

BSc Botany

UCAS code: C200

Awarding Institution:
Teaching Institution:
Relevant QAA subject benchmarking group(s):
Faculty of Life Sciences
For students entering Part 1 in 2003
Programme Director: Dr. R.E. Longton
Programme Adviser: Dr J.D. Ross
Board of Studies: Botany and Botany & Zoology
Accreditation: None

The University of Reading
The University of Reading
Bioscience
Programme length: 3 years
Date of specification: May 2003

Summary of programme aims

The programme aims to provide a thorough, degree-level education in the main areas of Botany. It encompasses traditional studies of whole-plant biology with a consideration of recent advances at the biochemical, ultrastructural and molecular levels.

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 and data handling, numeracy, problem solving, team working and use of information technology. There is also an opportunity for language study.

Programme content

The programme which follows lists those modules which must be taken (compulsory modules). Students are required to choose additional modules during the Autumn and Spring Terms each year, in consultation with their Course Adviser, to make 120 credits in each Part. Additional modules will normally be selected from those offered by Plant Sciences, AMS, Geography or Soil Science. However, students lacking A-level Chemistry or an equivalent qualification should take Chemistry for Biologists (BI1S10) as an additional module in Part 1. In Parts 2 and 3, the additional modules will normally include a selection from the Plant Science modules listed below as optional. The additional modules may include language modules offered by IWLP.

Part 1 (three terms)

Compulsory modules

		<i>Credits</i>	<i>Level</i>
PS1BA1	<i>How plants work</i>	10	C
PS1BB1	<i>Current topics in plant biology</i>	10	C
BI1C10	<i>Cell biology and biochemistry</i>	10	C
BI1M10	<i>Biodiversity</i>	10	C
PS1BA2	<i>Plant development</i>	10	C
BI1C11	<i>Genetics and molecular biology</i>	10	C
PS1BB2	<i>Morphology of land plants</i>	10	C
BI1Z10	<i>Ecology</i>	10	C
BI1Z11	<i>Community ecology</i>	10	C

Required modules

In addition, students without a post-16 qualification in chemistry must take:

BI1S10	<i>Chemistry for biologists</i>	10	C
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Optional modules

Students will choose additional modules to make a total of 120 credits which include those in the following list:

BI1S11	<i>Concepts and skills I</i>	10	C
AM1Z11	<i>Environmental biology</i>	10	C
AP1A11	<i>Biology and production of crop plants</i>	10	C
SS1B1	<i>Biological processes - Soil</i>	10	C
AM1M11	<i>Fundamental microbiology</i>	10	C
AM1C12	<i>Animal physiology</i>	10	C
PS1HB1	<i>Principles of horticulture</i>	10	C
PS1AB2	<i>Physical ecology</i>	10	C
AM1M12	<i>Important microbes</i>	10	C
AM1C10	<i>The whole mammal</i>	10	C
LA1P??	<i>Institution wide language programme</i>	10	C

or elsewhere from the programmes of other Schools subject to the agreement of the Programme Advisor.

Post-Part 1 exams, students will attend The British Flora (PS2BG3) which includes a field course which will take place in the summer vacation but which will be recorded as a Part 2 module.

Part 2 (three terms)

Compulsory modules

PS2BG3	<i>The British flora</i>	10	I
BI2Z31	<i>Microevolution</i>	10	I
BI2B31	<i>Macroevolution</i>	10	I
PS2BB5	<i>Career Management skills and essay</i>	10	I
AS2A1	<i>Statistics for life sciences</i>	10	I

Optional modules:

PS2BB4	<i>Evolution of plant biodiversity</i>	10	II
PS2BE4	<i>Plant anatomy</i>	10	I
PS2BE5	<i>Ecological biochemistry</i>	10	I
PS2BC5	<i>Ecological aspects of environmental assessment</i>	10	I
PS2BA5	<i>Plants and man</i>	10	I
PS2AA5	<i>Plant genetics</i>	10	I
PS2AA4	<i>Crop physiology and breeding</i>	10	I
PS2AB4	<i>Weed biology and control</i>	10	I
PS2AB5	<i>Crop pests and integrated crop protection</i>	10	I
AM2Z32	<i>Vertebrate zoology</i>	10	I
AM2Z37	<i>Aquatic biology</i>	10	I
LA????	<i>Institution wide language programme</i>	20	C/I

or elsewhere from the programmes of other Schools subject to the agreement of the Programme Advisor.

Post-Part 2 examinations students will carry out preparatory work for the Botany Research Project (PS3BAX).

Part 3 (three terms)		<i>Credits</i>	<i>Level</i>
<i>Compulsory modules</i>			
PS3BA7	<i>Plant families</i>	10	H
PS3BAX	<i>Botany research project</i>	40	H
PS3BB8	<i>Botany seminars and tutorials</i>	20	H
PS3BF8	<i>Botany Field Course</i>	20	H
<i>Optional modules:</i>			
PS3AB7	<i>Crops and climate</i>	10	H
PS3BE7	<i>History and philosophy of natural science</i>	10	H
PS3BC7	<i>Conservation and biodiversity</i>	10	H
PS3BG7	<i>Systematics</i>	10	H
PS3BF8	<i>Physiological ecology</i>	10	H
PS3BC8	<i>Palynology</i>	10	H
PS3BE8	<i>Biodiversity informatics</i>	10	H
PS3BG8	<i>Biogeography</i>	10	H

Progression requirements

To proceed to Part 2 it is sufficient to have obtained at least 40% in all modules averaged together and have no module mark below 30%.

