

PROGRAMME SPECIFICATION

1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	BSc Honours
4	Programme Title	Animal Science Animal Science with Placement
5	UCAS/Programme Code	C305 1305U 1725U
6	Programme Accreditation	N/A
7	QAA Subject Benchmark(s)	Agriculture, Horticulture, Forestry, Food, Nutrition and Consumer Sciences 2016 Biosciences 2015.
8	FHEQ Level	6
9	Date written/revised	August 2021

10 Programme Aims

- 1 To provide a detailed understanding of the subject of animal science and its relationship to the wider environment, primarily the sustainable use of domestic animals for food production and as companion animals, also in zoos and wildlife parks; this learning will be promoted by means of a range of teaching methods and experiences.
 2. To provide a broad, up-to-date, stimulating and demanding degree to prepare graduates for a career in animal science.
 3. To provide component modules based on modern experimental science and to encourage critical analysis, inductive reasoning, experimental procedure and lateral synthesis.
 4. To produce graduates able to independently plan and conduct independent experimental investigations. As a result of their training, graduates should also be able to report the results of an investigation accurately, evaluate these findings and draw appropriate conclusions and recommendations.
 5. In light of the aims listed above, to encourage students to make full use of the range of library resources and computer facilities available within the University.
 6. To develop and enhance personal qualities such as self-motivation, efficiency, responsibility, reliability, judgement, maturity, tolerance, co-operation, intellectual rigour and honesty.
 7. To provide a programme which meets the descriptors of the framework for higher education qualification (FHEQ) of a Bachelor's degree with honours, and which takes appropriate account of the subject benchmark statements in Agriculture, Horticulture, Forestry, Food, Nutrition and Consumer Sciences and Biosciences.
- For students on the Placement Year programme:
8. Provide students with the experience of seeking and securing a position with an employer.
 9. Facilitate independent self-management and proactive interaction in a non-university setting.

10. Provide a period of practical work experience that will benefit current academic study and longer term career plans.
11. Enable students to ethically apply their knowledge and skills in the work place, reflect upon their development and effectively evidence and articulate their learning in relevant future settings.

11 Learning Outcomes

The programme outcomes have references to the benchmark statements for Agriculture, Horticulture, Forestry, Food, Nutrition and Consumer Sciences and Biosciences. The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the areas described in detail below.

Knowledge and Understanding

On completing the programme, students should have gained and be able to demonstrate:

- A1 A detailed understanding of the fundamental sciences which underpin animal science.
- A2 An understanding of the technical language and terminology relevant to animal science.
- A3 A detailed understanding of the application of fundamental science to animal science.
- A4 An understanding of the scientific, societal and environmental influences on animal science.
- A5 An understanding of the relevance of animal science to human needs and expectations at local, national and international levels.
- A6 An understanding of the interrelationships between animal science and other disciplines (e.g. psychology, ecology, agriculture, environmental biology).
- A7 A desire to pursue new knowledge and understanding from current research.

For students on the Placement Year programme:

- A8 Apply personal and professional development strategies to prioritise, plan, and manage their own skills development and learning.
- A9 Research, select and apply relevant knowledge aimed at enhancing their own skills and effectiveness in specific duties at their placement.
- A10 Demonstrate an understanding of a work environment, how it functions and their contribution to it.
- A11 Relate their work based learning to other areas of personal development, including academic performance.

In the first year (Stage 1) students will gain a detailed knowledge and understanding of fundamental science, such as in physiology, genetics and microbiology, which provides them with a sound platform upon which to progress to more applied and in-depth study in Stage 2 and 3 respectively.

By the end of the programme, the process and results of accumulating and consolidating knowledge and understanding of the areas outlined above will provide a sound basis for particular students to progress to postgraduate studies in appropriate fields of animal science.

Teaching and Learning Methods

Lectures are the main way of imparting knowledge and understanding (A1-A7) but seminars and small group tutorials are also used: seminars and tutorials are led by staff and/or students and occasionally by visiting speakers. Practical classes feature throughout all three Stages, and include laboratory classes and field visits to the two University farms, as well as other farms, companion animal holdings, animal rescue centres and research stations in the region. Workshops introducing and applying computer software packages or specific case studies also feature in the programme.

