Programme Specification ARO 034a

This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if they take full advantage of the learning opportunities provided.

This document is published on the University website and will be a publicly available record of the named programme.

The information contained in this form should be included in the Programme Handbook, either as presented below or in a format determined by the Faculty.

Section 1 Key Facts

<table>
<thead>
<tr>
<th>Awarding Body</th>
<th>University of Stirling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner Institution</td>
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<tr>
<td>Programme Name</td>
<td>Ecology</td>
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<td>Award e.g. BSc (Hons), MA etc.</td>
<td>B.Sc. Honours</td>
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<td>Biological and Environmental Sciences</td>
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<td>Mode of Study</td>
<td>Full Time ☒ Part Time ☒</td>
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<td>(if both please provide two Degree Programme Tables in the Outline Programme Structure)</td>
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<tr>
<td>Location/Method of Study</td>
<td>On Campus – UK ☒ International ☐ Where: Online ☐ Blended ☒</td>
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<td>Admission Points</td>
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<td>Professional Body Accreditation (all relevant accreditations to be listed)</td>
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<td>Required for programme: No</td>
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<td>Date of Accreditation: XX / XX / 20XX</td>
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<td></td>
<td>Date of Renewal: XX / XX / 20XX</td>
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Section 2 Overview

PROGRAMME SUMMARY

A comprehensive summary of the programme.

The programme aims to give our students key knowledge in those aspects of the biological and environmental sciences which are specifically relevant to ecology; a familiarity with the techniques and methods by which organisms are studied in their environment; an appreciation of some of the key questions which are at the forefront of current ecological research and/or are of wider relevance and interest for human activity; the scope to develop their talents and their education so that they can pursue a diversity of careers which may require the application of their expertise in ecology and which may also demand skills in communication with others who may or may not have had a similar scientific training.

Key Features of the Programme (including what makes it distinctive)

- Research-led teaching;
- Lab- and field-based learning;
- Opportunities to conduct fieldwork in the UK and abroad;
- Strong conservation-focus;
- Evolutionary approach to understand the interactions of organisms with their environment.

PROGRAMME AIMS

Overarching Programme Aims

On successful completion of this programme, you should be able to:

1. Demonstrate critical understanding of ecology from cellular processes to ecosystem levels
2. Plan, execute and analyse experiments to address ecological questions
3. Be able to conduct quantitative data analysis
4. Understand the effect of human activities on the natural dynamics of ecological phenomena
5. Work effectively as part of a team
6. Independently conduct research work

WHAT WILL I BE EXPECTED TO ACHIEVE?

Detailed Learning Outcomes

On successful completion of this programme, you should be able to:

Knowledge and Understanding:

1. Critically discuss the diversity of living creatures and the innate links between their structure, function and the environment.
2. Have an understanding of Earth processes which are immediately relevant to ecological systems at a range of temporal and spatial scales
3. Explain the interactions between organisms as populations, as communities and as ecosystems
4. Evaluate the balances which operate between organisms and their resources, which allow ecosystems to be effectively conserved or managed
5. Assess the implications of the theory of evolution for the individual organism, the population and the species
6. Be able to apply the scientific method as it is applied to ecology and its practice in both formal field,
laboratory and IT classes

Intellectual, Practical and Transferable Skills and other graduate attributes:

1. Retrieve ecological and other relevant information through an appreciation of the diversity of knowledge sources available and the use of that information for both directed and independent learning.
2. Critically analyse knowledge both for its quality and for its relevance to a specific, defined objective relevant to ecology.
3. Pursue the principles and practice of hypothesis generation based on prior knowledge, observation and experiment.
4. Design relevant and safe laboratory and field experiments which will test a hypothesis with scientific rigour.
5. Manipulate raw data (either self-generated or generated or others) of various complexities, both arithmetically and statistically.
6. Use, laboratory and field equipment deployed on a routine basis in ecology.
7. Follow written procedures which describe experimental methods so as to achieve an objective which depends on their accuracy and precision.
8. Competently use IT facilities including word-processing, spreadsheets and statistical packages so that they experience and knowledge can be formulated, including scientific data, to produce text, tables, figures and bibliographies in accepted scientific format in order to complete assessed practical reports, scientific reviews and a final year thesis.

