BSc Habitat and Soil Management

Awarding Institution: Teaching Institution: Relevant QAA subject benchmarking group:

Faculty of Science For students entering Part 1 in 2002 Programme Director: Dr C J B Mott Programme Adviser: Dr C J B Mott Board of Studies: BSc Degrees in Soil Science

Summary of programme aims

The University of Reading The University of Reading Earth Science, Environmental Sciences & Environmental Studies Programme length: 3 years Date of specification: 23/04/2001

The programme aims to provide the student with a degree level education in Soil Science with special emphasis on an understanding of the interaction of soil conditions and plant growth.

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 develop their skills relating to career management, communication (both written and oral), information handling, numeracy, problem-solving, team working and use of information technology.

As part of this programme students are expected to have gained experience and show competence in the following skills: IT (word-processing, data manipulation, use of simulation modelling techniques), scientific writing, oral presentation, teamworking, problem-solving, use of library resources, time management, career planning and management and simple risk assessment.

Programme content

The profile which follows states which modules must be taken (the compulsory part), together with lists of modules from which the student must make a selection (the 'selected' part). Students must select from these modules as they wish, in consultation with their programme adviser, to make 120 credits in each Part. It is possible through option selection to study a foreign language, if desired, throughout the whole programme. The number of credits for each module is shown after its title.

Part 1 (three terms): 2002/3

Credits Level

Compulsory modul	es (80 credits)		
PS1AA1	Plants in agriculture	10	С
PS1BA1	How plants work	10	С
SS1B1	Biological processes in soil	10	С
SS1C1	Soil use and management	10	С
PS1BA2	Plant development	10	С
SS1A2	Soils, land and environment	10	С
SS1B2	Soil processes and applications	10	С
SS1A3	Soil field studies	10	С

UCAS code: D963

Selected Modules

Any combination, to give a total of **40** credits, from the following list: Part 1 modules from:

Agriculture		Credits	Level
AP1A01	Introduction to rural environmental science	10	С
AP1A10	Countryside and the environment	10	С
AP1A11	Introduction to the basis of crop production	10	С
Animal and M	ficrobial Sciences		
AM1Z11	Environmental biology	10	С
BI1C10	Cell biology and biochemistry	10	С
BI1C11	Genetics and molecular biology	10	С
BI1M10	Biodiversity	10	С
BI1S10	Chemistry for biologists	10	С
Plant Science			
PS1AB2	Physical ecology	10	С
PS1HN1	Ecology and the landscape	10	С
and may			
include	A language	20	

Part 2 (three terms): 2003/4

Credits Level

Compulsory modules	s (100 credits)		
PS2BB4	Evolution of plant biodiversity	10	Ι
PS2BC4	Plants and the environment	10	Ι
PS2BC5	Ecological aspects of environmental assessment	10	Ι
SS2B5	Soil conditions and plant growth	10	Ι
SS2A6	Soil survey and field experimentation	10	Ι
PS2BB5	Career management and presentational skills	10	Ι
Together with three	from:		
SS2A4	Soil physical properties and their measurement	10	Ι
SS2B4	Chemistry of soil constituents	10	Ι
SS2C4	Soil microbiology and biotechnology	10	Ι
SS2D4	Soils and soil development	10	Ι
Together with one fr	om:		
SS2A5	Transport processes in soils	10	Ι
SS2D5	Sustainable land management	10	Ι
	-		

Option Modules

Any combination, to give a total of **20** credits, chosen from the following list:

(a) Part 2 module(s) in the Soil Science list not taken as a compulsory module

(b) Other Part 2 modules chosen from the following:		Credits	Level
AP2A26	Forestry and woodlands	10	Ι
AP2A37	Countryside management	10	Ι

	Credits	Level
Organic farming	10	Ι
Weed biology and control	10	Ι
Plants and man	10	Ι
Plant anatomy	10	Ι
Plant biochemistry	10	Ι
(c) A language		
	Organic farming Weed biology and control Plants and man Plant anatomy Plant biochemistry	Organic farming10Weed biology and control10Plants and man10Plant anatomy10Plant biochemistry10Nage20

Part 3 (three terms): 2004/5

Credits Level

Compulsory modul	les (100 credits)		
PS3BF8	Botany field course	20	Н
PS3BG8	Biogeography	10	Н
SS3A8	Soil fertility management	10	Н
SS3PH	Habitat and soil management project	40	Н
One from:			
SS3B7	Soils, vegetation and the atmosphere	10	Н
SS3C7	Soil and land evaluation	10	Н
and one from			
SS3C8	Soils and the global environment	10	Н
SS3D8	Soil classification and multivariate methods	10	Н

Option modules

Any combination, to give a total of **20** credits, chosen from the following list:

(a) Part 3 module(s) in the Soil Science list not taken as a compulsory module

(b) Other Part 3 modules chosen from the following:		Credits	Level
AP3A58	Crop water relations and irrigation	10	Н
AP3A59	Forestry and agroforestry	10	Н
PS3AE7	Weed management	10	Н
PS3AG8	Weed ecology	10	Н
PS3BC7	Conservation and biodiversity	10	Н
PS3HJ8	Landscape management techniques	10	Н
(c) A language		20	

Progression requirements

To proceed to Part 2 it is necessary to have obtained an overall average of at least 40% and at least 40% in the **eight** compulsory modules. There is a pass threshold of 30% in **every** module.