Students are encouraged to contribute to their own learning experience by independent reading. They are provided with references to books, scientific papers and other learning

materials to enhance their understanding of specific subject areas. Group work exercises encourage a collective approach and responsibility for gathering knowledge and sharing understanding. The Induction Week programme includes activities that introduce and subsequently develop various learning methods and strategies appropriate to each stage of the programme.

Assessment Strategy

Assessment of the programme is primarily by unseen, written examinations supported by a variety of different forms of coursework that include essays, projects, case studies, presentations and other exercises. Most modules include coursework, thus ensuring an element of formative as well as summative assessment. Seminar, tutorial and poster presentation exercises assess knowledge and understanding that is demonstrated verbally. At Stage 3, after a few introductory seminars and under the guidance of a specific member of staff acting as a Supervisor, the Animal Science Research Project allows for assessment of a student's ability to independently acquire knowledge and understanding (A4-A6) specifically from a piece of new research that the student undertakes over an extended period of approximately 20 weeks (A7).

Intellectual Skills

On completing the programme students should be able to:

- B1** Critically analyse arguments and evidence derived from a range of sources.
- B2** Solve problems based on information either gathered or presented, through data analysis and interpretation.
- B3** Gather, extract and evaluate relevant information.
- B4** Evaluate the contribution of individuals to the learning experience by means of peer assessment.

Teaching and Learning Methods

Seminars provide the main opportunity for students to evaluate evidence and formulate objective and coherent arguments (B1-B4). Problem solving skills (B2) are developed in tandem with the range of activities described above that are designed to develop students' subject-specific/professional skills. Students are directed to a range of information sources that enhance their analytical and interpretative faculties.

Students learn through problem-solving, data handling and discussion. Students are encouraged to justify their opinions in discussion, in case studies and in their Research Project, where they practice the formulation and defence of reasoned arguments and analysis.

Assessment Strategy

The same range of methods as described previously for Learning Outcomes of Knowledge and Understanding in A also provide an opportunity to assess cognitive skills in the form of seminars (B1, B3 and B4), case studies (B2 and B4) and essay writing (B1 and B3). Completion of the Animal Science Research Project is a major vehicle for the assessment of all the cognitive skills acquired and developed by individual students (B1-B4). The Animal Science Conference – Current Issues and Debates is another opportunity for students to demonstrate the development of their cognitive skills, this time working as a team to host a scientific conference.

Practical Skills

On completing the programme students should have the necessary skills to be able to:

- C1** Develop hypotheses and design, execute and analyse data for a range of study types including laboratory and field-based studies.
- C2** Use statistical procedures to facilitate study design and data analysis.

- C3 Understand a range of quantitative and qualitative data analysis techniques used in the area of animal science.
- C4 Critically evaluate data from a variety of sources.
- C5 Present data in a written format according to accepted scientific conventions.

Teaching and Learning Methods

Professional skills relevant to animal science applications are demonstrated in specific lectures, seminars, laboratory classes, computing sessions, workshops and field visits (C1-C5). Module leaders and demonstrators facilitate development of these skills, where appropriate encouraging students to acquire various skills (C1-C5) through 'hands-on' learning in those modules which focus on an applied approach.

Assessment Strategy

The methods outlined for Learning Outcomes of Knowledge and Understanding in A above also test the development of subject-specific/professional skills (C1-C5). The use of case-studies and report writing and presentation as major methods of assessment not only enhances knowledge and understanding but also improves subject-specific and professional skills (C1-C5). As well as being practised, skills may be assessed as an integral part of the assessment programme. For example, students may design experiments and collect and analyse data (e.g. Animal Science Research Project,) (C1). Many practical skills are also developed and assessed in Academic and Professional Skills which runs in Stage 1 and then is built upon in Stage 2 in Academic and Professional Skills 2, and in a number of modules in Stage 3 of the programme (e.g. preparation of a set of PowerPoint presentation slides in Livestock/Companion Animal Reproduction).