Values and Attitudes:

1. An appreciation of the hazards encountered in laboratory and field work and an ability to assess and minimise the risks so that they can complete such work safely and responsibly with due recognition of other stakeholders.
2. Appreciate how knowledge can be made use of by others and the implications of the concept of intellectual property.
3. Appreciation and understanding of the effect of human activities on ecological processes.

HOW WILL I LEARN?

Outline of the teaching methods and approach to be used on the programme.

The Ecology degree programme is structured in hierarchical, modular format. Students can pursue their degree either full time or part time, progressing through stand-alone but coherent modules. During the first two years, students study basic biology and environmental science. The knowledge and skills developed in modules taken during the first two years are required for, and further developed in, more advanced modules specifically programmed into the Ecology degree which are taken in years three and four. Students retain the option to pursue other degree programmes in Biological and Environmental Science until the end of the second year.

Most modules consist of lectures and practical work although the emphasis on one or the other depends on the specific module. Modules taken in the first two years place more emphasis on directed learning. In more advanced modules taken in years three and four greater emphasis is placed on independent learning and its communication in seminar and supervised project work.

Modules taken during the first two years are structured to:

- form a coherent sequence of modules in order to provide the essential knowledge and skills base of a degree in Ecology;
- ensure students have basic practical and field skills and that they understand the importance of their own and other’s safety in the progress of experimental work;
- develop the student’s curiosity for observation and enthusiasm for experiment;
- introduce communication, statistical and IT skills;
- ensure students have sufficient knowledge and practice in those aspects of mathematics, physics and chemistry which are required to pursue the biological sciences;
• introduce ecological topics at the same time as other topics relevant to the Biological and Environmental Sciences.

Modules taken during the third and fourth years:
• advance students' knowledge in aspects of Ecology which make greater intellectual demands and which approach the forefront of our knowledge in those particular areas in which staff have an expertise;
• provide opportunities for them to demonstrate that they have embedded their core knowledge and can bring it to bear on aspects of ecology which are open to debate or are only partially understood;
• allow scope for experimental work which originates from the student’s own hypotheses and their design and is undertaken through supervision rather than prescribed direction;
• provide students with practice in tasks that involve the handling of larger amounts of information, including numerical data, and its collection and communication into formats acceptable to publishers of biological journals.

Assessment
Students are assessed by a diversity of methods which include written or practical examinations completed within a restricted timeframe and coursework which has substantially longer deadlines for completion.

Examinations include, either solely or in combination;
• questions testing basic and limited knowledge requiring a response of very restricted word length or selection from a choice of predetermined answers;
• questions requiring extended responses which require students demonstrate a broader knowledge and an understanding that integrates a number of aspects of an ecological topic;
• data handling or other material which incorporates a degree of problem-solving.

Coursework includes, either solely or in combination;
• written reports, usually incorporating the student’s own results, submitted in the standard format used for the publication of experimental findings in the biological sciences;
• extended written responses, such as dissertations and reviews of the scientific literature, which relate to an ecologically relevant topic;
• presentations which assess their ability to communicate orally supported by computationally generated visual material;
• a final year thesis which reports the findings of an independent research project completed during the fourth year.

WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?
Outline of the assessment methods and approach to be used on the programme.
Assessment and Assessment Criteria
Modules are assessed by a combination of coursework and examination completed during the semester. For many modules, the marks awarded for coursework contribute 40–50 percent of the final grade, but for some modules this is as high as 100 percent.
Throughout the programme a range of assessment methods are used including short answer or multiple choice examinations and class quizzes, online tests and exercises, extended essays, practical reports, field sketches and drawings, maps, field and laboratory notebooks, oral presentations, seminars, social media use, reflective exercises and practical performance. All work is marked by academics but an element of peer and external feedback is included in some modules.

