

BSc Animal Science
For students entering Part 1 in 2012/3

UCAS code: D320

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject Benchmarking group(s):	Biosciences; Agriculture, horticulture, forestry, food and consumer sciences
Faculty:	Life Sciences Faculty
Programme length:	3 years
Date of specification:	12/May/2014
Programme Director:	Dr Darren Juniper
Programme Advisor:	Prof Phil Knight
Board of Studies:	Agriculture, Policy and Development
Accreditation:	Not applicable

Summary of programme aims

To enable the student to:

1. Understand how animals, especially higher vertebrates, function as integrated systems at each organisational level (i.e. biomolecular, cellular, organ system, whole animal, population);
2. Gain specialised knowledge in certain areas including the nutrition, growth, lactation, reproduction, health and welfare of selected farm and companion animals;
3. Understand how the above processes may be optimised to improve animal production and the wellbeing of farm and companion animals;
4. Recognise the interdependency of fundamental and applied biology within the context of man's use of animals for production, leisure and companionship purposes.

The programme aims to provide a thorough degree-level education in Animal Science, leading to a sound knowledge base in biology as a whole, underpinning more specialised knowledge of applied aspects relating to man's use of animals for production, companionship and leisure purposes. The programme content is intended to be relevant to the needs of employers and should facilitate the professional development of the student to lay the foundations for a successful career to the benefit of the economy and society.

Transferable skills

During the course of their studies at Reading, all students will be expected to enhance their academic and personal transferable skills. 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 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 choose such additional modules as they wish, in consultation with their programme adviser, to make 120 credits in each Part. The number of module credits for each module is shown after its title.

Part 1 (three terms)

Compulsory modules

Mod Code	Module Title	Credits	Level
PM1PB2A	Human Physiology	10	4
BI1ED2	Mammals: diversity, behaviour and conservation	10	4
BI1BA1	The Living Cell	10	4
BI1BC2	Genes and Chromosomes	10	4
BI1EC1	Exploiters and Exploited	10	4
AP1A18	Digestion and Nutrition	10	4

AP1SCP	Career Planning (APD students only)	0	4
AP1A15	Animal Science in Practice 1	10	4

Students without AS or A2 level Chemistry or an equivalent qualification must take:

CH1FC1	Fundamental Concepts in Chemistry 1	10	4
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Optional modules

Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Advisors and to timetable constraints. The following modules are likely to be available:

BI1P11X	Introductory Microbiology	10	4
AP1A02	Introduction to Agricultural and Food Systems	10	4
AP1A03	Introduction to Livestock Production Systems	10	4
AP1EF1	The UK Food Chain	10	4
AP1SB1	Introduction to Management	10	4
BI1BB2	Biochemistry and Metabolism	10	4
BI1EC12*	Exploiters and Exploited	20	4
BI1EF2	Ecology: Species and their Interactions	10	4
BI1EF3**	Practical Field Ecology	10	4
BI1BG3**	Practical Biochemistry	10	4
LA1XX1	Institution Wide Language Programme	20	4
SV1STU~	STudent Tutoring		
RD1RED1~	Reading Experience and Development (RED) Award		

*BI1EC12 Exploiters and Exploited (BI1EC1 10-credit version is compulsory, students may choose to undertake this two term 20-credit version which would account for 10-credits of optional choice – if you decide to take the 20 credit version you must complete a module change form to delete the 10 credit module and add the 20 credit module to your module list>).

**Students should not select both of these modules due to timetabling constraints.

~Student Tutoring – for further information and an application form visit:

<http://www.reading.ac.uk/studentrecruitment/StudentTutoring/sr-studenttutoringinschools.aspx>

~Reading Experience and Development (RED) Award – for further information visit

<http://www.reading.ac.uk/internal/readingexperienceanddevelopmentaward/rede-home.aspx>

Part 2 (three terms)

Compulsory modules

<i>Code</i>	<i>Module title</i>	<i>Credits</i>	<i>Level</i>
AP2A24	Applied Animal Nutrition	10	5
AP2A35	Animal Health and Disease	10	5
AP2A43	Small Animal Management	10	5
AP2A47	Animal Science in Practice 2 with CP (5 credits of total module mark)	10	5
AP2A50	Animal Growth, Lactation and Reproduction	10	5
AP2A61	Experimentation & Data Analysis	10	5
BI2BK5	Molecular Biology of Gene Expression	10	5
BI2BP6	Practical Skills: Recombinant DNA Exercise	10	5
BI2EN5	Animal Behaviour	10	5
AP2SCP	Career Planning	0	5

Optional modules (30 credits)

Students can, with the agreement of the Programme Director, and subject to timetabling constraints and fulfilment of prerequisite requirements, select suitable modules from across the University.

