BSc Horticulture and Environmental Management   **UCAS code: DF48**
For students entering Part 1 in 2009/0

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject Benchmarking group(s):	AFAFCS
Faculty:	Life Sciences Faculty
Programme length:	3 years
Date of specification:	18/Jul/2011
Programme Director:	Dr Demetris Savva
Programme Advisor:	Dr Bob Froud-Williams
Board of Studies:	Biological Sciences
Accreditation:	Not applicable

Summary of programme aims
The programme in Horticulture 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. The programme aims to equip students 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
During the course of their studies at Reading, all students will be expected to enhance their academic and personal transferable skills in line with the University's Strategy for Learning and Teaching. In following this programme, students will have had the opportunity to develop such skills, in particular 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 and will have been encouraged to further develop and enhance the full set of skills through a variety of opportunities available outside their curriculum. 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

Code	Module title	Credits	Level
BI1EA1	Introduction to Enterprise and Marketing	10	4
BI1EC12	Exploiters and Exploited	20	4
BI1EF23	Ecology: Species and their Interactions	20	4
BI1EG1	Plant Diversity, Structure and Utilisation	10	4
BI1EH1	Principles of Horticulture	10	4
BI1EI1	Soil: Principles and Management	10	4
BI1BC2	Genes and Chromosomes	10	4

Optional modules (30 credits)

To achieve a total of 120 credits, students will choose further modules, subject to approval by the Programme Adviser and timetable restrictions. Suggested modules include:

AM1P11	Introductory Microbiology	10	4
AP1A02	Introduction to Agriculture and the Food Systems	10	4
AP1A10	Countryside and the Environment	10	4
AP1ED1	International Development	10	4
AP1EE1	Economics 1*	10	4
AP1EE3	Economics 2*	10	4
BI1BA1	The Living Cell	10	4
BI1EB2	Humans and the Changing World	10	4

*NB: AP1EE1 is a pre-requisite for AP1EE3

Part 2 (three terms)
Compulsory modules

Code	Module title	Credits	Level
AS2A1	Statistics for Life Sciences	10	5
BI2BM5	Science Communication	10	5
BI2EB4	Arboriculture and Ornamental Crops	10	5
BI2EG5	Horticultural Crop Production	10	5
BI2EK4	Plant Physiology	10	5
BI2EM5	Landscapes for Amenity and Sport	10	5
BI2ES3P	Horticulture Field Course	10	5
BI2EC4	Ecology and Management of Plant Diseases	10	5

Optional modules (40 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:

AP2A26	Forestry and Woodlands	10	5
BI2BG5	Animal, Plant and Microbial Development	10	5
BI2EA4	Weed Biology and Control	10	5
BI2EF6	Habitat Management	10	5
BI2ER5	Ecological Aspects of Environmental Impact Assessment	10	5
BI2EX5	Introduction to Entomology	10	5

Part 3 (three terms)
Compulsory modules

Mod Code	Module Title	Credits	Level
BI3PRO	Research Project	40	6
BI3EA7	Environmental & Ecological Weed Management	10	6
BI3ER8	Organic & Sustainable Horticulture	10	6
BI3ES8	Controlled Environment Technology	10	6
BI3EW7	Horticultural Crop Technology	10	6
BI3EY7	Living Landscapes	10	6
BI3EZ7	Pests and Diseases of Horticultural Crops	10	6

Optional modules (20 credits)

Students will choose further modules, to achieve a total of 120 credits, from the list of recommendations below. Subject to agreement from the Programme Adviser, alternative modules may be chosen from the School of Biological Sciences or, exceptionally, from other Schools. Timetable restrictions may apply.

AP3A64	Human Resource Management	10	6
AP3A76	Principles and Practice in Biological Control	10	6
BI3EL7	Plants and Climate	10	6

| MM270* | The Practice of Entrepreneurship | 20 | 5 |

A maximum of 20 credits at level 5 may be selected in Part 3

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.

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 gain an overall weighted average mark of 40%, at least 40% in modules amounting to 80 credits in Part 3, and must gain a mark of at least 40% in the Research Project module. For a Pass degree, candidates must have an average of at least 35% and at least 35% in modules amounting to 80 credits in Part 3.

Summary of Teaching and Assessment

Teaching is organised in modules. Teaching in Part 1 consists of lectures and practical classes with small group work being largely restricted to some aspects of practical classes or study sessions. Modules can be assessed by 100% coursework but more usually are assessed by a combination of coursework (20%) and formal examination (80%).

In Parts 2 and 3, lectures and practical classes continue to be major modes of teaching but they are increasingly supplemented by seminars and other group work. Modules can be 100% in-course assessed but are more usually assessed by a combination of coursework (30%) and formal examination (70%).

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, 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 R J Froud-Williams

Support for students and their learning

University support for students and their learning falls into two categories.   Learning support is provided by a wide array of services across the University, including: the University Library, the Student Employment, Experience and Careers Centre (SEECC), In-sessional English Support Programme, the Study Advice and Mathematics Support Centre teams, IT Services and 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, School Senior Tutors, the Students' Union, the Medical Practice and advisers in the Student Services Centre. The Student Services Centre is housed in the Carrington Building and offers advice on accommodation, careers, disability, finance, and wellbeing. Students can get key information and guidance from the team of Helpdesk Advisers, or make an appointment with a specialist adviser; Student Services also offer drop-in sessions and runs workshops and seminars on a range of topics. For more information see www.reading.ac.uk/student

Career prospects
Horticulture students are eligible for membership of the Society of Biology and can achieve Chartered Biologist status. 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 abroad or for placements

Industrial Placement:
Students who are interested in a scientific career, whether in industry, research or some other related field can 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.

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 School of Biological Science 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:

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Knowledge and Understanding

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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.

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Skills and other attributes

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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.

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; 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 process or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.