

BSc Applied Ecology & Conservation
For students entering Part 1 in 2006

UCAS code: CD94

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject benchmarking group(s):	Biosciences
Programme length:	3 years
Faculty of Life Sciences	
Date of specification:	July 2006
Programme Director:	Dr P E Hatcher
Programme Adviser:	Dr M D E Fellowes
Board of Studies:	BioEnvironmental Sciences
Accreditation:	None

Summary of programme aims

To provide the students with a broad overview of the primary concepts in ecology, emphasizing applied perspectives. Students will be equipped with in depth insights into how ecological, environmental and agricultural sciences can lead to developments in pest management and conservation biology. This will be achieved by considering the biology and ecology of species within both natural and altered environments, and will focus on how this knowledge can be applied to problems associated with issues as diverse as invasive species, crop pests and weeds, and the conservation of rare species.

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 AMS, Plant Sciences or Agriculture, 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)

Credits Level

Compulsory modules (60 credits)

AP1A02	<i>Introduction to agricultural and food systems</i>	10	C
BI1Z10	<i>Ecology</i>	10	C
BI1Z11	<i>Community ecology</i>	10	C
BI1M10	<i>Biodiversity</i>	10	C
PS1AB2	<i>Physical ecology</i>	10	C
BI1S12	<i>Biological Sciences Field Course</i>	10	C

Optional modules (60 credits to be chosen from those suitable; recommended modules shown below)

AP1A02	<i>Introduction to Rural Resource Management</i>	10	C
AP1A10	<i>Countryside and Environment</i>	10	C
PS1BC2	<i>Introduction to botany</i>	10	C
AP1DV1	<i>International development: global & local issues</i>	10	C
SS1A1	<i>Introduction to soil science</i>	10	C
SS1A2	<i>Soils, land and environment</i>	10	C

Optional modules

Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Adviser.

Part 2 (three terms, 120 credits)

Compulsory modules (60 credits)

AM2Z41	<i>Applied ecology</i>	10	I
AM2Z34	<i>Invertebrate zoology</i>	10	I
PS2BC5	<i>Ecological aspects of environmental assessment</i>	10	I
		<i>Credits</i>	<i>Level</i>
AP2A23	<i>Practical rural environmental science</i>	10	I
AS2A1	<i>Statistics for life sciences</i>	10	I
AP2A21	<i>RES field course</i>	10	I

Optional modules (60 credits)

Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Adviser.

AM2Z33	<i>Animal behaviour</i>	10	I
AM2S37	<i>Aquatic biology</i>	10	I
BI2Z31	<i>Microevolution</i>	10	I
BI2B31	<i>Macroevolution</i>	10	I
AM2Z32	<i>Vertebrate zoology</i>	10	I
PS2AB5	<i>Crop pests and integrated crop protection</i>	10	I
AP2A26	<i>Forestry and woodlands</i>	10	I
AP2A38	<i>Organic farming</i>	10	I
AP2A37	<i>Countryside management</i>	10	I
AP2EE3	<i>Environmental economics</i>	10	I
AP2A40	<i>Aquatic environments</i>	10	I
PS2BA4	<i>Economic botany</i>	10	I
PS2BB4	<i>Evolution of plant diversity</i>	10	I
PS2BG3	<i>Flora of the British Isles</i>	10	I

SS2C5	<i>Soils and environmental pollution</i>	10	I
IWLP	<i>Language programme</i>	10	I

Part 3 (three terms, 120 credits)

Compulsory modules (60 credits)

AM3S75	<i>Project</i>	40	H
AM3Z74	<i>Conservation biology</i>	10	H
AP3A68	<i>Wildlife in the farming environment</i>	10	H

Optional modules (60 credits)

Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Adviser.

AM3Z72	<i>Insects and society</i>	10	H
AP3A50	<i>Crop and water</i>	10	H
AM3Z76	<i>Behavioural ecology and life history theory</i>	10	H
		<i>Credits</i>	<i>Level</i>
AM3Z77	<i>Research topics in aquatic ecology</i>	10	H
PS3BC8	<i>Conservation and biodiversity</i>	10	H
PS3HN7	<i>Landscape ecology and reclamation</i>	10	H
AP3A76	<i>Principles and practice in biological control</i>	10	H
AP3A70	<i>Rural environmental sustainability</i>	10	H
AP3EP3	<i>Rural policy and countryside planning</i>	10	H
PS3BD7	<i>Physiological ecology</i>	10	H
PS3BG8	<i>Biogeography</i>	10	H
PS3BE8	<i>Biodiversity informatics</i>	10	H
PS3HJ7	<i>Landscape management systems</i>	10	H
SS3C8	<i>Soils and the global environment</i>	10	H
PS3AG8	<i>Weed ecology</i>	10	H

Progression requirements

Progression from Part 1 to Part 2

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 in 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.

Progression from Part 2 to Part 3

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 in 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.* Subjects and levels of qualification : *Biology Grade B* and one other A-level Science at grade C. The University supports Key Skills and will take account of points awarded for Key Skills although they are not part of the entry requirements. Entrants will also require Grade B at GCSE in Maths, Science and English.

Irish Highers : *BBBBB (including Biology)*

International Baccalaureat : *31 points (including Biology)*

Mature students and those with other qualifications are 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 membership of the Institute of Biology and Chartered Biologist status.

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 SBS 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.

Educational aims of the programme

After Part 1, students will have gained an understanding of the basic concepts of modern applied ecological sciences. After Part 2, students will have deepened their understanding of ecological concepts and developed a range of expertise over the main areas of the subject. After Part 3, selected subjects will have been studied in depth and students will be equipped 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.

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

<p>A. Knowledge and understanding of:</p> <ol style="list-style-type: none"> 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. 	<p>A. Teaching/learning methods and strategies</p> <p>Formal lectures and practicals supported by tutorials (Part 1), group work and mini-projects.</p> <p>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.</p> <p>1.Assessment</p> <p>Most knowledge is tested through a combination of coursework and unseen formal examinations. Dissertations, oral and poster presentations also contribute.</p>
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Skills and other attributes

<p>B. Intellectual skills – able to:</p> <ol style="list-style-type: none"> 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. 	<p>B. Teaching/learning methods and strategies</p> <p>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.</p> <p>Assessment Embedded throughout the assessment protocols.</p>
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<p>C. Practical skills – able to:</p> <ol style="list-style-type: none"> 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) 	<p>C. Teaching/learning methods and strategies</p> <p>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.</p> <p>Assessment By practical laboratory and fieldwork reports and by project reports.</p>
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<p>D. Transferable skills – able to:</p> <ol style="list-style-type: none"> 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. 	<p>D. Teaching/learning methods and strategies</p> <p>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.</p> <p>Assessment The skills will enhance to performance of students both in coursework and unseen examinations, including in integrating papers.</p>
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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 be expected 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 the module description and in the programme handbook. The University reserves the right to modify this specification in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance processes or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.