Transferable/Key Skills

On completing the programme students should be able to:

- D1** Work effectively as part of a team.
- D2** Exhibit computer literacy in gathering information from a wide range of sources, together with processing and interpreting numerical information.
- D3** Communicate effectively using both verbal presentation to large and small groups, and written communication in essays, reports and poster presentations.
- D4** Demonstrate the ability to work independently, manage time effectively, use initiative and be adaptable.

For students on the Placement Year programme:

- D5** Reflect on and manage own learning and development within the workplace.
- D6** Use existing and new knowledge to enhance personal performance in a workplace environment, evaluate the impact and communicate this process.
- D7** Use graduate skills in a professional manner in a workplace environment, evaluate the impact and communicate the personal development that has taken place.

Teaching and Learning Methods

A large number of modules involve an element of teamwork (D1) to undertake a project or deliver a presentation. Teamwork is particularly important in the Animal Science Conference. In this module the Stage 3 cohort of Animal Science students, along with any students from D422 BSc Agriculture with Honours in Animal Production Science who have selected this module as one of their options, work as a team to organise and host a scientific conference on a current topic in animal science. Thus, alongside acquisition of knowledge, intellectual and practical skills, organisation of the conference provides an opportunity for students to practice and develop their skills in team working, managing their time effectively, using their initiative and being adaptable.

The use of data analysis (D2) features in all three Stages of the programme and is complemented with a range of computer simulation exercises (D2). Verbal communication and presentational skills (D3) are practised, particularly in seminars and tutorials, with increasing frequency from Stage 1 to Stage 3, and all modules involve independent, student-centred work requiring completion of a task by a specific deadline (D4).

Students learn through the production of essays, reports and case studies, and in the careful consideration of timely and detailed feedback which is subsequently provided. Emphasis is placed on the cultivation of good practice in self-motivation and time management throughout the programme. This is highlighted during the Induction Week sessions at the start of each stage, and then reinforced by the Degree Programme Director at various points throughout

the programme, such as in tutorial meetings at the beginning of each Semester and midway through Semester 2 when students are invited to choose their optional modules for Stage 2 and 3.

Assessment Strategy

The strategy and methods used to assess learning outcomes A, B and C provide an integrated approach to the development of key skills D1-D4. The Animal Science Research Project and the Animal Science Conference are also major vehicles for the assessment of key skills on an individual and a group basis respectively (D2-D4).

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The programme is studied full time over three years. The academic year consists of two Semesters, each comprising 12 weeks of teaching followed by an assessment period.

At each Stage, modules to a total credit value of 120 are studied. The distribution of these 120 credits between the two Semesters may be 60:60, 50:70 or 70:50, depending on the particular combination of modules chosen by an individual student.

A 10-credit module consists of 100 hours of student effort composed of attendance at the component sessions which, depending on the module, will include lectures, seminars, small group tutorials, practicals or field trips, along with private study, completion of coursework and revision. Modules are usually 10 or 20 credits with all 10-credit modules being completed in the same Semester, while most 20 credit modules continue over both Semesters. The exceptions are the Animal Science Conference, worth 20 credits in Semester 1, and the Animal Science Research Project which accounts for 30 credits and is nominally allocated 10:20 over Semester 1:2, although in reality students are able to undertake this module as either 15:15 or 20:10 credits according to how they wish to allocate their time. Modules are examined at the end of the Semester in which they are completed.

The programme provides students with a detailed understanding of the main fundamental and applied aspects of animal science and, through a choice of optional modules, allows students to focus in more detail on a particular topic, such as the quality of food of animal origin or physiology, or a particular group of animal species such as farm, companion or zoo animals.

B Programme Structure

Stage 1 consists of 100 compulsory credits in the key underpinning subjects of biochemistry, physiology, genetics, microbiology, animal health, and data analysis and presentation. These topics continue in subsequent Stages where they are explored in more detail. In the 20-credit module Investigating Agri-food Systems from Farm to Folk, Stage 1 students from several disciplines in School of Natural and Environmental Science are brought together to study the complex relationships between different parts of various agri-food systems, thus giving them a broad understanding of interactions between plants, animals and land in the production of food. Students supplement the 100 credits of compulsory modules by selecting optional modules to a value of 20 credits, which are either business-based or more fundamental biology. Modules include a combination of learning methods, which includes lectures and, where appropriate, practicals, laboratory classes, computer workshops and fieldwork to visit farms/animal centres in the region.