To proceed to Part 3 it is necessary to have obtained an overall average of at least 40% and at least 40% in **eight** of the ten compulsory modules. There is a pass threshold of 30% in **every** module.

Part 2 contributes one third of the overall assessment and Part 3 the remaining two thirds.

Summary of teaching and assessment

Teaching is organised in modules that typically involve both lectures and practicals. Modules are assessed by a mixture of coursework (which may include tests) and formal examination. The Part 3 Project, however, is assessed only as coursework.

Admission requirements

Entrants to this programme are normally required to have obtained: UCAS Tariff: 260 points overall, including any two science subjects at A2 level.

Admissions Tutor: Dr Hazel McGoff (h.j.mcgoff@rdg.ac.uk)

Support for students and their learning

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 4000 current periodicals, has a range of electronic sources of information and houses a Student Learning Centre with some 200 workstations. There are language laboratory facilities available for students taking modules (available as an option within the BSc Soil Science programme) 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 Adviser, Hall Wardens and the Students' Union.

Within the providing department additional support is given through extensive personal contact during practical and field classes.

Career prospects

Students have found employment in a wide range of environmentally related areas, especially in the consultancy industry, local government and research organisations.

Opportunities for study away from Reading

It is possible within this programme for a student, provided he/she has passed Part 2, to accept a relevant placement in the UK or overseas for one year before beginning Part 3.

Educational aims of the programme

The programme aims to provide a degree-level education in soil and plant sciences and to establish a thorough scientific basis for the application of the subject to a wide variety of habitats and contemporary applications. It aims to produce soil scientists who have sufficient training and experience of plants, in both cultivated and natural environments, to be able to make a contribution to the sustainable use of soil as a medium for plants and crops at all levels of scale..

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

Knowledge is tested through a combination of coursework (including essays, reports on laboratory practical and fieldwork and tests, some of which is formative) with (summative) unseen examinations. Project dissertations and oral presentations also contribute.

B. Intellectual skills - able to

- 1. Obtain and use information and ideas from both on- and off-line sources
- 2. Transfer and integrate appropriate knowledge and methods from one topic within the subject to another
- 3. Understand how scientific knowledge can be applied in a practical context
- 4. Understand the evolving state of knowledge in a rapidly developing field
- 5. Construct and test hypotheses
- 6. Plan, conduct and write a report on an independent research project

Teaching/learning methods and strategies

Soil/plant relations is an applied discipline and the use of basic science applied to real life contexts is at the heart of all teaching in the subject. Field based and other practical work is used extensively to provide develop skills 2 and 3.

Seminar and essay/report work is used to provide a context for 1 and 4. The long independent research project is designed to teach and use skills 5 and 6. *Assessment*

Development of these skills is essential to permit the student to perform well in much of the coursework and in the examinations associated with the programme. Skills 2 and 4 are an important component of the successful completion of Part 3 work and skills 1, 3, 5 and 6 are tested in the research project report.

C. Practical Skills

Students learn to carry out practical work, in laboratory and field, with an understanding of safety and risk. They gain experience of the following skills:

- 1. Soil assessment, chemical, physical and biological
- 2. Identification and assessment of soils and plant communities in the field
- 3. Manipulation of computer simulation models
- 4. Data analysis using appropriate statistical techniques

Teaching/learning methods and strategies

These skills are taught specifically during practical and field classes. Individual tuition is given within a class context to ensure that techniques are understood. Some practical skills, including the use of high level research equipment, may be developed to an advanced level in the Part 3 research project.

Assessment

The development of practical skills is tested both formatively and summatively through written reports on practical work, presentations and fieldwork, and in the dissertation based on the research project.

D. Transferable skills - able to

- use IT (including appropriate software packages)
 communicate scientific ideas in written and oral form
 work as part of a team
 use library and internet resources
- 5. manage time
- 6. plan their career

Teaching/learning methods and strategies

Use of IT and library resources is embedded throughout the programme and is essential to complete much of the coursework. Written communication skills are developed through reports and essays and further in the preparation of the research project dissertation, activities which also require the use of library and internet resources. Oral skills are developed through seminars, some of which are organised on a small team basis. Teamwork is an essential element of field class mini-project work and is specifically tested in some laboratory work. Time management is essential for all laboratory and field activities, and is essential for the effective completion of the programme. There is a specific module on Career Management skills as well as discussion through the personal tutor system and the completion of a personal academic record.

Assessment

Development of skills under 1, 2 and 4 is essential for a good performance in much of the coursework associated with the programme. Effective use of skills 3 and 5 will also make an important contribution and skill 6 is specifically assessed.

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 of the learning outcomes, content and teaching, learning and assessment methods of each module can be found in module and programme handbooks