Programme Specification

BSc Horticulture and Environmental Management
UCAS code: D250
For students entering Part 3 in October 2009

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject benchmarking group(s):	AFAFCS
Faculty of Life Sciences	
Programme length:	3 years
Date of specification:	April 2009
Programme Director:	Dr Gail Hutchinson
Programme Adviser:	Dr Bob Froud-Williams
Board of Studies:	Biological Sciences
Accreditation:	None

Summary of programme aims
The programme in Horticulture and Environmental Management aims to provide students with the opportunity to study the production and biology of horticulturally important crops, and to integrate this with an understanding of the science on which the industry is based.

Students will be equipped with a broad and integrated understanding of the many facets of modern horticulture and an understanding of the science on which the industry is based. In particular students will be asked to:

- Recognise the factors influencing the development of commercial and amenity horticulture.
- Describe and assess the characteristics and production systems for major horticultural crops.
- Assess factors which are likely to influence the use of plants in gardens, amenity landscapes and for therapeutic purposes.
- Evaluate scientific, technical and socio-economic advances and trends having potential impacts on the horticultural industry.

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 that follows states which modules must be taken (the compulsory modules), together with lists of modules from which the student must make a selection (the optional modules). Students must select from these modules as they wish, in consultation with their

programme adviser, to make 120 credits in each Part. The number of credits for each module is shown after its title.

Part 1 (three terms)

Compulsory modules *(90 credits)*		*Credits*	*Level*
BI1BC2	Genes and Chromosomes	10	C
BI1EA1	Introduction to Enterprise and Marketing	10	C
BI1EC12	Exploiters and Exploited	20	C
BI1EF23	Ecology: Species and their Interactions	20	C
BI1EG2	Plant Diversity, Structure and Utilisation	10	C
BI1EH1	Principles of Horticulture	10	C
BI1EI1	Soil: Principles and Management	10	C
Optional modules *(30 credits)* To achieve a total of 120 credits, students will choose from the following modules, or from modules available on other programmes and from other Schools, subject to approval by the Programme Adviser:			
AM1P11	Introductory Microbiology	10	C
BI1BA1	The Living Cell	10	C
BI1EB2	Humans and the Changing World	10	C

Part 2 (three terms)

Compulsory modules (100 credits)		*Credits*	*Level*
AS2A1	Statistics for Life Sciences	10	I
BI2BM5	Science Communication	10	I
BI2EB4	Arboriculture and Ornamental Crops	10	I
BI2EC4	Ecology and Management of Plant Diseases	10	I
BI2EE4	Evolutionary Biology	10	I
BI2EG5	Horticultural Crop Production	10	I
BI2EJ4	Landscape Management Plans for Nature Conservation & Amenity	10	I
BI2EK4	Plant Physiology	10	I
BI2EM5	Landscapes for Amenity and Sport	10	I
BI2ES3P	Horticulture Field Course	10	I
Optional modules *(20 credits)****.*** To achieve a total of 120 credits, students will choose from the following modules, or from modules available on other programmes and from other Schools, subject to the approval of the Programme Adviser and timetable restrictions:			
AP2A26	Forestry and Woodlands	10	I
BI2BG5	Animal, Plant and Microbial Development	10	I
BI2EA4	Weed Biology and Control	10	I
BI2EF6	Habitat Management	10	I
BI2EP5	Crop Pests and Integrated Crop Protection	10	I
BI2ER5	Ecological Aspects of Environmental Impact Assessment	10	I

Part 3 (Total 120 credits)

Compulsory modules: *(50 credits)*		***Credits***	***Level***
BI3ET8	Landscape and Sustainability	10	H
BI3PRO	Research Project	40	H
Optional modules *(70 credits).* To achieve a total of 120 credits, students will choose from the following modules, or from modules available on other programmes, subject to the approval of the Programme Adviser and timetable restrictions: Research Project			
AP3A76	Principles and Practice in Biological Control	10	H
BI3EA7	Environmental and Ecological Weed Management	10	H
BI3EC8	Quality Management Systems	10	H
BI3EH8	Plant Biotechnology for Post Harvest Quality	10	H
BI3EL7	Plants and Climate	10	H
BI3ER8	Organic and Sustainable Horticulture	10	H
BI3ES8	Controlled Environment Technology	10	H
BI3EV8	Biotechnology for Plant Breeding	10	H
BI3EW7	Horticultural Crop Technology	10	H
BI3EX7	Community and Landscape	10	H
BI3EY7	Living Landscapes	10	H
BI3EZ7	Pests And Diseases of Horticultural Crops	10	H
MM270	The Practice of Entrepreneurship	20	I**

****** In order to graduate, students must have at least 100 credits at "H" level. Therefore, a maximum of 20 credits at "I" level may be selected.