AP2A36	Animal Production	10	5
AP2A38	Organic Farming	10	5
BI2BB4*	Endocrinology	10	5
BI2BE4*	Pharmacology and Toxicology	10	5
B12BN4	Vertebrate Zoology: Structure, Form and Function	10	5
BI2BS5**	Vertebrate Zoology: Structure, Form and Function	10	5
BI2B15*	Immunology	10	5
AP2A56	Grassland Management and Ecology	10	5
AP2A52~	Practical Wildlife Reserve Management	10	5
AP2A59	Nature Conservation	10	5
AP2SB1	Business Management	10	5
AP2SB2	Financial Management	10	5
LA1XX1	Institution Wide Language Programme	20	4

*Recommended modules

**Can only be selected if BI2BN4 is taken in the Autumn Term

~ this module runs on alternate years at the end of part 1 only – please check availability with the module convenor before selecting

Students can opt to undertake a year long period of Industrial Training between Parts 2 and 3 but will need to discuss this with the Programme Director in the first instance. You can find more information at <http://www.reading.ac.uk/apd/businessdevelopment/apd-studentplacements.aspx>

Part 3 (three terms)

Compulsory modules

<i>Mod Code</i>	<i>Module Title</i>	<i>Credits</i>	<i>Level</i>
AP3A81	Dissertation	40	6

Optional modules (80 credits)

Students will choose further modules up to a total of 120 credits subject to the agreement of the Programme Advisers and to timetable constraints. The following are likely to be available:

BI3BE8	Cardiovascular Disease	10	6
BI3BH8	Mammalian Reproduction	10	6
BI3BD8	Cancer	10	6
BI3EJ8	Conservation Biology	10	6
BI3EK7	Behavioural Ecology and Life History Theory	10	6
AP3A67	Animal Welfare	10	6
AP3AE75	Wildlife and Farming	10	6
AP3A83	Practical Animal Nutrition	10	6
AP3A101	Canine and Feline Science	10	6
AP3A100	Equine Science	10	6
AP3A91*	Captive Animal Management	10	6
AP3A93	Dairy Production	10	6
AP3A95**	Practical Wildlife Reserve Management	10	6
AP3A96	Meat Production	10	6
AP3A98***	Equine Science and Management	20	6
LA2XX1	Institution Wide Language Programme	20	5

*Taught at end of part 2 only.

**Cannot be selected if already taken in Part 2 as AP2A52. Trip runs in the summer vacation at the end of part 2 only. Please check with module convenor for availability as runs in alternate years.

**Students selecting AP3A98 are not permitted to take AP3A100, as this module forms part of AP3A98. Students can, with the agreement of the Programme Director, and subject to timetabling constraints and fulfilment of prerequisite requirements, select suitable modules from across the University.

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 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 of this programme a student shall normally be required to achieve a threshold performance at Part 1 and achieve a credit weighted average mark of not less than 40% over the compulsory modules and a mark of not less than 30% in each compulsory module.

If you gain a threshold performance at Part 1 and do not proceed to achieve a higher award, you are eligible to receive the award of Certificate of Higher Education. The Part 1 Examination does not contribute to the classification of your degree.

The Part 2 Examination is used to assess a student's suitability to proceed to Part 3 of their programme. It also determines eligibility for the Diploma of Higher Education.

In addition, the marks achieved in the Part 2 Examination contribute to the classification of your degree.

To gain a threshold performance at Part 2, a student shall normally be required to achieve:

- (i) a weighted average of 40% over 120 credits taken at Part 2; and
- (ii) marks of at least 40% in individual modules amounting to not less than 80 credits; and
- (iii) marks of at least 30% in individual modules amounting to not less than 120 credits. In order to

progress from Part 2 to Part 3, student must achieve a threshold performance at Part 2.

If you gain a threshold performance at Part 2 and do not proceed to achieve a higher award, you are eligible to receive the award of Diploma of Higher Education.

The classification of the degree will normally be based on the marks for Part 2 and Part 3 modules, weighted in a ratio of 1:2 (Part 2 one-third, Part 3 two-thirds). Full details of classification conventions (that is, the rules for determining your final degree award) can be found in your Programme Handbook.

Assessment and classification

The University's honours classification scheme is:

<i>Mark</i>	<i>Interpretation</i>
70% - 100%	First class
60% - 69%	Upper Second class
50% - 59%	Lower Second class
40% - 49%	Third class
35% - 39%	Below Honours Standard
0% - 34%	Fail

For the University-wide framework for classification, which includes details of the classification method, please see: www.reading.ac.uk/internal/exams/Policies/extra-class.aspx

The weighting of the Parts/Years in the calculation of the degree classification is

Three-year programmes

Part 2 one-third

Part 3 two-thirds

Teaching is organised in modules that typically involve a combination of lectures and seminars. During Part 1 some lecture-based modules are supported by workshops or computer lab sessions or visits to businesses in the agri-food sector. The individual and group project modules include skills workshops and progress meetings with the project supervisor. Modules are assessed by a combination of course work and formal examination; some, like the project modules, are wholly course work assessed. Course work assignments include essays, problem solving exercises, short project reports, and presentations.