To proceed from Part 2 to Part 3 it is sufficient to have obtained at least 40% in all modules averaged together and have no module mark below 30%.

Summary of teaching and assessment

Teaching is organised in modules. Teaching in Part 1 consists of lectures and practical classes. Modules can be assessed by 100% coursework but more usually are assessed by a combination of coursework (30%) and formal examination (70%).

In Part 2 and 3, lectures and practical classes continue to be important modes of teaching but they are increasingly supplemented by seminars, group work and field studies, including two Field Courses. Modules can be 100% in-course assessed but are more usually assessed by a combination of coursework (30%) and formal examination (70%). 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 at least 40% in all Part 3 examinations averaged together and must gain at least 40% in the Project module.

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: 260 points from no more than 4 AL or AS subjects including C in at least two AL science subjects, plus Mathematics, Double Science and English at Grade B at GCSE level.

International Baccalaureat: 30 points

Scottish Highers BBBB (Biology B)

Irish Leaving Certificate: BBBBC (Biology B)

GNVQ is accepted and mature students are also encouraged to apply.

Admissions Tutor: Dr J.A. Hawkins

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 providing Departments offer a wide range of laboratory and plant growth facilities, together with a herbarium and specialised library collection. There is a high staff/student ratio in the School of Plant Sciences. The Course Adviser can advise on the choice of modules within the programme.

Career prospects

Recent Botany graduates have followed a diversity of careers in academia, in research institutions, in school teaching, in conservation and in biologically-related commercial sector activities.

Opportunities for study abroad or for placements

A number of Botany students have spent parts of their final year studying in European universities through the Socrates programme, and it is anticipated that such exchanges will continue.

Educational aims of the programme

The programme aims to provide a thorough, degree-level education in Botany, enabling graduates to capitalise on the range of career opportunities outlined above under Career Prospects.

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 range of plant diversity in terms of structure, function and environmental relationships.2. The evaluation of plant diversity.3. Plant classification and the British flora.4. The role of plants in the functioning of the global ecosystem.5. A selection of more specialised, optional topics.6. Statistics as applied to biological data.	<p>Teaching/learning methods and strategies</p> <p>These topics are presented in formal lectures combined with practical classes and fieldwork. Tutorial sessions are incorporated into some modules to support the formal teaching, and students are encouraged to discuss with their lecturers any points where they feel their understanding is weak.</p> <p><i>Assessment</i></p> <p>Knowledge is tested through a combination of coursework, including essays, reports on practical and fieldwork, and oral presentations with unseen formal examinations. The coursework also serves to provide feedback on student progress.</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 and organise tasks into a structured form.2. Assimilate knowledge and ideas based on wide reading and through the internet.3. Transfer appropriate knowledge and methods from one topic within the subject to another.4. Understand the evolving state of knowledge in a rapidly developing field.5. Construct and test hypothesis.6. Plan, conduct and write a report on an independent research project.	<p>Teaching/learning methods and strategies</p> <p>Much of the coursework is specifically designed to stimulate development of the skills outlined under 1-5. The research project conducted during Part 3 develops an ability for independent research (6) as well as reinforcing many of the other intellectual skills.</p> <p><i>Assessment</i></p> <p>Development of these skills is essential to permit the student to perform well in much of the coursework and in the examinations associated with this programme. Item 6 is specifically tested by the dissertation based on the Part 3 research project, and items 3 and 4 by a 3-hour integrating essay paper that forms part of the final examination.</p>
<p>C. Practical skills</p> <p>Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules.</p> <ol style="list-style-type: none">1. Interpreting plant morphology and anatomy.2. Plant identification.3. Vegetation analysis techniques.4. A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry.5. Analyse data using appropriate statistical methods and computer packages.	<p>Teaching/learning methods and strategies</p> <p>These skills are specifically taught during practical classes and field courses. In larger classes demonstrators are available to ensure that each student received individual instruction where appropriate. A number of practical skills are developed to an advanced level during the Part 3 research project.</p> <p><i>Assessment</i></p> <p>The development of practical skills is directly assessed through written reports on practical classes and field courses, in the dissertation based on the research project, and in a practical examination during finals.</p>

D. Transferable skills

1. Use of IT (word-processing, use of internet, statistical packages and databases).
2. Communication of scientific ideas in writing and orally.
3. Ability to work as part of a team.
4. Ability to use library resources.
5. Time management.
6. Career planning.

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 essays and further in the preparation of the research project dissertation, activities which also require the use of library resources. Oral skills are developed through seminars, some of which are organised on a small-team basis. Teamwork and time management are both essential elements of mini projects during field courses, some seminars are presented on a team basis, and time management is essential for the timely and effective completion of the programme. Students are encouraged to discuss their future careers with their personal tutors, other relevant staff in the contributing Departments, and in the Careers Advisory Service.

Assessment

Development of skills under 1, 2 and 4 is essential for a good performance in much of the coursework associated with the programme. The other skills are not directly assessed but effective use of skills 3 and 5 will contribute towards successful completion of the programme.

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 expect 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 module and programme handbooks.