Feedback on Assessment
You will receive feedback on coursework within 3 weeks of completion of the assessment. Feedback is usually provided electronically on formal coursework. Feedback and Guidance sessions with teaching staff are available on all modules. These provide regular opportunities to discuss feedback further. More information about feedback on assessment can be found here;
http://www.stir.ac.uk/academicpolicy/handbook/assessment/
Assessment Regulations
If you would like to know more about the way in which assessment works at the University of Stirling, please see the full version of the assessment regulations at:
Undergraduate
Postgraduate – Taught
Postgraduate - Research

WHAT WILL I STUDY?
Outline Programme Structure

The list below shows compulsory and optional modules for this programme. Optional modules are revised over time and, in some cases, will be dependent upon pre-requisite and/or co-requisites being taken. More information about these requirements can be found in the relevant Module Descriptors. The options available each year can be subject to change due to student demand and availability of teaching staff.

- Where an “Option list” is specified, you have a choice of which module to take at this point in the degree programme and these choices are listed below
- For year 1 and 2 where “Any Module” is used it means that you can choose from all modules available to the year group and you can see the full list by following these links:

Undergraduate
Postgraduate

Year 1

Total year 1 credit value = 120
Compulsory credits = 80
Option credits = 40

<table>
<thead>
<tr>
<th>Module Title</th>
<th>Module Code</th>
<th>Credit</th>
<th>Semester</th>
<th>SCQF Level</th>
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<tbody>
<tr>
<td>Ecology: An Introduction</td>
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<td>Autumn</td>
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<tr>
<td>Practical Science Skills I: Laboratory Skills</td>
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<td>Autumn</td>
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<tr>
<td>Introduction to Physiology</td>
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<td>Spring</td>
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<tr>
<td>Practical Science Skills II: Field Skills</td>
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<td>Spring</td>
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Optional Modules – you must choose 20 credits in each Spring or Autumn from the following modules

<table>
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<tr>
<th>Module Title</th>
<th>Module Code</th>
<th>Credit</th>
<th>Semester</th>
<th>SCQF Level</th>
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<td>Our Blue Planet</td>
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<td>Building Planet Earth</td>
<td>ENVU1GE</td>
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<tr>
<td>People and the Environment</td>
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<td>Autumn</td>
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<td>Our Thirsty Planet: Man and the aquatic environment</td>
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<td>Landscape Evolution</td>
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<td>Spring</td>
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<td>Global Environmental Issues</td>
<td>GEOU2EI</td>
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Year 2

Total year 2 credit value = 120
Compulsory credits = 120
Optional credits = 0

Compulsory Modules
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<tr>
<th>Module Title</th>
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<th>SCQF Level</th>
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<td>Evolution and Genetics</td>
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<td>Introduction to Cell Biology</td>
<td>BIOU1CB</td>
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<td>Biology Field Course</td>
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<td>Biodiversity</td>
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<td>The Biosphere</td>
<td>ENVU4E4</td>
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<td>Statistical Techniques</td>
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<td>20</td>
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**Year 3**

Total year 1 credit value = 120
Compulsory credits = 20
Optional credits = 100

**Compulsory Modules**

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<tr>
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<th>Module Code</th>
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<tr>
<td>Plant Ecology</td>
<td>BIOU6PE</td>
<td>20</td>
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Option Modules – you must choose 60 credits in the Autumn and 40 credits in the Spring from the following modules:

