

BSc Rural Environmental Sciences (with Industrial Training)

For students entering Part 1 in October 2006

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA Benchmarking Group	Not available
Programme length:	4 years
Date of current specification:	March 2006
Programme Director:	Dr A Wilby
Board of Studies:	Rural Environmental Sciences

Summary of programme aims

The broad aim of the programme is develop an understanding of the scientific principles which underlie the primary rural industries and their interactions with the environment. Students will be able to apply this knowledge to aid sustainable environmental and resource development in the countryside. Students will gain industrial experience in their chosen field.

The testable learning outcomes will be the students ability to:

- Explain complex ecological, biological, economic and political influences within rural environments
- Use a variety of environmental science techniques, particularly in relation to the countryside monitoring, evaluation and management
- Conduct relevant experimental techniques in relation to scientific investigation and constructively analyse data and interpret information.
- Demonstrate a range of personal and transferable skills in keeping with the expectations of a 'Reading graduate'

Note

The profile contained herein states the modules which students must take (compulsory modules), together with a list of modules from which students can choose (optional modules). It is incumbent on the student to choose optional modules that do not clash on the timetable. Students will be given full access to tutorial guidance in terms of the optional modules they choose to enable the 120 credits to be accumulated in each "part" of the degree.

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 and use of information technology.

This degree programme aims to supply the student with a number of specific transferable skills which will be delivered within the modules listed:

- Communicate effectively, using a variety of means, with a wide range of individuals.
- Use problem-solving skills in a range of professional and practical situations.
- Manage change effectively responding to changing demands
- Take charge of Personal Development Planning
- Manage time, prioritise workloads, recognise and manage personal emotions and stress
- IT skills, including the use of the Internet resource.

Programme content

The aim will be to timetable the compulsory modules in such a way as to avoid "clashes". However, the optional modules will be timetabled according to departmental preferences. Thus it will be up to the individual student to ensure the subjects he or she chooses do not involve clashes in the timetable.

Part 1 (three terms, 120 credits) 2006/7

Compulsory Modules (60 credits)

		Credits	Level	Term
AP1A01	Introductory Rural Environmental Science	20	C	1&2
AP1A02	Intro to Agricultural & Food Systems	10	C	
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AP1SCMS	Career Management Skills		I	3
BI1M10	Biodiversity	10	C	1
PS1AB2	Physical Ecology	10	C	2
SS1A2	Soils, Land and the Environment	10	C	2

Optional Modules (60 credits to be chosen from)

AP1A03	Introduction to Livestock Production Systems	10	C	1
AP1A12	Introduction to Crop Production	10	C	2
AP1DV2	International Development: Global & Local Issues	10	C/I	1
AP1SB1	Introduction to Management	10	C	1
AM1S10	Introduction to Biology	10	C	1
B11C10	Cell Biology and Biochemistry	10	C	1
BI1C11	Genetics and Molecular Biology	10	C	2
BI1Z10	Ecology	10	C	2
BI1Z11	Community Ecology	10	C	3
			(wks 34 & 25 only)	
CH1FC1	Fundamental Concepts in Chemistry 1	10	C	1
CH1FC2	Fundamental Concepts in Chemistry 2	10	C	2
ES1A2	Essential Chemistry & Physics for Environmental Scientists	10	C	2
ES1B1	Introduction to Environmental Science	10	C	1
GO1D1	Earth Structure and Materials	10	C	1
GO1D2	Earth History	10	C	2
IWLP	Language Programme	20	C/I	1 & 2
PS1BA2	Plant Physiology and Development	10	C	2
PS1HS1	Soil Use & Management	10	C	1

Part 2 (three terms, 120 credits) 2007/8

Compulsory Modules (60 credits)

		Credits	Level	Term
AP2A21	RES Field Course 1	10	I	3
AP2A23	Practical Rural Environmental Science (Including Career Management Skills)	20	I	4, 5 & 6
AS2A1	Statistics for Life Science	10	I	4
PS2BC5	Ecological Aspects of Environmental Assessment	10	I	5

SS2D5	Sustainable Land Management	10	I	5
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Optional Modules (60 credits from the following)

