UNIVERSITY OF
NEWCASTLE UPON TYNE

FACULTY OF
SCIENCE, AGRICULTURE & ENGINEERING

DEGREE PROGRAMME SPECIFICATION

1.	**Awarding Institution**	University of Newcastle upon Tyne
2.	**Teaching Institution**	University of Newcastle upon Tyne
3.	**Final Award**	BSc Honours
4.	**Programme Title**	Animal Science with Honours in Domesticated Animal Science D320 and Wildlife Biology C306
5.	**Programme Accredited by:**	N/A
6.	**UCAS Code**	C305 Animal Science, C306 Wildlife Biology, D320 Domesticated Animal Science
7.	**QAA Benchmarking Group(s)**	Agriculture, forestry, agricultural sciences, food sciences and consumer sciences
8.	**Date of production/revision**	September 2004

9. Programme Aims:

The programme aims:

- To provide, by means of a range of teaching methods and experiences, an understanding of the overall subject of animal science and its relationship to agricultural systems and the wider environment. The Honours Options are designed to provide a more specialised treatment of particular areas of animal science including domesticated animal science (farm and companion animals), physiology and health; the biology and conservation of wild species and their habitats.

- To provide a broad, up-to-date, stimulating and testing degree programme in both of the Honours Options, to prepare graduates for a career in animal science in the context of agriculture and the wider environment

- To provide courses based on modern experimental science and to encourage critical analysis, inductive reasoning, experimental procedure and lateral synthesis.

- To produce graduates able to plan and conduct independent experimental investigations. They should also, as a result of their training, be able to report the results of an investigation accurately, draw appropriate conclusions, and make recommendations.

- To encourage in this connection, and in relation to other aspects of the course, students to use all the library and computer facilities available in the University.

- To develop or enhance qualities such as self-motivation, efficiency, responsibility, reliability, judgement, maturity, tolerance, co-operation, intellectual rigour and honesty.

- To provide a programme which meets the FHEQ at Honours level and which takes appropriate account of the subject benchmark statements in Agriculture, forestry, agricultural sciences, food sciences and consumer sciences

10. Intended Learning Outcomes; Teaching and Learning Strategies and Methods; Assessment Strategies and Methods

The programme provides opportunities for students to develop, integrate, practice and demonstrate knowledge and understanding of the many diverse disciplines constituting animal science, together with a range of subject specific and wider skills.

These include:

A Knowledge and understanding

A successful student will have gained and be able to demonstrate:

A1 A good understanding of the basic sciences which underpin animal science.

A2 An understanding of the technical language, terminology and use of Latin relevant to animal science.

A3 A good understanding of the application of science to the understanding of either wildlife biology or domesticated animal science (according to Honours option)

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. Agriculture, environmental biology).

A7 A desire to pursue new knowledge and understanding from current research.

Teaching Strategy
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 predominantly in Stage 1 these include laboratory classes and field visits. Visits to the University and other farms, out stations, countryside reserves and research stations are more frequent at Stages 2 and 3. Workshops introducing and applying computer software packages or specific case studies also feature, and some of these are led by specialists from the industry.

Learning Strategy
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 the sharing of understanding. The Induction Week programme includes exercises that introduce and practice various learning methods and strategies appropriate to each stage of the programme.

Assessment strategy
Primarily assessed by unseen, written examinations supported by a variety of different forms of coursework that includes essays, projects, case studies 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. The general paper and dissertation module at Stage 3, (which are not directly supported by lectures or seminars) assess students' abilities to independently acquire knowledge and understanding (A4-A6).

B Subject –specific/professional skills

A successful student will have the skills for:

B1 Development of hypotheses and design, execution and analysis of data for a range of study types including laboratory and field-based studies.

B2 Use of statistical procedures to facilitate the design of studies and the analysis of collected data.

B3 A range of quantitative and qualitative techniques used in the area of animal science.

B4 Critical evaluation of data from a variety of sources

B5 Presentation of data in written format according to accepted scientific conventions.

Teaching Strategy
Professional skills relevant to agricultural applications are demonstrated in specific lectures, seminars, laboratory classes, computing sessions, workshops and field visits (B1-B5). Module leaders and demonstrators facilitate development of these skills.

Learning Strategy
Students acquire skills (B1-B5) through a 'hands-on' approach in the most applied modules.

Assessment strategy
The methods outlined in A also test the development of subject-specific/professional skills (B1-B5). 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 (B1-B5). 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. AGR398) (B1). Many are also assessed in the Communication Skills module (AGR217) and throughout Stage 3 of the programme.

