PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	BSc (Hons)
4	**Programme Title**	Zoology Zoology with Placement Year
5	**UCAS/Programme Code**	C300 1146U
6	**Programme Accreditation**	Not applicable
7	**QAA Subject Benchmarks**	Biosciences
8	**FHEQ Level**	Level 6
9	**Date revised**	August 2021

10 Programme Aims

1. To inspire the next generation of zoologists
2. To provide a programme which: meets the National Framework for Higher Education Qualifications at Honours level; and takes appropriate account of the subject benchmark statements in Biosciences (2007).
3. To recruit well qualified students from a variety of educational backgrounds who wish to undertake a wide ranging, coherent programme of study in Zoology.
4. To produce graduates with the following.
    a) A thorough knowledge and understanding of modern Biology at a general level, and in particular evolutionary relationships, ways of life and ecology. At a more advanced level, students will have knowledge and understanding of particular areas of modern Zoology including animal behaviour and conservation biology, animal physiology and animal ecology.
    b) A wide range of graduate skills, including: laboratory techniques; field techniques; scientific communication; and numerical data analysis.
    c) An experience of a curriculum enhanced by an active research environment, which inspires enthusiasm for Zoology and encourages critical, constructive thinking.
    d) Qualifications to exploit a wide range of employment opportunities in a number of sectors including: education; research; nature and conservation; biomedical; industry and commerce.

For students on the Placement Year programme:

5. Provide students with the experience of seeking and securing a position with an employer.
6. Facilitate independent self-management and proactive interaction in a non-university setting.
7. Provide a period of practical work experience that will benefit current academic study and longer term career plans.
8. Enable students to ethically 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, qualities, 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 gained:	
A1	Knowledge of Zoology from the molecular to the community level.
A2	Knowledge of the diversity of animals and of the principles used to classify them. An understanding of phylogeny and evolution.
A3	An understanding of the ways that different types of animals function, including their physiology and behaviour. An understanding of how animals are adapted to survive and reproduce in different environments.
A4	An understanding of ecology, including of the relationships between different animals and between animals and plants.
A5	A knowledge and understanding of conservation biology, including local and global policies for conservation.
A6	Knowledge of aspects of subjects related to Zoology. This includes a background in microbiology and plant biology.
A7	Experience and appreciation of the operation of the scientific method. This includes: observation; formulating and testing hypotheses; reporting and testing validity of results; and integration of results with wider knowledge.
A8	An informed awareness of the relevance of Biological Knowledge to Society and to contemporary Human problems and needs. Knowledge of legal and ethical aspects of Animal Welfare. First-hand experience of the work performed by professional biologists.
For students on the Placement Year programme:	
A9	Apply personal and professional development strategies to prioritise, plan, and manage their own skills development and learning.
A10	Research, select and apply relevant knowledge aimed at enhancing their own skills and effectiveness in specific duties at their placement.
A11	Demonstrate an understanding of a work environment, how it functions and their contribution to it.
A12	Relate their work based learning to other areas of personal development, including academic performance.

Teaching and Learning Methods

Teaching Strategy

Knowledge and understanding are principally imparted through lectures, practicals, fieldwork, tutorials and independent reading associated with them. Almost all modules of the course cover material relevant to *A1-A3*, and many are relevant to *A4* and *A5. A6* is particularly achieved by modules that include cell and molecular biology, plants and microbes at Stage 1, and by optional module choices.

Stage 1 establishes a solid grounding in modern Biology, and compulsory modules are shared with other Degree Programmes in the Biology group (C301, C1C7, C7C1, CC17, C100, C103, C182 and C183). This enables flexibility in transfer between degree programmes in Zoology and Biology until the start of Stage 2. The teaching at Stages 2 and 3 is more focused on areas of Zoology. Besides imparting factual knowledge, the teaching at Stages 2 and 3 encourages students to think critically about the evidence for factual knowledge, and about the limits of knowledge. Many subjects taught at Stage 3 reflect research specialities of staff and bring students towards the cutting edge of modern investigations. Students are introduced to primary research publications in scientific journals at Stage 1, and develop skills at communicating about Science at each stage by guided practise in tutorials, practical classes and individual projects. *A7* is also taught by practice in scientific investigations gained in practical classes, fieldwork and project work. *A8* is taught in Stage 3 through the 'Current Zoology' module, in which students are encouraged to reflect on the relevance of their knowledge in Zoology to societal issues, and will learn legal and ethical aspects of animal experimentation and welfare.