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<td>Animal Physiology</td>
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<td>Enzymes and their Applications</td>
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<td>Microbiology</td>
<td>BIOU5MI</td>
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<td>Conservation Biology</td>
<td>BIOU7CB</td>
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<td>Population and Community Ecology</td>
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<tr>
<td>Environmental policy and Management</td>
<td>ENVU5A5</td>
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<td>Soil Quality and Protection</td>
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<td>Habitat Management and Restoration</td>
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<td>Glaciers and Landscape</td>
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<td>Changing Oceans</td>
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<td>The Animal Cell</td>
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<td>Drainage Basins</td>
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<td>Spring</td>
<td>10</td>
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<tr>
<td>Methods and Applications in Environmental Sciences</td>
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<td>Spring</td>
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<td>Spain Field Course</td>
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<td>Conservation Management</td>
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<td>Earth Observation</td>
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<td>Environmental Hazards</td>
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**Year 4**

Total year 1 credit value = 120
Compulsory credits = 60
Optional credits = 60

Compulsory Modules

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Option Modules – you must choose 40 credits in the Autumn and 20 credits in the Spring from the following modules:

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<td>Autumn</td>
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<td>Molecular Evolution and Phylogenetics</td>
<td>BIOU7EP</td>
<td>10</td>
<td>Autumn</td>
<td>10</td>
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<tr>
<td>Biology Field Course</td>
<td>BIOU7FC</td>
<td>20</td>
<td>Autumn</td>
<td>10</td>
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<tr>
<td>The Evolution of Sex</td>
<td>BIOU7SX</td>
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<td>Autumn</td>
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<td>Molecular Techniques</td>
<td>BIOU9TM</td>
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<td>Autumn</td>
<td>10</td>
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<tr>
<td>Population and Community Ecology</td>
<td>BIOU9PC</td>
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<td>Autumn</td>
<td>10</td>
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<tr>
<td>Habitat Management and Restoration</td>
<td>ENVU9MR</td>
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<td>Autumn</td>
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<td>Sustainable Water Management</td>
<td>ENVU9WM</td>
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<td>Autumn</td>
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<td>Statistics using R</td>
<td>SCIU7SR</td>
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<td>Autumn</td>
<td>10</td>
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<td>Gabon Field Course</td>
<td>BIOU8GA</td>
<td>20</td>
<td>Spring</td>
<td>10</td>
</tr>
<tr>
<td>Biology Field Course</td>
<td>BIOU8FC</td>
<td>20</td>
<td>Spring</td>
<td>10</td>
</tr>
<tr>
<td>Conservation Management</td>
<td>ENVU8CM</td>
<td>10</td>
<td>Spring</td>
<td>10</td>
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<tr>
<td>Energy and Society</td>
<td>GEOU9SE</td>
<td>20</td>
<td>Spring</td>
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**READING LIST**

Required and Recommended Reading for the Programme

Recommended for all biologists:

- The diversity of life - Edward O. Wilson, 1994
- The selfish gene - Richard Dawkins, MyiLibrary, 2006
- The emerald planet: how plants changed Earth’s history - David Beerling, 2007
- The origin of species by means of natural selection: or, The preservation of favoured races in the struggle for life - Charles Darwin, J. W. Burrow
- Life on earth: a natural history - David Attenborough, British Broadcasting Corporation, 1979
- A genetic switch: phage lambda revisited - Mark Ptashne, 2004
- Bones, rocks and stars: the science of when things happened - Chris Turney, 2006
- Adaptation and natural selection: a critique of some current evolutionary thought - George C. Williams, 1966
- The blind watchmaker - Richard Dawkins, 2006
- The double helix: a personal account of the discovery of the structure of DNA - James D. Watson, Steve Jones, 1999
- Endless forms most beautiful: the new science of evo devo and the making of the animal kingdom - Sean B. Carroll, 2011
- Genome: the autobiography of a species in 23 chapters - Matt Ridley, 2006
- The ghosts of evolution: nonsensical fruit, missing partners, and other ecological anachronisms - Connie C. Barlow, 2000
- The long summer: how climate changed civilization - Brian Murray Fagan, 2004
- The weather makers: the history and future impact of climate change - Tim F. Flannery, 2005
Section 3 Student Support

SUPPORT FOR STUDENT LEARNING

Induction
You will receive an induction during the first days of your programme. This includes a range of social events, information sessions and activities to help you orientate yourself at Stirling and access the services available to you. These are opportunities to meet staff and other students from across the university, in the Faculty and on the programme.

