

BSc Botany
For students entering Part 1 in 2005

UCAS code: C200

Awarding Institution:
Teaching Institution:
Relevant QAA subject benchmarking group(s):
Faculty of Life Sciences
Date of specification: 1 November 2006
Programme Director: Dr. J A Hawkins
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

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 in areas such as biodiversity, biotechnology and genetics.

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 that follows lists those modules that 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 Biological Sciences, Geography or Soil Science. However, students lacking A-level Chemistry or an equivalent qualification should take *Chemistry for biologists* (BI1S10) 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 (80 credits)

Module	Title	Credits	Level
PS1BA1	Plant world	10	C
PS1BA2	Plant physiology and development	10	C
PS1BC2	Introductory botany	10	C
BI1C10	Cell biology and biochemistry	10	C
BI1C11	Genetics and molecular biology	10	C
BI1M10	Biodiversity	10	C
BI1Z10	Ecology	10	C
BI1Z11	Community ecology	10	C

Required modules

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

Module	Title	Credits	Level
BI1S10	Chemistry for biologists	10	C

Optional modules

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

Module	Title	Credits	Level
PS1AB2	Physical ecology	10	C
PS1HB1	Principles of horticulture	10	C
PS1HC1	Arboriculture and practical horticulture	10	C
BI1S11	Concepts and skills I	10	C
AM1M11	Microbiology 1	10	C
AM1M12	Important microbes	10	C
AM1Z10	The whole mammal	10	C
SS1A1	Introduction to soil science	10	C
SS1A2	Soil, land and the environment	10	C
SS1B2	Soil processes and applications	10	C

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

After Part 1 exams, students will attend *Flora of the British Isles* (PS2BG3) and the *Botany Part 2 field course* (PS2BF3) which will take place in the summer vacation but which will be recorded as a Part 2 module.

Part 2 (three terms)

Compulsory modules (50 credits)

Module	Title	Credits	Level
PS2AC4	Career management and transferable skills	10	I
PS2BB4	Evolution of plant biodiversity	10	I
PS2BF3	Botany Part 2 field course	10	I
PS2BG3	Flora of the British Isles	10	I
AS2A1	Statistics for life sciences	10	I

Optional modules (70 credits, at least 50 credits from PS or BI modules)

Module	Title	Credits	Level
PS2AB4	Weed biology and control	10	I
PS2AB5	Crop pests and integrated crop protection	10	I
PS2BC5	Ecological aspects of environmental assessment	10	I
PS2BD4	Plants and the environment	10	I
PS2BE5	Ecological biochemistry	10	I
PS2HD4	Crop disease and its control	10	I
PS2NA4	Introduction to history and philosophy of science	10	I
BI2Z31	Microevolution	10	I
BI2B31	Macroevolution	10	I
AM2Z32	Vertebrate zoology	10	I
AM2Z34	Invertebrate zoology	10	I
AM2Z37	Aquatic biology	10	I

AM2Z41	Applied ecology	10	I
AP2A26	Forestry and woodlands	10	I
AP2A37	Practical nature conservation	10	I
LA????	Institution-wide language programme	20	C/I

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

After Part 2 examinations students will carry out preparatory work for the *Botany research project* (PS3BAX).

Part 3 (three terms)

Compulsory modules (70 credits)

Module	Title	Credits	Level
PS3BAX	Botany research project	40	H
PS3BF8	Mediterranean botany field course	20	H
PS3BH8	Botany research skills	10	H

Optional modules (50 credits, at least 30 credits from PS modules)

Module	Title	Credits	Level
PS3AB7	Crops and climate	10	H
PS3AF8	Plant tissue culture	10	H
PS3AG8	Weed ecology	10	H
PS3BA8	Biodiversity assessment and sustainable use of plant resources	10	H
PS3BB8	Creating revisions, monographs, floras and information systems	10	H
PS3BC7	Conservation and biodiversity	10	H
PS3BD7	Physiological ecology	10	H
PS3BE8	Biodiversity informatics	10	H
PS3BG7	Diversity and identification of plants	20	H
PS3HH8	Plant developmental genetics and physiology	10	H
AP3A49	Seed science and technology	10	H
AM3Z72	Insects and society	10	H
AM3Z74	Conservation biology	10	H
AM3Z75	Evolutionary genetics and phylogeny	10	H
AM3Z76	Behavioural ecology and life history theory	10	H
AM3Z77	Research topics in ecology	10	H
AM3Z80	Marine biology field course	20	H

Progression requirements

Part 1

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, a student shall normally be required to achieve a threshold performance at Part 1.

Part 2

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, 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. 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 (e.g. 30%) and formal examination (e.g. 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 an overall weighted average of 40% 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

A. Knowledge and understanding of:

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.

Teaching/learning methods and strategies

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.

Assessment

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.

Skills and other attributes

B. Intellectual skills – able to:

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.

Teaching/learning methods and strategies

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.

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 this programme. Item 6 is specifically tested by the dissertation based on the Part 3 research project.

C. Practical skills

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.

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.

Teaching/learning methods and strategies

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.

Assessment

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.

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 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.