Learning Strategy

Throughout the taught component of the course, students are encouraged and expected to engage in independent reading. They are supported in this by the provision of reading lists, hand-outs and access to library and web-based resources, particularly the University's Virtual Learning Environment and links to recordings of lectures. Formative feedback is provided during tutorials, seminars and for practical work. Initiative is needed, and confidence gained, by students conducting their own extended project in the final year.

Assessment Strategy

In many modules, particularly those that include lectures and practical work, 50-80% of the assessment is from a written examination and 20-50% is from coursework, which is often in the form of practical write-ups. In various modules, elements of formative, as well as summative, assessment are employed. Components of the written examinations taken by Zoology students include: unseen essay-type questions; pre-prepared essay questions; short answer questions; and problem-solving questions. Some modules are assessed entirely by coursework, particularly those which include a substantial amount of independent, project-type work. At Stage 3 the distribution of exam-assessed and in-course assessed work is more polarised between modules, though as at Stages 1 and 2 each form a major part of the whole Stage 3 assessment.

Intellectual Skills

On completing the programme students should have:

B1 Experience in accessing and assessing validity of sources of zoological information. These sources include books, research literature, public media, and the World-Wide Web.

B2 The abilities to make observations; and to use appropriate instruments to collect data in scientific investigations. These abilities are important both for field and for laboratory work.

B3 The abilities to design experiments and surveys; and to use the scientific method to undertake original investigations.

B4 The abilities to select and use appropriate techniques for data analysis; and to present data using statistical, graphical and other techniques.

Teaching and Learning Methods

Teaching Strategy

B1, B3 and B4 are all introduced to students in class exercises and small-group tutorials in the Stage 1 study skills module Academic and Professional Skills for the Biosciences. Later on *B1* is developed in various modules, but particularly in the final year project module. *B2* is developed in taught laboratory and field classes; for those students taking the research project module, skills of using appropriate instruments and methods to gather data and conduct experiments are further enhanced. *B3* is developed in laboratory and field work in taught modules, and in the research and biological information projects. *B4* is taught extensively by a module on experimental design and statistics at Stage 2, and further developed at Stage 2 in practical classes and the Residential Field Course. The Residential Field Course and the Stage 3 Research Project are particularly significant by encouraging students to practise practical skills with the help of feedback from staff.

Learning Strategy

Students are encouraged to evaluate their progress and are aided in some modules by questionnaires distributed during lectures or on Blackboard, and by return of in-course work with comments. Several opportunities exist, for example in tutorials at Stage 1, for students to offer constructive criticism of each other's work.

Assessment Strategy

Subject-specific skills *B1-B4* are evaluated by assessed written reports. Assessment of laboratory and field work is a feature of some practical components and is often taken into account in the Research Project. *B2* and *B4* are particularly assessed in the Residential Field Course and by the written report of the Research Project.

Practical Skills

On completing the programme students should be able to:

C1 Handle data from a variety of Zoological disciplines.

C2 Interpret observations and data.

C3 Appraise observations and data and produce a reasoned argument.

C4 Communicate effectively about Science using both written and oral presentations.

C5 Solve problems.

Teaching and Learning Methods

Teaching Strategy

Cognitive skills are developed through: lectures and seminars (*C1, C2*); practical classes in laboratory and field (*C2, C3);* and tutorials and seminars (*C4*). They are refined through the Residential Field Course at Stage 2 and in the project at Stage 3.

Learning Strategy

Independent and group project based exercises reinforce lessons and allow self-evaluation and critique. Some practical classes, as well as the project work, involve problem solving.