C Cognitive skills

A successful student will be able to:

C1 Critically analyse arguments and evidence derived from a range of sources

C2 Solve problems based on information either gathered or presented. Data analysis and interpretation

C3 Gather, extract and evaluate relevant information

C4 Evaluate the contribution of individuals to the learning experience by peer assessment.

Teaching Strategy
Seminars provide the main opportunity for students to evaluate evidence and formulate objective and coherent arguments (C1-C4). Problem solving skills (C2) are developed in tandem with the range of activities described above that are designed to develop their subject-specific/professional skills. Students are directed to a range of information sources that enhance their analytical and interpretative faculties.

Learning Strategy
Students learn through problem-solving, handling data and discussion. Students are encouraged to justify their opinions in discussion, in case studies and in their dissertation where they practice production of reasoned arguments and analysis.

Assessment strategy
The range of methods described in both A and B also provides an opportunity to assess cognitive skills (C1-C4): in the form of seminars (C1, C3 and C4), case studies (C2 and C4) and essay writing (C1,C3). The dissertation module AGR398 or BIO390 is a major vehicle for the assessment of all the cognitive skills (C1-C4). The extent to which these skills have been achieved is also assessed by internal *viva voce* examinations and by the external examiner.

D Key (transferable) skills

A successful student will be able to:

D1 Work effectively as part of a team

D2 Exhibit computer literacy in the gathering of information from a wide range of sources together with the processing and interpretation of numerical information.

D3 Communicate effectively both in the form of oral presentations to large and small groups, and via the written word in essays, reports and in poster presentations

D4 Show the ability to work independently, to manage time effectively, to use initiative and be adaptable

Teaching Strategy
The use of PCs and data analysis (D2) feature throughout all three Stages of the programme and are complemented with a range of computer simulation exercises (D2). As well as contributing directly to key skills, they also contribute to the other learning outcomes A, B and C.
Oral communication and presentational skills (D3) are practised, particularly in seminars and tutorials, with increasing frequency from Stage 1 to Stage 3. Several modules involve teamwork (D1). All modules involve independent, student-centred work requiring completion by specific deadlines (D4).

Learning Strategy
Students learn through the production of essays, reports, case studies etc. Emphasis is placed on time management throughout the programme and in particular during initial induction sessions.

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 from a broad base. The dissertation module AGR398 is also a major vehicle for the assessment of key skills (D2-D4).

11 Programme Features, Structure and Curriculum

A Programme Features

The programme is studied over three year's full time. The academic year consists of two semesters, with 12 weeks of teaching followed by assessment periods.

At each Stage, modules to a total credit value of 120 are studied. The distribution of these 120 credits between the semesters may be 60:60, 50:70 or 70:50.

A 10-credit module consists of 100 hours of student effort composed of attendance at lectures, seminars and small group tutorials, practical sessions, private study and revision and the completion of coursework. Modules are usually 10 or 20 credits with most 10-credit modules being completed in a semester, while most 20 credit modules continue over both semesters. The research project accounts for 30 credits (either AGR398 - 30 or BIO390 - 20 plus AES399 - 10). Modules are examined at the end of the semester in which they are completed.

The programme provides a thorough coverage of the main scientific and applied aspects of animal science, providing students the opportunity to specialise in either wildlife biology or domesticated animal science.

B Programme Structure

Stage 1 gives the foundation to the two honours options. Although most students enter under the generic Animal Science (C305) this is not an exit route and for Stages 2 and 3 students are either Animal Science with honours in Wildlife Biology (C306) or with honours in Domesticated Animal Science (D320).

Stage 1 consists of 60 compulsory credits in the key underpinning subjects of biochemistry, genetics, microbiology, behaviour and computing/data analysis. Students may then select their optional modules either with a specific honours option in mind or to delay their decision. Modules include a combination of lectures, practicals, computer workshops and outside visits to farms, out stations and the surrounding countryside (depending on choice of optional modules).

C306 Wildlife Biology

The core of 90 compulsory credits at **Stage 2** includes coverage of the biology and management of wild vertebrate and invertebrate animals. The emphasis is on terrestrial habitats with particular reference to the interface between agricultural activities and the natural environment. There is particular emphasis on practical skills both in the field (AES218) and the laboratory. Quantitative (BNS233) and communication skills (BIO204) are developed alongside and within the subject specific modules.

Stage 3 includes major research project (BIO390) on a topic of the individual student's choice which will be supervised by a member of academic staff active in that area. Modules in communication skills (AES399) and topical issues (BIO301) continue. In many of the modules there is increased emphasis on self-study and small group work. As at Stage 2, there is the opportunity for students to follow selected optional modules of interest in addition to the core (90 credits) which is compulsory.