The Faculty of Natural Sciences also provides induction events at the start of 4th year to help prepare you for advanced study and provide you with opportunities to network with business.

Study Skills Support
Student Learning Services (SLS) are committed to providing comprehensive guidance on all aspects of effective and efficient learning. The ultimate aim of the service is to enable you to make the most of your academic studies at the University and for you to become an independent, successful learner during your time at the University of Stirling. This is facilitated through collaborative work with experienced tutors and by offering a variety of courses, workshops and tutorials.

All students, whatever stage of their academic studies, are welcome to use Student Learning Services. However the service may be particularly beneficial:

- In your first two years of study.
- If you are making the transition from college to Higher Education.
- If you have been out of education for some time.

What SLS are able to do:

- Advise you on academic skills relevant to your studies at University.
- Help you consolidate your previous learning and develop new learning strategies.
- Advise on action-plans to potentially improve grades.
- Suggest practical solutions if you feel overwhelmed by assignment work.
- Help you gain confidence in the transition to Higher Education.

More information can be found here: [http://www.stir.ac.uk/campus-life/learning-support/student-learning-services/](http://www.stir.ac.uk/campus-life/learning-support/student-learning-services/)

STEER
STEER is a University-wide peer support scheme linking in returning student "Captains" with new undergraduate or taught post-graduate "Crew" during their first year at Stirling.

The scheme aims to help you make the most of your time at the University, help new students - the Crew - settle in and realise the opportunities available to them. You can find out more information here: [https://www.stirlingstudentsunion.com/representation/studentsupport/steer/](https://www.stirlingstudentsunion.com/representation/studentsupport/steer/)

Stirling Graduate School
For Research Postgraduate Students the Stirling Graduate School as well as your own faculty will provide support. More information can be found here: [http://www.stir.ac.uk/graduateschool/current-pg-students/skills-development/](http://www.stir.ac.uk/graduateschool/current-pg-students/skills-development/)

Academic and Pastoral Support
Adviser of Studies: Advisers have an important role to play in enhancing your academic and personal development and are essential to ensuring you make the most of your time at university. Advisers provide a personalised point of contact for you to discuss academic concerns or queries within the
academic community. The general purpose of the role is to provide more in-depth advice on the academic options available to you and on the academic policies and regulations within the University. More information can be found here: http://www.stir.ac.uk/registry/advisers/

**Personal Tutor:** The role of a personal tutor is to help you feel part of the University community. They are a specific and consistent source of guidance, information and support for you throughout your studies. The tutor should be the your first formal point of contact for general academic guidance and pastoral support. More information can be found here: http://www.stir.ac.uk/tse/personal-tutor/

**Support and Wellbeing:** At university you may face non-academic issues where you need some expert help or guidance. There are lots of ways we can help you in your day-to-day life at University. Student Support Services provide a range of high-quality services to assist you during the course of your studies, help prepare you for life after graduation. We aim to enhance the student experience and help you to get the most out of your time at University. More information can be found here: http://www.stir.ac.uk/campus-life/support-and-wellbeing/

**Student Union:** you can also access support through the Students’ Union, more information can be found here: https://www.stirlingstudentsunion.com/representation/studentsupport/

**Accessibility and Inclusion (A&I)**
A&I are committed to offering a service which is welcoming and supportive of the needs of all students. Our service takes into account the full range of needs you may have, in a wide variety of circumstances including - physical and mobility difficulties, sensory impairments, specific learning difficulties including dyslexia and autistic spectrum disorder as well as medical conditions and mental health difficulties. A&I can also support you if you have short-term, temporary impairments or other difficulties as a result of an accident, injury, illness or surgery. More information can be found here: http://www.stir.ac.uk/student-support/accessibility-&-inclusion-service/

