll be given a 10-digit UCAS ID number. Keep this to hand as you'll be asked for it many times.

## 2 The University will consider your offer

**Top tip:** Use UCAS Track to keep an eye on your application. At Aberystwyth we aim to make a decision within four weeks.

## 3 The offer will show on UCAS track

## 4 Decide where to go

Once you've received all your offers, you'll need to decide which university you want to go to, within a set time. This is when you'll need to note which universities will be your firm and insurance choices.

## 5 Accommodation

Once you've chosen your firm/insurance choice you'll be able to apply for your accommodation (April onwards).

## 6 Results day

UCAS Track will confirm your offer of a place. If you're not clear what the offer is, contact the university directly. Make sure you're not on holiday on results day. If you don't get the grades you've hoped for, you may want to consider entering Clearing.

## 7 Start packing!







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