Programme Specification

BSc Applied Ecology and Conservation

UCAS code: CD94

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject benchmarking group(s):	Biosciences
Faculty of Life Sciences Programme length:	3 years
For students entering Part 3 in:	October 2009
Date of specification:	April 2009
Programme Director:	Dr Gail Hutchinson
Programme Adviser:	Dr P E Hatcher
Board of Studies:	Biological Sciences
Accreditation:	None

Summary of programme aims

The programme in Applied Ecology and Conservation aims to provide students with the opportunity to study ecological principles, and to see how these may be applied to problems in pest management and conservation biology. Part 1 aims to impart an understanding of the basic concepts of modern applied ecological sciences. Part 2 deepens this understanding of ecological concepts and develops a range of expertise over the main areas of the subject. Part 3 aims to study selected subjects in depth and to equip students to tackle detailed problem-solving and analytical tasks associated with applied ecological questions, primarily in pest management and conservation.

During these studies students will be exposed to a variety of information sources and techniques and be trained in various skills including those used in reasoning, argument and communication. Several transferable skills will be acquired including the ability to design and execute experiments in the laboratory and in the field (including working in a team), access information, interpret data using statistics and computing, write essays, scientific papers and reports, and give oral and poster presentations.

Transferable skills

The University's Strategy for Teaching and Learning has identified a number of generic transferable skills which all students are expected to have developed by the end of their degree programme. In following this programme, students will have had the opportunity to enhance their skills relating to career management, communication (both written and oral), information handling, numeracy, problem-solving, team working in the laboratory and in the field, and use of information technology. Students will also gain experience in the methodology of research and scholarship.

Programme content

The profile which follows states which modules must be taken (the compulsory part), together with recommended modules (Part 1 only), and optional modules thought to be most appropriate for applied ecologists. Students must choose modules offered by the School of Biological Sciences, or other University of Reading Schools and Departments, subject to the agreement of the Programme Adviser, to a total of 120 credits in each Part.

Part 1 (three terms, 120 credits)

Compulsory Biological Sciences core modules (90/100 credits)		Credits	Level
AP1A19	Environment in Practice 1	20	C
BI1BC2	Genes and Chromosomes	10	C
BI1EB2	Humans and the Changing World	10	C
BI1EC12	Exploiters and Exploited	20	C
BI1ED2	Mammals: Diversity, Behaviour and Conservation	10	C
BI1EF23	Ecology: Species and their Interactions	20	C
Also, students without AS or A2 level Chemistry or an equivalent qualification are recommended to take:			
CH1FC1	Fundamental Chemistry 1	10	C
Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Adviser.			
Optional modules (20/30 credits)		Credits	Level
AP1A10	Countryside and the Environment	10	C
BI1EA1	Introduction to Enterprise and Marketing	10	C
BI1EG2	Plant Diversity, Structure and Utilisation	10	C
BI1EH1	Principles of Horticulture	10	C
BI1EI1	Soil: Principles and Management	10	C
BI1BA1	The Living Cell	10	C

Part 2 (three terms, 120 credits)

Compulsory modules (100 credits)		Credits	Level
AP2A45	Environment in Practice 2	20	I
AS2A1	Statistics for Life Sciences	10	I
BI2BM5	Science Communication	10	I
BI2EA4	Weed Biology and Control	10	I
BI2EE4	Evolutionary Biology	10	I
BI2EF6	Habitat Management	10	I
BI2EO5	Applied Ecology	10	I
BI2EP5	Crop Pests and Integrated Crop Protection	10	I
Also students are <u>required</u> to take one field course - EITHER:			
BI2EA3	Tropical Biology Field Course *OR*	10	I
BI2EWEV	Biodiversity Field Course	10	I
Optional modules (20 credits) Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Adviser.			
AP2A26	Forestry and Woodlands	10	I
AP2A37	Practical Nature Conservation	10	I
BI2BG5	Animal, Plant and Microbial Development	10	I
BI2EC4	Ecology and Management of Plant Diseases	10	I
BI2EM5	Landscapes for Amenity and Sport	10	I
BI2EH4	Introduction to History and Philosophy of Science	10	I
BI2BN5	Vertebrate Zoology	10	I

Part 3 (three terms

Compulsory modules (60 credits)		Credits	Level
BI3EJ8	Conservation Biology	10	H
AP3A68	Wildlife in the Farming Environment	10	H
BI3PRO	Project	40	H
Optional modules (60 credits)) Students will choose further modules up to a total of 120 credits from this recommended list, or, subject to the agreement of the Programme Adviser from, other BI and AP modules.			
AP3A70	Rural Environmental Sustainability	10	H
AP3A76	Principles and Practice in Biological Control	10	H
AP3EP3	Rural Policy and Countryside Planning	10	H
BI3EA7	Environmental & Ecological Weed Management	10	H
BI3EE8	Biodiversity Assessment and Sustainable use of Plant Resources	10	H
BI3EF8	Biodiversity Informatics	10	H
BI3EI8	Research Topics in Ecology	10	H
BI3EK7	Behavioural Ecology and Life History Theory	10	H
BI3EL7	Plants and Climate	10	H
BI3EN7	Conservation and Biodiversity	10	H
BI3EO7	Physiological Ecology	10	H
SS3A8	Management of Soil Fertility	10	H

Progression requirements
To gain a threshold performance at Part 1 a student shall normally be required to achieve an overall average of 40% over 120 credits taken at Part 1 and a mark of at least 30% in individual modules amounting to not less than 100 credits. **In order to progress from Part 1 to Part 2** a student shall normally be required to achieve a threshold performance at Part 1.