**Learning Resources**
You can find out more about the resources available to support your learning here: http://www.stir.ac.uk/campus-life/learning-support/

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**Section 4 Programme Evaluation and Enhancement**

**METHODS FOR EVALUATING AND IMPROVING THE QUALITY AND STANDARDS OF TEACHING AND LEARNING**

**Module Feedback**
Module Feedback Questionnaires are carried out each year and are an important way of getting student feedback on the modules we teach. We aim to evaluate every module we teach in every semester. You can find out more here: http://www.stir.ac.uk/registry/studentinformation/moduleevaluation/

**Programme Review**
Programmes are reviewed annually and on a 5 yearly cycle. You can get involved in a variety of different ways; by completing module evaluations, becoming a course representative and attending Student Staff Consultative Committees, or participating in the review process itself. You can find out more here: http://www.stir.ac.uk/academicpolicy/handbook/review-and-monitoring/

**External Examiner(s)**
Name of External Examiner: Joanne Lello
Institution: Cardiff University
*Please add as required.*
## WHAT KIND OF CAREER MIGHT I GO ON TO?

*What career avenues does this qualification open up to the student?*

Our programme prepares students for professional employment in several sectors, including scientific research, consultancy, communication, education and environmental policy. For example, some of our graduates work in ecological consultancy firms analysing ecological data or conduct ecological field surveys for private and government organisations. Graduates also pursue careers in science going on to enroll in M.Sc. and PhD programs, eventually securing permanent academic jobs. Some of these disciplines require further study following graduation.

How does this programme facilitate your development of the Graduate Attributes?

### Connected

1. The programme will connect you with biological knowledge, understanding and skills as applied to complex real-world issues and processes.
2. The programme will connect you with private, public and third sector representatives via external teaching contributions, placement opportunities and employer-engagement events.
3. The programme will connect you with knowledge, experiences and people providing different perspectives on cultures, beliefs and traditions within a biological context, via diverse student and staff population, overseas field trips, and international examples embedded in our teaching.
4. The programme will allow you to work with staff, students and external organisations as part of an inclusive learning community.
5. The programme will teach you to communicate effectively through a range of digital and other media.

### Innovative

6. The programme allows you to innovate through participation in active and ethical, world-leading research into ecology.
7. The programmes exploits new developments in training you to be a biologist, including genetics, and analytic training using industry- and academic-standard programming languages.
8. The programme will train you in independent critical and reflective thinking around ecology.
9. The programme will help you to identify opportunities for improvement in your own learning and to take action.

### Transformative

1. The programme can transform your intellectual passion and excellence with regards to issues and solutions in ecology.
2. The programme can help you share new perspectives and broaden your horizons via overseas field work and study abroad opportunities as well as in-class discussions.
3. The programme provides training in professionalism, allowing you to develop as an adaptable and resilient animal biologist, equipped to succeed in the global biosciences jobs market.
4. The programme gives you substantial practice in critical and sceptical thinking, which are hard-won and useful skills across many graduate careers.

## WHAT STUDY ABROAD OPPORTUNITIES ARE AVAILABLE?
Study abroad opportunities are available to all Stirling students. You can spend one semester in a study at one of our 70 partner universities, located across four continents. Recent examples include California State University, University of Tubingen, University of Toronto. Study abroad is available during your third year, and you will study courses equivalent to those taken at Stirling. This opportunity will allow you to develop your personal skills and at the same time, broaden your cultural experience.

**WHAT PLACEMENT OPPORTUNITIES ARE AVAILABLE?**

Students may apply for competitive vacation bursaries that are awarded by the department or through external funding agencies for work in the summers between years 2 and 3 or 3 and 4. In addition, we have strong links with Government Agencies such as Scottish Natural Heritage, environmental consultancies, the forestry sector, and various organisations in the environmental sector, such as the Royal Society for the Protection of Birds (RSPB), Bat Conservation Trust, British Trust for Ornithology, and Bumblebee Conservation Trust.