AM2Z41	Applied Ecology	10	I	5
AP2A25	Grassland Management	10	I	4
AP2A26	Forestry and Woodlands	10	I	4
AP2A33	Agricultural Mechanisation	10	I	4
AP2A37	Practical Nature Conservation	10	I	5
AP2A38	Organic Farming	10	I	4
AP2EE3	Environmental Economics	10	I	4
BI2B31	Macroevolution	10	I	4
BI2Z31	Microevolution	10	I	5
ES2A5	Environmental Systems	10	I	5
IWLP	Institution-wide Language Programme	20	C/I/H	4 & 5
PS2AA5	Plant Genetics	10	I	5
PS2BB4	Evolution of Plant Biodiversity	10	I	4
PS2BD4	Plants and the Environment	10	I	4
PS2BE5	Ecological Biochemistry	10	I	5
PS2HJ4	The Contemporary British Landscape	10	I	5
PS2HL4	Landscape Design	10	I	4
PS2HM5	Landscape Management Plans	10	I	5
PS2HJ5	Landscape Specifications	10	I	5
PS2NA4	Introduction to the History and Philosophy of Science	10	I	4

Industrial Training Placement Year 2008/9

AP2ST1	Industrial training	120	I	7,8,9
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Part 3 (three terms, 120 credits) 2008/9

<i>Compulsory modules (70 credits)</i>		<i>Credits</i>	<i>Level</i>	<i>Term</i>
AP3A40	Geographic Information Systems and Simulation Modelling	10	H	7
AP3A44	Approaches to Sustainable Development	10	H	8
AP3A70	RES Field Course 2	10	H	6
AP3A81*	Dissertation	40	H	6, 7 & 8
AP3A86*	Final Year Project	20	H	6,7

* Students can choose to undertake either AP3A81 Dissertation or AP3A86 Final Year Project. If the latter is chosen then an additional 20 credits of optional modules must be selected.

Optional Modules (50 credits from the following)

AP3A45	Agricultural Systems in the Tropics	10	H	7
AP3A58	Crop and Water	10	H	8
AP3A68	Wildlife in the Farming Environment	10	H	8
AP3A74	Business Entrepreneurship	10	H	8
AP3A76	Principles & Practice in Biological Control	10	H	7

AP3EP3 7	Rural Policy & Countryside Planning	10	H	
PS3AB7	Crops and Climate	10	H	7
PS3BC7	Conservation and Biodiversity: Global & Local Scales	10	H	7
PS3BD7 7	Physiological Ecology	10	H	
PS3BE8	Biodiversity Informatics	10	H	8
PS3HJ7	Landscape Management Systems	10	H	7
PS3HJ8	Landscape Management Techniques	10	H	8
PS3HN7	Landscape Ecology and Landscape Reclamation	10	H	7
SS3C8	Soils and the Global Environment	10	H	8
IWLP	Language Programme	20	C/I/H	7&8

Industrial Training

Organisations are increasingly looking to employ graduates with a broad practical knowledge of their industry and this course offers an ideal opportunity to gain or build on existing experience. All students undertake a year long period of industrial training between Part 2 and Part 3. The placement should be no shorter than 40 weeks and students will be assessed in a pass/fail manner.

Part 1 Examination and 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 of this programme a student shall normally be required to achieve a threshold performance at Part 1.

If you gain a threshold performance at Part 1 and do not proceed to achieve a higher award, you are eligible to receive the award of Certificate of Higher Education. The Part 1 Examination does not contribute to the classification of your degree.

Part 2 Examination and Progression from Part 2 to Part 3

The Part 2 Examination is used to assess a student's suitability to proceed to Part 3 of their programme. It also determines eligibility for the Diploma of Higher Education.

In addition, the marks achieved in the Part 2 Examination contribute to the classification of your degree.

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 (of which not less than 100 credits should normally be at Intermediate level or above), 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. Students must pass their industrial training module by completing the placement, submitting a 3000 word report and by receiving at least 40% in their placement supervisors report.

If you gain a threshold performance at Part 2 and do not proceed to achieve a higher award, you are eligible to receive the award of Diploma of Higher Education.

Part 3 Examination

The classification of the degree will normally be based on the marks for Part 2 and Part 3 modules, weighted in a ratio of 1:2. Full details of classification conventions (that is, the rules for determining your final degree award) can be found in your Programme Handbook

Summary of teaching and assessment

Teaching is compartmentalised into modules. Although there is a strong element of traditional lecturing in the course students are expected to undertake project work from term 1 onwards. This involves field classes and laboratory work. In addition to fieldwork students visit various relevant sites and organisations. Project work is often associated with such visits. Students are expected to attend a weeklong study tour in the summer vacation. Assessment of coursework is undertaken via a number of methods including short answer exams, essays, presentations and debates. Formal examinations also take place in weeks 4 to 8 of the summer term.