D320 Domesticated Animal Science

This honours option involves the physiology , biochemistry, nutrition, health, breeding and reproduction of farm livestock and companion animals. It also examines the environmental and welfare issues associated with animal production.

Stage 2 has a core of 90 compulsory modules focusing on the key areas of domestic animal science with particular emphasis on farm livestock. The underpinning science for Stage 1 is integrated with information on management and socio-economic issues to describe our main animal production systems. Issues such as animal breeding, feeds and feeding, behaviour, animal health, disease and parasitology are

covered with reference to the range of domestic animals. Quantitative (AGR223) and communication skills (AGR217) are developed alongside and within the subject specific modules.

Stage 3 involves a major research project (AGR398) of 30 credits on a topic of the individual student's choice and supervised by a member of academic staff active in that area. Further compulsory modules cover the key areas of nutrition, breeding and growth, and biochemistry of both farm and companion animals. The optional modules (40 credits) allow students the opportunity to specialise more on areas of interest e.g. Horses and companion animals (AGR327), Tropical Animal Production (AGR318). Many of the modules have an increased emphasis on self study and small group work and have a requirement for small projects, case studies, computer formulation of feed rations etc.

C Programme Curriculum

Stage 1 - All Students

(a) All candidates shall take the following **compulsory** modules:

Code	*Credits*	*Descriptive title*
AGR105	(10)	Introduction to Genetics
AGR110	(10)	Micro-computing and Data Analysis 1
AGR112	(20)	Introductory Biochemistry for Biologists
BIO108	(10)	Introduction to Microbiology
MST105	(10)	Animal Behaviour

(b) All candidates shall take **optional** modules with a total value of 60 credits selected from the list below

Code	*Credits*	*Descriptive title*
AGR102	(10)	Applied Farm Animal Physiology
AGR104	(10)	Farm Animal Physiology
AGR107	(10)	British Agriculture
AGR120	(10)	Crop Pests
BIO101	(20)	Biodiversity and Ecology
BIO103	(20)	Form and Function – Cells and Animals
BIO104	(10)	Evolution for Biologists
MST100	(20)	Biodiversity of Marine Organisms

Honours in Domesticated Animal Science

Stage 2

(a) All Stage 2 modules are Honours modules.
(b) All candidates shall take the following **compulsory** modules:

Code	*Credits*	*Descriptive title*
AES224	(10)	Methods in Animal Behaviour
AGR209	(10)	Ruminant Livestock
AGR216	(10)	Introduction to Animal Breeding
AGR217	(10)	Communication Skills for Animal Scientists
AGR219	(10)	Animal Health, Pigs and Poultry
AGR220	(10)	Animal Feeds and Feeding
AGR223	(10)	Micro-Computing and Data Analysis 2
AGR224	(10)	Animal Parasitology
BIO201	(10)	Molecular Genetics and Mammalian Biochemistry

(b) All candidates shall take **optional** modules with a total value of 30 credits, normally selected from the list below:

Code	*Credits*	*Descriptive title*
AEF221	(10)	Agricultural Marketing
AGR204	(10)	Grassland
BNS207	(10)	Nutrition Principles
BNS208	(10)	Experimental Human Nutrition
BNS209	(10)	Introduction to Human Nutrition
NEU201	(10)	Comparative Animal Physiology Theory

Stage 3

(a) All candidates shall take the following **compulsory** modules:

Code	*Credits*	*Descriptive title*
AGR302	(20)	Animal Breeding and Growth
AGR311	(20)	Farm Animal Nutrition
AGR398	(30)	Animal Science Research Project
BNS321	(10)	Farm Animal Biochemistry

(b) All candidates shall take **optional** modules with a total value of 40 credits, normally selected from the list below:

Code	*Credits*	*Descriptive title*
AES302	(10)	Animal Ecophysiology
AGR306	(10)	Animal Welfare and Environment
AGR315	(20)	Forage Utilisation
AGR318	(10)	Tropical Animal Production
AGR327	(10)	Horses and Companion Animals
AGR328	(10)	Domestic Animal Behaviour
AGR340	(10)	Rural Enterprise Diversification
AGR344	(10)	Parasitology Conference

Honours in Wildlife Biology

(a) All Stage 2 modules are Honours modules.
(b) All candidates shall take the following **compulsory** modules:

Code	*Credits*	*Descriptive title*
AES217	(10)	Entomology
AES218	(10)	Entomology Field Course
AES224	(10)	Methods in Animal Behaviour
AES256	(10)	Vertebrate Evolution and Diversity
AES264	(10)	Ecology of Populations and Communities
BIO203	(10)	Biodiversity and Conservation
BIO204	(10)	Biology Communication Skills
BNS232	(10)	Introduction to Molecular Biology
BNS233	(10)	Quantitative Techniques

(c) All candidates shall take optional modules with a total value of no more than 20 credits, normally selected from the following:

Code	*Credits*	*Descriptive title*
AES243	(10)	UK Countryside Change
MSM222	(10)	Fisheries Biology and Aquaculture
NEU201	(10)	Comparative Animal Physiology Theory

(d) All candidates shall take optional modules with a total value of no more than 30 credits, normally selected from the following:

Code	*Credits*	*Descriptive title*
AES261	(10)	Population Genetics and Natural Selection
AGR224	(10)	Animal Parasitology
MSM235	(10)	Marine Ecology

Stage 3

(a) All Stage 3 modules are Honours modules.
(b) All candidates shall take the following compulsory modules:

Code	*Credits*	*Descriptive title*
AES399	(10)	Communication Skills
AES303	(10)	Animal Population Dynamics
AES309	(10)	Ecological Modelling
AES339	(10)	Ecosystem Management
BIO301	(10)	Conservation Biology Issues
BIO390	(20)	Wildlife Biology Research Project
MSM347	(10)	Behavioural Ecology
Either		
AES332	(10)	Techniques in Terrestrial Ecology
Or		
AGR333	(10)	Crop Pests Field Course

(c) Candidates who have undertaken a work placement year shall take the following compulsory module:

AES315	(10)	Work Placement Report

(d) Candidates shall take optional modules with a total value of no more than 20 credits, normally selected from the list below:

Code	*Credits*	*Descriptive title*
AES338	(10)	Biological Control
AGR306	(10)	Animal Welfare and Environment
AGR327	(10)	Horses and Companion Animals
CMS301	(10)	Ornithology
MSM332	(10)	Reproduction and Life History

(e) Candidates shall take optional modules with a total value of no more than 30 credits, normally selected from the list below:

Code	*Credits*	*Descriptive title*
AES302	(10)	Animal Ecophysiology
AES317	(10)	Plant-Animal Interactions
AGR328	(10)	Domestic Animal Behaviour
AGR344	(10)	Parasitology Conference

Development of specific Intended Learning Outcomes occurs through the following modules (compulsory modules in bold text, optional modules in normal, italic text)

A1	A good understanding of the basic sciences which underpin animal science.	**AGR105, AGR110, AGR112, BIO108, MST105, AGR223, BIO201, BNS232, BNS233, AES332, AGR333**, *AGR104, BIO101, BIO103, BIO104, MST100, CMS301*
A2	An understanding of the technical language, terminology and use of Latin relevant to animal science.	**AGR105, AGR112, BIO108, MST105, AGR216, AGR217, AR220, AGR224, BIO201, AES217, AES218, AES256, AES264, BIO203, BIO204, BNS232, AES309, AES339, BIO301, BIO390, MSM347, AES332, AGR333, AES315,** *AGR102, AGR104, AGR120, BIO101, BIO103, BIO104, MST100, NEU201, MSM222, NEU201, AES261, AGR224, MSM235, AES338, AGR306, AGR327, CMS301, MSM332, AES302, AES317, AGR328, AGR344*
A3	A good understanding of the application of science to the understanding of either wildlife biology or domesticated animal science (according to Honours option)	**AGR110, AES224, AG209, AGR216, AGR217, AGR219, AGR220, AGR223, AGR224, AES217, AES218, AES224, AES256, AES264, BIO203, BIO204, BNS233, AGR302, AGR311, AGR398, BNS321, AES399, AES303, AES309, AES339, BIO301, BIO390, MSM347, AES332, AGR333, AES315,** *AGR102, AGR104, AGR107, AGR120, BIO101, MST100, AGR204, BNS207, BNS208, BNS209, NEU201, AES243, MSM222, AES261, AGR224, MSM235, AES302, AGR306, AGR315, AGR318, AGR327, AGR328, AGR340, AGR344, AES338, AGR306, AGR327, CMS301, MSM332, AES302, AES317, AGR328*
A4	An understanding of the scientific, societal and environmental influences on animal science.	**AGR209, AGR219, AES218, AES264, BIO203, BIO204, AGR302, AGR311, AGR398, AES399, AES303, AGR309, AES339, BIO301, BIO390, MSM347, AES332, AGR333, AGR315,** *AGR107,*