**WHAT FURTHER STUDY OPTIONS ARE AVAILABLE TO ME?**

*What programmes of study could the student go on to after successfully completing this one?*

Depending on the student’s interests, there are many possible routes for further education, including postgraduate degree courses in research (MSc, MRes, and PhD), veterinary training, and teacher training. Stirling provides an M.Sc. Environmental Management (Conservation) that is open to our graduates. Trade-specific opportunities allow students to adapt their scientific training for careers in communication, consultancy, or policy.

**WHAT OTHER INFORMATION DO I NEED TO KNOW?**

We subsidise costs for fieldtrips, but you’ll have to make a financial contribution towards your travel, accommodation and subsistence for all residential fieldtrips. Field trips are an optional, but highly recommended, part of the programme as they provide an invaluable opportunity to apply your skills and knowledge to answer environmental questions in unfamiliar landscapes. However, non-residential field learning is embedded in other modules in the programme.

Students are expected to provide a laboratory coat and have suitable outdoor clothing for laboratory and field practicals.

Our university library is well-stocked with resources for this programme, but for your convenience you may wish to purchase your own copies of some core texts.

### Section 6 Admissions

**HOW DO I ENTER THE PROGRAMME?**

*Admissions Criteria*

**Year 1 entry – Four-year honours**

**SQA Highers**

- AABB - one sitting
- AAAB - two sittings

**GCE A-levels**

- BBB
<table>
<thead>
<tr>
<th>IB Diploma</th>
<th>32 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEC (Level 3)</td>
<td>DDM</td>
</tr>
<tr>
<td><strong>Essential subjects</strong></td>
<td>[To include one of Biology, Chemistry, Mathematics or Physics.]</td>
</tr>
<tr>
<td><strong>Year 2 entry – Three-year honours</strong></td>
<td></td>
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<tr>
<td>SQA Advanced Highers</td>
<td>ABB</td>
</tr>
<tr>
<td>GCE A-Levels</td>
<td>ABB</td>
</tr>
<tr>
<td>IB Diploma</td>
<td>35 points</td>
</tr>
<tr>
<td><strong>Essential subjects</strong></td>
<td>[To include Biology and one of Chemistry, Environmental Science, Geography, Geology or Physics.]</td>
</tr>
</tbody>
</table>

**Other qualifications**

- Scottish HNC/HND
  - Bs in graded units
- **English, Welsh and Northern Irish HNC/HND**
  - Merits and Distinctions.
- **Access courses**
  - Access courses and other UK/EU and international qualifications are also welcomed.
- **Foundation Apprenticeships**
  - Considered to be equivalent to 1 Higher at Grade B
- **Essential subjects**
  - As listed above.

**Advanced entry**

Year 2 entry may be possible with HND in a Science based subject. For information on accepted courses please consult our Advanced Entry pages.

**Additional information**

General entrance requirements apply.
If you’ve taken exams over two sittings, repeated an exam, or been upgraded, the entrance requirements may be higher.

**English language requirements**

If English is not your first language you must have one of the following qualifications as evidence of your English language skills:

- IELTS - 6.0 with 5.5 minimum in each skill
- Cambridge Certificate of Proficiency in English (CPE): Grade C
- Cambridge Certificate of Advanced English (CAE): Grade C
- Pearson Test of English (Academic): 54 with 51 in each component
- IBT TOEFL: 80 with no subtest less than 17

**More information on our English language requirements**

**Pre-sessional English language courses**

If you need to improve your English language skills before you enter this course, our partner INTO University of Stirling offers a range of English language courses. These intensive and flexible courses are designed to improve your English ability for entry to this degree.

**Find out more about our pre-sessional English language courses**