To gain a threshold performance at Part 2 a student shall normally be required to achieve an overall average of 40% over 120 credits taken at Part 2 and a mark of at least 30% in individual modules amounting to not less than 100 credits. **In order to progress from Part 2 to Part 3** a student shall normally be required to achieve a threshold performance at Part 2.

Summary of teaching and assessment
Teaching is organised in modules that typically involve both lectures and practical classes and student-led seminars. The assessments are carried out within the University's degree classification scheme, details of which are in the programme handbooks. The pass mark in each module is 40%.

Part 2 contributes one third of the overall assessment and Part 3 the remaining two thirds. In order to be eligible for Honours, students must pass the Part 3 examination overall and gain at least 40% in the Project.

The assessment is carried out within the University's degree classification scheme, details of which are in the programme handbooks.

Admission requirements

Entrants to this programme are normally required to have obtained:

UCAS Tariff: 300 points from no more than 4 subjects at A level, including grade B in A level Biology and one other Science A level at grade C. Total points exclude Key Skills and General Studies. **GCSEs:** grade C required in Mathematics, English and Science.

International Baccalaureate: Pass Diploma and achieve 6,6,5 in 3 higher level subjects, including Biology and another Science.

Applicants with other types of qualifications and mature students are also encouraged to apply.

Admissions Tutor: Dr Graham Holloway

Support for students and their learning

University support for students and their learning falls into two categories. Learning support includes IT Services, which has several hundred computers and the University Library, which across its three sites holds over a million volumes, subscribes to around 4,000 current periodicals, has a range of electronic sources of information and houses the Student Access to Independent Learning (S@IL) computer-based teaching and learning facilities. There are language laboratory facilities both for those students studying on a language degree and for those taking modules offered by the Institution-wide Language Programme. Student guidance and welfare support is provided by Personal Tutors, the Careers Advisory Service, the University's Special Needs Advisor, Study Advisors, Hall Wardens and the Students' Union.

The Programme Adviser is available to offer advice on the choice of modules within the degree course.

Career prospects

After graduation, students will be qualified to undertake a career in a range of areas, or to use skills and problem-solving abilities in careers not directly related to ecology or conservation. Honours graduates will be eligible for graduate membership of the Institute of Biology, which could lead to Chartered Biologist status.

Industrial Placement

Students who are interested in a scientific career, whether in industry, research or some other related field may be able to apply for a year's placement between Parts 2 and 3. Students who wish to apply would normally be expected to have a weighted average of at least 60% in Part 1.

Opportunities for study abroad

The Erasmus programme (within Socrates) enables undergraduates to undertake project work for one term in their final year at one of a number of European Universities. Recent exchanges involving AMS students have taken place with the following: University of Tours, France; Odense University, Denmark; Uppsala University, Sweden; University College Cork, Ireland; University of Zaragoza, Spain; ENSA, Montpellier, France; University of Cagliari, Sardinia. Students also have the opportunity to go to Rostock University, Germany and Siena University, Italy.

Programme Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas:

Knowledge and Understanding

A. Knowledge and understanding of:		A. Teaching/learning methods and strategies
A. Knowledge and understanding of: 1. The fundamental concepts of ecology 2. The relationship between agriculture and pest management. 3. How ecological principles can be applied to conservation biology. 4. Statistics as applied to biological data. 5. A selection of more specialised optional topics.	$\longmapsto$	A. **Teaching/learning methods and strategies** Formal lectures and practicals supported by tutorials (Part 1), group work and mini-projects. Both laboratory and field work/ecology exercises (including residential field courses), the latter dealing with ecosystems found both in SE England, elsewhere in the UK/Europe, and possibly further afield. **Assessment** Most knowledge is tested through a combination of coursework and unseen formal examinations. Dissertations, oral and poster presentations also contribute.

Skills and other attributes

B. Intellectual skills		B. Teaching/learning methods and strategies
B. Intellectual skills – able to: 1. Think logically. 2. Analyse and solve qualitative and quantitative problems. 3. Organise tasks in structured form. 4. Transfer appropriate knowledge and methods from one topic to another (both previously experienced and novel) within the overall subject area. 5. Plan and conduct an independent project and then to write a report.	$\longmapsto$	**B. Teaching/learning methods and strategies** Rational thought and logical analysis are embedded throughout the program, where solutions to applied problems in whole-organism biology have come about through the application of ecological experiments. Research project in Part 3. **Assessment** Embedded throughout the assessment protocols.

C. Practical skills		C. Teaching/learning methods and strategies
C. Practical skills – able to: 1. Carry out practical work with minimal risk, both to self and to others). 2. Undertake laboratory tasks and techniques. 3. Undertake fieldwork tasks and techniques. 4. Plan experiments and carry them out. 5. Analyse data using appropriate statistical methods, including by computer (e.g. MINITAB)	$\longmapsto$	**C. Teaching/learning methods and strategies** Formal practical classes, both in the laboratory and the field. Mini-projects during field courses. The design, conduct and completion of a research project. Statistical analysis of data is incorporated into appropriate practical classes and is also required for projects. **Assessment** By practical laboratory and fieldwork reports and by project reports.

D. Transferable skills – able to:		**D. Teaching/learning methods and strategies**
1. Use IT. 2. Communicate scientific ideas by a variety of methods and to a variety of target audiences. 3. Give oral and poster presentations. 4. Work as part of a team. 5. Use library resources both paper and electronic. 6. Manage time. 7. Plan a career.	⟶	The use of IT and other skills is a major element of some modules. The use of all skills is embedded throughout the course. The research project is likely to require application of all skills. **Assessment** The skills will enhance to performance of students both in coursework and unseen examinations, including in integrating papers.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably expect to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in module and programme handbooks.