

PROGRAMME SPECIFICATION

1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	BSc (Hons) / MBIol
4	Programme Title	Bachelor of Science (Ecology and Conservation) Master of Biology (Ecology and Conservation) Master of Biology (Ecology and Conservation) with Placement Year
5	UCAS/Programme Code	C182 C183 1145U
6	Programme Accreditation	Not applicable
7	QAA Subject Benchmark(s)	Biosciences
8	FHEQ Level	Level 6 / Level 7
9	Date written/revised	September 2024

10 Programme Aims

1. Develop a thorough knowledge and understanding of organisms, including microbes, plants and animals and how they interact with their environment;
2. Introduce the main disciplines underpinning a full understanding of biology, including molecular biology, biochemistry, cell biology, physiology, genetics, ecology, evolution and systematics;
3. Progressively develop the laboratory and field work skills required for the study of ecology and environmental biology;
4. Provide a curriculum enhanced by an active research environment that engenders critical thinking;
5. Stimulate a wide interest in biological topics including an awareness of how current developments may affect the present and future well-being of society and the planet;
6. Provide graduate-level training in key skills, including the ability to communicate in a variety of contexts, utilise IT and library resources efficiently, process and interpret quantitative data, manage time effectively, and work both independently and in teams;
7. Provide a flexible programme covering all aspects of biology (with an ecological and environmental emphasis), incorporating the elements specified in the benchmark statement for Biosciences issued by the Quality Assurance Agency;
8. Provide a curriculum which meets the criteria for BSc Honours Degree level in the Framework for Higher Education Qualifications issued by the Quality Assurance Agency.

For students on the Placement Year programme:

9. Provide students with the experience of seeking and securing a position with an employer;
10. Facilitate independent self-management and active interaction in a non-university setting;
11. Provide a period of practical work experience that will benefit current academic study and longer term career plans
12. Enable students to apply their knowledge and skills in the work place, reflect upon their development and effectively evidence and articulate their learning in relevant future settings.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for Biosciences.

Knowledge and Understanding

On completing the programme students should have:

- A1. A knowledge of biology from the organism to ecosystem levels;

- A2. An understanding of functioning of plants, animals and micro-organisms, with particular reference to their role in ecosystems and environmental adaptation and responses to stress.
- A3. A knowledge of the diversity of living organisms and the principles underlying classification, with an understanding of evolutionary processes.
- A4. An understanding of ecology, with emphasis on population and community responses to pollution, climate change and other types of human impact and the application of computer modelling.
- A5. A knowledge of interaction between living organisms as symbionts, commensals, predators, parasites and pathogens.
- A6. An understanding of genetics at both the population and molecular levels.
- A7. An appreciation of the broader significance and impact of recent advances in biological science on contemporary society and the future.

For students on the Placement Year programme:

- A8. Apply personal and professional development strategies to prioritise, plan and manage their own skills development and learning;
- A9. Research, select and apply relevant knowledge aimed at enhancing their own skills and effectiveness in specific duties at their placement;
- A10. Demonstrate an understanding of a work environment, how it functions and their contribution to it;
- A11. Relate their work based learning to other areas of personal development, including academic performance.

Teaching and Learning Methods

Teaching Strategy

A1 – A6 are principally imparted through lectures, enhanced and supplemented with co-ordinated practical work or additional learning delivered by means of appropriate CAL tasks, written assignments and seminars. Many of the lecture courses at Stage 3 are crucial in delivering A7 as they provide knowledge and insights at the 'cutting edge'.

Learning Strategy

Throughout the taught component of the course, students are encouraged and expected to engage in independent study and are supported in this by the provision of reading lists, hand-outs and direction to many library and web-based resources (including e-journals).

Assessment Strategy

Assessment Strategy

Assessment is partly by unseen written examinations (essays, short answers, data interpretation, missing words, multiple choice) but also via coursework. Most modules at Stages 1 and 2 include some coursework, thus ensuring that elements of formative, as well as summative, assessment and a variety of assessment methods are employed. At Stage 3 the distribution of exam- and assignment-assessed work is more polarised between modules, although as at Stages 1 and 2, each form a major part of the whole Stage 3 assessment.

The level of academic achievement required under these strategic objectives is consistent with the award of a BSc Honours Degree according to the FHEQ guidelines.

Intellectual Skills

On completing the programme students should have acquired:

- B1. The ability to use the scientific method by formulating and testing hypotheses and to identify key data which allow such tests to be made;
- B2. The ability to interpret and effectively summarise quantitative data to test hypotheses, including statistical analysis and interpretation;
- B3. The ability to critically assess the value and limitations of existing information on a given subject and produce critical reviews of such information.