Stage 2 has 80 credits of compulsory modules focusing on more applied aspects of animal science. Topics such as genetic improvement, reproduction, nutrition, and parasitology are covered with reference to a range of animal species. Quantitative analysis and communication skills are developed in a further 20-credit module aligned to academic and professional skills, and then utilised in subject-specific modules. To supplement these 100 compulsory credits, students select further optional modules to a total value of 20 credits. In these optional modules the underpinning science from Stage 1 is integrated with information on animal husbandry and management to describe the main roles of animals in society as

food production or companion animals. Students can select from a range of animal-based or allied modules, such as Animal Behaviour or Animal Physiology, continue with business-based modules or enrol on modules offered by the Careers Service to promote career development through learning whilst undertaking a part-time work or volunteering, or to develop skills in enterprise and entrepreneurship.

Stage 3 has 100 credits of compulsory modules. As described previously, the Animal Science Conference deals with current topical issues in animal science and develops students' transferable skills. Further compulsory modules cover the key areas of animal welfare and environment, nutrition, molecular biology and development, reproduction and behaviour. In addition, students undertake the Animal Science Research Project on a topic of their choice, such as nutrition, health or behaviour, with supervision and guidance provided by a member of academic staff. Through undertaking an occupational awareness module, the students are given allocated time to focus on exploring opportunities for their imminent career and via presentations cascading this information to peers in their Stage and below to enhance occupational awareness throughout the degree. Thus although Stage 3 has 100 credits of compulsory modules, within this there is some flexibility both in the animal species chosen for the reproduction and behaviour modules, and in the academic discipline in which the Research Project is carried out, along with aligning the occupational awareness to their aspirations for career path. Choice of the remaining optional modules to a value of 20 credits allows students the opportunity to choose further animal-based modules, or career development modules offered by the Careers Service which may involve animals directly, or which may focus on a different discipline though part-time work or volunteering.

Most of the modules at Stage 3 have an increased emphasis on self-study and small group work and have a requirement for small projects, case studies and presentations to further promote the development of transferrable skills.

Students on the Placement Year programme will be on placement year between Stages 2 and 3 of their programme.

All placements will be undertaken in line with the University's placement policy <http://www.ncl.ac.uk/ltds/assets/documents/qsh-workplacement-pol.pdf>

Key features of the programme (including what makes the programme distinctive)

The programme provides a detailed understanding of the fundamental and applied aspects of animal science, across the full breadth of processes governing animal life including genetics, reproduction, growth, biochemistry, nutrition and behaviour. A key distinctive feature of the programme is that at Stage 2 and 3 students can choose optional modules to gain further knowledge and skills relating to particular animal species including livestock, companion or zoo animals. The Stage 3 Animal Science Conference is a unique opportunity for students to take ownership for organising and participating in an academic conference which demonstrates their acquisition of subject-specific knowledge and proficiency in a range of cognitive, practical and transferrable skills including teamwork, taking initiative and problem solving.

For students taking the Programme with placement there is an opportunity to undertake a 9-12 month placement between Stages 2 and 3 to gain practical industry experience and to develop their work-based skills.

Programme regulations (link to on-line version)

[Regulations 2021-22 C305 1305U 1725U](#)

Generic information regarding University provision is available at the following link.

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

14 Methods for evaluating and improving the quality and standards of teaching and learning

Generic information regarding University provision is available at the following link.

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

Accreditation reports

Additional mechanisms

15 Regulation of assessment

Generic information regarding University provision is available at the following link.

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

In addition, information relating to the programme is provided in:

The University Prospectus: <http://www.ncl.ac.uk/undergraduate/degrees/#subject>
Degree Programme and University Regulations: <http://www.ncl.ac.uk/regulations/docs/>

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.