Admission requirements

Standard offer: UCAS Tariff: Points/grade 300 from no more than 4 subjects at A level. Subjects and level of qualification: Biology and one other science (Chemistry preferred); both at grade C at A2 level. The university supports Key Skills and will take account of points awarded for Key Skills although they are not part of the entry requirements. GCSE: Grade C required in Mathematics, English and Sciences. Irish Highers: BBCC (including Biology and Chemistry)

IB: diploma plus 6, 5, 5 from higher level subjects which must include Biology and one other subject (preferably Chemistry). Mature students and those with other qualifications are encouraged to apply.

Admissions Tutor: Dr Darren Juniper

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 Careers, Placement and Experience Centre (CPEC), In-session 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, academic issues (eg problems with module selection) and exam related queries. 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

Within the two providing Schools (Biological Sciences and Agriculture, Policy and Development) a Programme Adviser is available to offer advice on the choice of modules within the degree programme.

Career prospects

Reading graduates in Animal Science find employment in the scientific research and managerial services of commercial organisations concerned with animal nutrition, breeding and health. About 20 per cent of graduates go on to higher degree courses and in recent years some 6 per cent have gained places to study veterinary science. Graduates have also gone into accountancy, management training, financial services and information technology.

Opportunities for study abroad or for placements

As part of the degree programme students may have the opportunity to study abroad at an institution with which the University has a valid agreement.

Students who wish to undertake a year-long industrial placement may be eligible to transfer to the BSc Animal Science with Industrial Training. The placement year normally takes place between Parts 2 and 3 of this degree programme.

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 fundamental principles and concepts of animal biology with special reference to higher vertebrates.
2. The integrated biochemical and physiological processes that enable animals to function
3. The principles of animal agriculture
4. Applied aspects of animal biology concerned with

Teaching/learning methods and strategies

Acquisition of knowledge is achieved mainly through lectures but supported by laboratory practicals, computer-simulated practicals and directed student-centred learning. Student-centred learning is used where appropriate resource material is available and its role in student learning generally increases as the course progresses. As well as

mans use of animals for production, companionship and leisure purposes

compulsory core modules the study programme includes a wide range of optional modules to allow students to tailor the course to their own particular interests. This flexibility is greatest in Part 3.

Assessment

Most modules, apart from practical modules, essays and project work are assessed by a combination of formal examination and coursework. The nature of the coursework varies from module to module and is specified in each module description.

Skills and other attributes

B. Intellectual skills - *able to:*

1. Think logically
2. Integrate theory and practice.
3. Synthesise information/data from a variety of sources
4. Analyse and solve problems
5. Organise tasks into a structured form
6. Plan, conduct and write a report on an independent project.

C. Practical skills - *able to:*

1. Carry out laboratory and/or field practical/project work effectively and safely
2. Interpret experimental observations made in laboratory and/or field
3. Apply and critically evaluate the applications/limitations of selected research methods and bioanalytical techniques

D. Transferable skills - *able to:*

1. Use IT effectively (word-processing, spreadsheets, statistical analysis and presentation software, e-mail, www)
2. Communicate scientific ideas orally and in writing
3. Demonstrate adequate numerical and problem solving skills appropriate to a degree-level biologist
4. Work as part of a team
5. Work independently
6. Use library resources (including on-line)

Teaching/learning methods and strategies

Acquisition of intellectual skills is encouraged throughout the programme through formal lectures, practical project work, tutorial seminar work, coursework assignments, computer-assisted learning resources and both directed and non-directed reading.

Assessment

Intellectual skills are partly assessed through formal examinations but assessment of coursework and practical project work is an important component for assessment of the higher order skills. A variety of assessment methods are used including formal reports and project dissertations, essays, oral and poster presentations and project formative and summative assessments.

Teaching/learning methods and strategies

In Parts 1 and 2 attention is focused on the acquisition of basic skills and safe working practices through prescribed exercises. In Part 3 more advanced techniques and non-prescribed exercises are frequently undertaken during project work.

Assessment

A variety of assessment methods are used to assess practical skills. These include laboratory day-book inspections, oral/poster presentations, formal reports, formative and summative project assessments, project dissertations

Teaching/learning methods and strategies

The use of IT is embedded throughout the programme including specific introductory material in Part 1.

Assessment

In general these skills are not formally assessed as individual elements but they will enhance the performance of students in both coursework (reports, dissertations, poster presentations, essays) and unseen examinations.

7. Manage time effectively
8. Plan their career

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.