Assessment Strategy

Cognitive skills are assessed by: unseen written examinations (*C1*); reports on practical work including the residential field course and research project (*C2*); assigned work reports, student talks, seminars, poster presentations and particularly by the research project report (*C3, C4*).

Transferable Key Skills

On completing the programme students should be able to:

D1 Use sources of information effectively.

D2 Summarise and communicate orally, graphically and in writing in a manner appropriate to the target audience.

D3 Work effectively both independently and as a member of a team.

D4 Plan a programme of work so that the work is both competent and timely.

D5 Critically evaluate theoretical and empirical information.

D6 Develop a sense of responsibility to society and the environment.

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

D7 The ability to submit effective applications for employment.

D8 Self-appraisal skills with regard to the development of workplace skills.

D9 The ability to produce a development plan to help overcome identified skills weaknesses.

D10 The ability to demonstrate personal achievement by preparation of a suitable portfolio of evidence.

For students on the Placement Year programme:

D11 Reflect on and manage own learning and development within the workplace.

D12 Use existing and new knowledge to enhance personal performance in a workplace environment, evaluate the impact and communicate this process.

D13 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
Key skills *D1-D5* are taught through: lectures and tutorials in the study skills module at Stage 1, Experimental Design and Statistics for Biologists at Stage 2, the Residential Field Course and the project in Stage 3. *D6* is introduced in the Stage 1 study skills module and is developed at Stage 3 in the Current Zoology module and the optional tropical field course module.

For those students opting to take Employability Skills for Biologists, lectures and tutorials help to develop *D7-D10*, and *D8-D10* are further developed in the workplace under guidance from the Placement Tutor and the workplace supervisors. In the optional module Creativity and Market Research in Science and Engineering, *D8* and *D10* are developed through group meetings. For those students taking a Placement year, preparation for the placement helps to develop *D7* and *D8-D13* are developed in the workplace with guidance from the Careers Service and the workplace supervisors.

Learning Strategy
Key skills are practised under guidance from feedback in practical classes and in specialised tutorials at Stage 1, and developed further through project work at Stage 3. All work that is assessed in-course is subject to submission deadlines (*D4*). *D5* is developed by practical work and particularly by the Stage 3 project. 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

Key skills *D1-D5* are assessed in student presentations at Stage 1, Experimental Design and Statistics for Biologists at Stage 2, the residential field courses and the Stage 3 projects. Skills *D7* to *D13* are tested through work placement plans and reflective reports.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

Stage 1 modules are broad in scope and complementary 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 20 credits of optional module from a selection provided from other areas within the School of Natural & Environmental Sciences. These optional modules allow students to learn about different subjects and reflect the diversity of interests within SNES encouraging an interdisciplinary outlook.

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, and biochemical, 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 Placement Year programme will be on placement year between Stages 2 and 3 of their programme.

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

The degree programme focuses on the scientific study of animals, including how they behave, reproduce, evolve, and interact with other species and their environment. Through lab-based teaching and fieldtrips, students are equipped with key laboratory and field techniques required by professional biologists.

The first year is shared with other degrees in the School, providing all students with a thorough foundation in the essentials of biological science, and allowing for easy transfer before the second year should students' interests change. In later Stages, Zoology students study more specialised topics such as behaviour and physiology, biodiversity and conservation, vertebrate biology and entomology.

The degree is designed to ensure that students gain practical experience. They take part in a number of field courses including a species identification field course and a week-long residential field course including project work. Most modules at Stages 1 and 2 include practical work. At Stage 3, each student undertakes a project that makes up a quarter of their work, and is of one of three kinds: research, biological information or review. The Stage 3 current zoology module encourages students to reflect on what they have learned during their 3-year course and to think about the relevance of what they have learned to society in general.

Programme regulations (link to on-line version)

C300 Zoology

1146U Zoology with Placement Year

13 Support for Student Learning

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

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

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.
https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

15 Regulation of assessment

Generic information regarding University provision is available at the following link.
https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

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 learning opportunities provided.