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 which may involve lectures, practicals, tutorials, project work or any combination of these approaches. Assessment methods depend on teaching methods and expected learning outcomes for each module.

Admission requirements

Entrants to this programme are normally required to have obtained:
UCAS Tariff: 220 points, with Biology and/or Chemistry at A level preferred. Total points exclude Key Skills and General Studies. **GCSEs:** Biology, Mathematics and Chemistry required if not taken at a higher level.
International Baccalaureate: Pass Diploma and achieve 5,5,5 in 3 higher level subjects, including Biology and/or Chemistry.
Applicants with other types of qualifications and mature students are also encouraged to apply

Admissions Tutor: Dr Bob Froud-Williams

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
There is considerable national and international demand for Horticulture graduates especially in the production and marketing sectors of horticulture, in consultancy, research and in publishing. A significant minority of graduates have established their own businesses as nurserymen or landscape contractors.

Opportunities for study away from Reading
Students are encouraged to take a relevant placement for one year between Parts 2 and 3. Past students have secured a wide range of placements in the UK and overseas.

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: The fundamental concepts and techniques of Horticulture in the UK including: 1. A broad and integrated introduction to all the major sectors of horticulture including amenity horticulture. 2. The scientific knowledge underpinning the development of current horticultural knowledge.	→	**Teaching/learning methods and strategies** The knowledge base is developed through formal lectures, seminars, practical classes and visits. There is considerable emphasis throughout the programme on application of acquired knowledge in practical exercises and projects as a means of reinforcing the knowledge base. **Assessment** Most knowledge is tested through a combination of coursework (including oral presentations) and unseen final examinations. The dissertation plays a significant part in final assessment.

Skills and other attributes

B. Intellectual skills – able to: 1. Think logically 2. Define, analyse and solve problems 3. Organise tasks into a structured form 4. Understand the evolving state of knowledge and appreciate the balance between knowledge and judgement. 5. Transfer appropriate knowledge and methods from one aspect of the subject to another. 6. Plan, conduct and write a report on an independent project.	→	**Teaching/learning methods and strategies** Defining, analysing and solving problems and thinking logically are taught by example in lectures, practical exercises and seminars, by preparing experimental reports, preparing presentations and seminar material, by written and numerical work throughout most modules, and by the requirement to find and select appropriate information from sources such as the library and the web. In several practical exercises students are required not only to organise tasks but to analyse and report on their approach to those tasks and its effectiveness. Therefore, all aspects 1-6 are integral to the programme. **Assessment** 1-6 are assessed directly and indirectly throughout the programme but especially in Practical Horticulture modules. 4 is assessed in Principles of Horticulture, Horticultural Crop Production; 5 and 6 are assessed in the Project.

C. Practical skills – able to: 1. Understand plant structure and identify plant species. 2. Carry out a range of practical horticultural operations. 3.Demonstrate basic experimental skills in topics chosen from ecology, physiology, entomology, plant pathology, micro-propagation and genetics. 4. Plan and conduct a research project within time and resource constraints.	→	**Teaching/learning methods and strategies** Practical skills in plant structure and function, plant identification and horticultural operations are taught in Part 1 and Part 2. Experimental skills are taught in lectures, practicals and in individual and group project work in Part 1 and Part 2. A supervised research project on a specific horticultural topic is carried out in Part 3. **Assessment** 1 and 2 are assessed in practical classes and through practical notebooks. 3. in the assessment of modules specifically associated with these subject areas. 4. in the assessment of project work in Part 3.

D. Transferable skills – able to: 1. Use IT for general (word-processing, spread sheet and data processing). 2. Use numerical skills. 3. Use library and other information resources. 4. Use verbal and graphic skills in presentations. 5. Work as part of a team. 6. Manage time effectively. 7. Plan their career.	→	**Teaching/learning methods and strategies** The Science Communication (Part 2) including the Career Management Skills (CMS) sub-module deals specifically with all these facets. 1 is taught specifically in Part 1 (Computing); 2 is incorporated in Practical Horticulture (Part 1 Part 2), Physiology (Part 1) and Research Project (Part 3). 3 is taught in CMS. 4 and 5 are taught specifically in the Presentation Skills component of Management and Transferable Skills but are also addressed in the majority of modules taught by the School. An understanding of the importance of time management is developed by working on projects of increasing complexity to strict deadlines. 7 is addressed in the CMS sub-module, through the Personal and Academic Record system. **Assessment** 1 and 2 are assessed through coursework. 3 is assessed indirectly in seminar and report preparation and especially by the quality of the bibliography in the dissertation. 4 and 5 are assessed in several Part 2 modules. Attendance and punctuality are assessed in Part 1 Horticulture modules especially. Other aspects of time management are not assessed specifically but are needed for the successful outcome of most project work, in essay preparation and in examinations. 7 is not 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 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.