Teaching and Learning Methods

Teaching strategy

Scientific (cognitive, numerical and analytical) skills (B1, B2) are introduced at Stage 1, and more specifically in the study skills module Academic and Professional Skills for the Biosciences. These skills are further developed at Stage 2 through the module Experimental Design and Statistics for Biologists and reinforced at Stage 2 via practical classes and the associated preparation of laboratory reports. B3 is also specifically addressed in the study skills and the experimental design and statistics modules. During Stage 3, B1-3 are all practised in the Residential Field Course, Mammal Surveying Skills and Biological Research Project module, students undertaking the Biological Literature Review or Biological Information Project develop B3 skills and, depending on the project, will also often practise B1 and B2.

Learning strategy

Students are encouraged to acquire B1-2 skills via the study skills module. These skills are reinforced repeatedly when preparing laboratory and field practical reports at Stage 2. At Stage 2 Experimental Design and Statistics for Biologists offers repeated opportunities for practice of B3. Skills B1-3 are all reinforced again in full during the Stage 2 residential field course and at Stage 3 in Mammal Surveying Skills. Stage 3 Biological Research Project requires students to design their own investigations and experiments (B1), analyse data yielded (B2), and appraising the quality of the data collected (B3). The Biological Literature Review and Biological Information Project modules focus on B3.

Assessment Strategy

All intellectual skills are assessed by means of coursework reports and/or small team outputs such as posters or talks in Stages 1 and 2. At Stage 3 some or all of B1-3 (depending on topic) are also examined by means of the dissertation.

The level of academic achievement required under these strategic objectives is consistent with the award of a BSc Honours Degree according to the FHEQ guidelines.

Practical Skills

On completing the programme students should have acquired:

C1 Laboratory experimental and analytical skills, including the use of key equipment, instrument calibration and recording measurements with appropriate precision.

C2. The ability to use keys and field guides to identify plants and animals.

C3. Appropriate field skills: how to observe, record and sample plants and animals in the wild.

Teaching and Learning Methods

Teaching strategy

Laboratory skills (C1) are widely developed in practical components of subject specific modules, especially at Stage 2 and in the Stage 3 research project. The analytical and statistical aspects of C1 are addressed through skills modules in Stages 1 and 2, via many laboratory and field classes in Stage 2, and the research project in Stage 3. The ability to develop identification (C2) and field skills (C3) are developed particularly by the compulsory field course modules.

Learning strategy

Students are encouraged to acquire practical laboratory and field investigation skills (C1, C3) by monitoring of attendance at all laboratory and field classes in Stages 1 and 2. Students can further develop their practical and statistical skills through their application during the residential field course, Mammal Surveying Skills module and the Stage 3 research project.

Assessment Strategy

All practical skills are assessed by means of coursework reports and/or small team outputs such as posters or talks in Stages 1 and 2. At Stage 3 some or all of C1-3 (depending on topic) are also examined by means of the dissertation.).

The level of academic achievement required under these strategic objectives is consistent with the award of a BSc Honours Degree according to the FHEQ guidelines.

Transferable/Key Skills

On completing the programme students should be able to:

D1. Communicate technical information by means of clear written and spoken presentations, following the accepted conventions for specific interchange;

D2. Use library and IT sources efficiently and critically;

- D3. Plan and prioritise work activities in order to meet deadlines;
 D4. Work independently with initiative and also synergistically in teams.

In addition, students opting to take modules covering employability skills at Stage 2 or creativity and marketing in Stage 3 have the opportunity to develop and demonstrate some or all of the following skills:

- D5. The ability to submit effective application for employment;
 D6. Self-appraisal skills with regard to the development of workplace skills;
 D7. The ability to produce a development plan to help overcome identified skills weaknesses;
 D8. The ability to demonstrate personal achievement by preparation of suitable portfolio of evidence.

For students on the Placement Year programme:

- D9. Reflect on and manage own learning and development within the workplace;
 D10. Use existing and new knowledge to enhance personal performance in a workplace environment, evaluate the impact and communicate this process.
 D11. Use graduate skills in a professional manner in a workplace environment, evaluate the impact and communicate the personal development that has taken place.