Admission requirements

Entrants to this programme are normally required to have obtained:

Grade C or better in English in GCSE; and achieved

UCAS Tariff: minimum 240 points including at least two full A Levels

International Baccalaureat: 29 pts

Irish Leaving Certificate: BBCC

Two AS grades are accepted in place of one A-Level

HND Candidates who achieve good results can be exempted from the first year of the degree course allowing them to obtain an honours degree in two years. A special arrangement with BTec applications with good results in appropriate science courses will be considered as will mature applicants with unconventional qualifications.

Admissions Tutor: Dr Andy Wilby

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.

Career prospects

The Rural Environmental Sciences degree course is particularly appropriate for employment in environmental research institute, environmental conservation, in scientific research services of the commercial sector and as specialist technical advisors both in the UK and overseas. Some graduates go on to post-graduate studies before entering these careers. The industrial training placement will provide the real-life work experience that employees are increasingly demanding.

Opportunities for study abroad or for placements

Students can spend a term in Part 2 at one of several European universities with whom the university has exchange arrangements. Students must undertake a minimum of 40 weeks experience in a related industry.

Educational aims of the programme

The programme aims to provide a thorough degree-level education in Rural Environmental Science, with emphasis on the scientific and analytical aspects alongside key skills in IT and personal communication.

Programme Outcomes

Knowledge and Understanding

<p>A. Knowledge and understanding of:</p> <ul style="list-style-type: none">• The sciences underpinning the rural environment• Factors influencing change in rural environments• Methods, techniques and disciplines for studying and analysing the above• Scientific principles, functions and relevant methods	<p>Teaching/learning methods and strategies Knowledge required for the basic topics is gained through a combination of lectures, practical lab based work and field classes. The aim of Part I is to provide students with a formal grounding in the sciences underpinning the rural environment. Formal sessions are supported by tutorials, seminars and Part I project work. Emphasis is given to encouraging teamwork within the cohort. The emphasis on independent learning increases throughout the degree programme via project and field work and increased directed reading and study.</p> <p><i>Assessment</i> Knowledge is tested by coursework, formal examination and individual and group presentations. The final year dissertation is a major part of assessed work which tests both curricula and transferable skills.</p>
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Skills and other attributes

B. Intellectual skills – able to:

- Apply the skills needed for academic study and enquiry
- Obtain and synthesise information from relevant sources to develop an understanding of theory and practice
- Critically evaluate theories, concepts and methods with respect to scientific investigation in the rural environment
- Utilise skills for experimentation, monitoring and analysis in the rural environment
- Develop informed, logical and justified opinions on issues related to the rural environment, processes and interactions

Teaching/learning methods and strategies

Emphasis on independent learning is encouraged from Part I of the programme and students are given tutorial support academic searching, writing and presentation. This degree programme is integrative in nature which encourages students to think and synthesise across traditional academic boundaries. Much of the programme is designed so that theoretical knowledge is consolidated in a practical setting which allows students to enhance their intellectual skills. Much of the material presented in lectures is drawn upon in monitoring and experimental exercises which require students to think in a logical and scientifically rigorous manner

Assessment

Students are expected to keep field work diaries which are assessed at the end of each term. Several modules are assessed via debating sessions.

C. Practical skills – able to:

- Design field experiments
- Conduct analysis using good lab practice
- Measure and monitor in the rural environment
- Analyse data in a statistically rigorous manner
- Construct reports using latest computer technology

Teaching/learning methods and strategies

Throughout the degree programme students are expected to carry out experimentation and monitoring in the rural environment. The university owns a variety of rural environs and students also visit a range of different sites locally. In addition the degree programme contains two week long field trips to non-local environs where students are expected to investigate a variety of issues.

Assessment

Students keep field work diaries and submit regular assignments related to their practical work. Some modules involve the "commissioning" of reports which are then assessed by professional in the field (i.e. the local planning officer).

D. Transferable skills – able to:

- Investigate issues in a wide range of field and lab. situations
- Communicate ideas, arguments and information using appropriate means
- Work in teams to perform a variety of tasks
- Identify goals and planning and manage time to achieve these
- Use and apply up to date IT

Teaching/learning methods and strategies

Transferable skills are ‘signposted’ and generally incorporated within modules and related to relevant assessments as appropriate. Examples of strategies include: seminars; individual and group project and investigative work; presentations; problem based learning scenarios.

Assessment

Assessment of transferrable skills is generally an integral part of the degree curriculum and is thus tested within modules from Part I through to Part III.

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.