Teaching and Learning Methods

Teaching strategy

Management of workload in order to meet deadlines (D3) is promoted by means of a strict coursework timetable. All key skills (D1-4) are formally introduced in the Stage 1 study skills module. Team-working skills (D4) are developed through supervised group exercises in the laboratory and field in Stage 2, and as part of the Residential Field Course. Key skills D1-D4 are all developed in modules in Stage 3, especially the projects. For those students opting to take Employability Skills for Biologists, lectures and tutorials help to develop D5-D8, and D6-D8 are further developed in the workplace under guidance from the Placement Tutor and the workplace supervisors. In the optional module Creativity For those students taking a Placement year, preparation for the placement helps to develop D5 and D6-D11 are developed in the workplace with guidance from the Careers Service and the workplace supervisors.

Learning strategy

The learning of these skills by practice with feedback, together with formative and summative assessment, is embedded in the curriculum at all Stages and in the great majority of modules. There are also specific modules at each Stage that give explicit opportunities in this area. Students frequently submit reports based on their own laboratory and field work, conducted in teams or alone (D1, D4). Individual verbal presentations are assessed in the Stage 2 Experimental Design and Statistics for Biologists module and formative feedback is given (D1-2). The application of all these skills (D1-D4) is practiced in the Residential Field Course. Talks are required in addition to the dissertation as outputs from the Biological Literature Review, and other media are routinely used to produce outputs for the Biological Information Project. All research project students at Stage 3 are expected to produce a poster on their project (D1-D4). The optional modules on employability skills and creativity and marketing help students to develop their understanding of business processes within a scientific framework.

Assessment Strategy

D1 and D2 are assessed repeatedly by means of coursework (laboratory and field work reports) at all three Stages. The ability to critically assess and review existing information is specifically tested in the Stage 1 study skills module and in the Stage 3 project modules. Skills D5 to D11 are tested through work placement plans and reflective reports.

The level of academic achievement required under these strategic objectives is consistent with the award of a BSc Honours Degree according to the FHEQ guidelines.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The following principles have been followed within this degree programme with respect to its overall structure:

- **Stage 1** modules are broad in scope and non-overlapping in subject area. They are chosen so that all Stage 1 students receive the same solid grounding in all fundamental areas underpinning

biology, regardless of entry qualifications. Study and reading patterns are quite strongly directed, but students can choose optional modules to a value of 20 credits.

Stage 2 modules are more specialised, relating more closely to the specifics of the subject. As such, they are shared with fewer other degree programmes. In general, study is more self-driven than at Stage 1, and students are encouraged to develop a more individual and original approach to reading and report writing. Some modules are based around techniques, so that at the end of Stage 2, students should be competent to carry out selected species identifications, physiological and ecological analyses. Students will also have had some experience of critically reviewing research literature, experimental design and data analysis, and the presentation of written and spoken reports resulting from their own work.

- **Stage 3** modules are yet more specialised and research led. Much time is taken up with individual research work in the laboratory, library or field. Students are expected to apply the techniques and knowledge that have been learnt in earlier Stages to specific tasks. Work should be highly self-directed and revolve around the study of recent research-based literature. High quality work at this level should combine all the knowledge and skills objectives listed in the preceding sections.

Students on the Careers Placement Year programme will take their placement in the penultimate year of studies.

Key features of the programme (including what makes the programme distinctive)

This ecological and environmental Degree Programme, as well as giving a sound background in general biology, focuses on how biological species interact, both physiologically and ecologically, with each other and their environment. Along with a core of modules dealing with organisms as functioning units, students may take optional modules dealing with ecology to provide them with the knowledge and insights needed to study and manage threatened species and ecosystems, or to control pests and diseases. Alternatively, students can select options with a more cellular and molecular emphasis. The general biology programme is intended to give a broad overview of subject by making a broad range of topics available for selection. During the degree programme they develop skills in practical laboratory and field work, and the critical analysis and communication of scientific information.

This degree programme allows students to undertake an academically coherent study of biology, whilst being able to select topics centred on ecology and conservation biology.

Programme regulations (link to on-line version)

[C182-1145U](#)

13 Support for Student Learning

Generic information regarding University provision is available at the following link.

[Generic Information](#)

14 Methods for evaluating and improving the quality and standards of teaching and learning

Generic information regarding University provision is available at the following link.

[Generic Information](#)

Accreditation reports

Additional mechanisms

15 Regulation of assessment

Generic information regarding University provision is available at the following link.

[Generic Information](#)

In addition, information relating to the programme is provided in:

The University Prospectus: <http://www.ncl.ac.uk/undergraduate/degrees/#subject>

Degree Programme and University Regulations: <http://www.ncl.ac.uk/regulations/docs/>

Please note. 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 she/he takes full advantage of the opportunities provided.