		AEF221, AGR204, BNS207, BNS208, BNS209, AES243, MSM222, AES261, MSM235, AES302, AGR306, AGR315, AES317, AGR318, AGR327, AGR328, AGR340, AGR344, AES338, CMS301
A5	An understanding of the relevance of animal science to human needs and expectations at local, national and international levels.	**AGR209, AGR219**, **BIO203, AES339, BIO301, AES315,** *AEF221, BNS208, BNS209, AES243, MSM222, AGR306, AGR318, AGR327, AGR328, AGR340, AGR306*
A6	An understanding of the interrelationships between animal science and other disciplines (e.g. Agriculture, environmental biology).	**AGR209, AGR217, AGR219, BIO203, BIO204, AES399, AES309, BIO301, BIO390, AES315,** *AGR107, AEF221, AGR204, AES243, BNS208, BNS209, AGR318, AGR340, AGR340, MSM222, AES338*
A7	A desire to pursue new knowledge and understanding from current research.	**AGR217, AGR398, BIO204, AGR399, BIO301, BIO390,** *AGR344, AGR344*
B1	Development of hypotheses and design, execution and analysis of data for a range of study types including laboratory and field-based studies.	**AGR105, AGR110, AGR112, MST105, AES223, AGR220, AGR223, AGR224, AGR398, AES218, AES224, BNS233, AES309, BIO390, AES332, AGR333,** *AGR102, AGR104, AGR120, BIO103, BNS207, BNS208*
B2	Use of statistical procedures to facilitate the design of studies and the analysis of collected data.	**AGR110, AES224, AGR217, AGR220, AGR223, AGR398, AES218, AES224, BIO204, BNS233, AES399, AES309, BIO390, AES332, AGR333,** *BNS208*
B3	A range of quantitative and qualitative techniques used in the area of animal science.	**AGR110, AGR112, BIO108, AES224, AGR216, AGR217, AGR220, AGR223, AGR224, BIO201, AES218, AES224, BIO204, BNS232, BNS233, AGR311, AGR398, AES399, AES309, BIO301, BIO390, AES332, AGR333, AES315,** *AGR102, AGR104, BIO103, BNS208, AGR344*
B4	Critical evaluation of data from a variety of sources	**AGR217, BIO204, AGR302, AGR311, AGR398, BNS321, AES399, AES303, AES309, AES339, BIO301, BIO390, MSM347, AES332, AGR333, AES315,** *AGR206, AES302, AGR315, AGR318, AGR327, AGR328, AGR340, AGR344, AES338, AGR306, AGR327, CMS301, MSM332, AES317, AGR328*
B5	Presentation of data in written format according to accepted scientific conventions.	**AGR105, AGR110, AGR112, BIO108, MST105, AES224, AGR216, AGR217, AGR220, AGR223, AGR224, BIO201, AGR311, BNS321, AES217, AES218, AES224, BIOS204, BNS232, BNS233, AES399, BIO301, BIO390, AES332, AGR333,** *AGR102, AGR104, AGR120,*

		BIO101, BIO103, BIO104, MST100, BNS207, BNS208, BNS209, NEU201, AGR306, AGR328, AGR340, AGR344, AES261, AGR224, CMS301, MSM332
C1	Critically analyse arguments and evidence derived from a range of sources	**AGR105, AGR110, AGR112, AES224, AGR216, AGR217, AGR219, AGR220, AGR223, AGR302, AGR311, AGR398, BNS321, AES224, BIO203, BIO204, AES399, AES303, AES309, AES339, BIO301, BIO390, MSM347, AES332, AGR333, AES315,** *AGR102, AGR104, BNS207, BNS208, AES302, AGR306, AGR315, AGR318, AGR327, AGR328, AGR340, AGR344, AES243, AES338, CMS301, MSM332, AES317*
C2	Solve problems based on information either gathered or presented. Data analysis and interpretation	**AGR110, AGR112, AES224, AGR216, AGR217, AGR220, AGR223, AGR224, BIO201, AES218, AES224, BIO204, BNS233, AGR311, AGR398, AES399, AES309, BIO301, BIO390, AES332, AGR333,** *AGR102, AGR104, BNS207, BNS208, AGR306, AGR318, AGR328, AES317*
C3	Gather, extract and evaluate relevant information	**AES224, AGR217, AGR220, AGR223, AES218, AES224, BIO204, BNS233, BIO301, BIO390, AES332, AGR333, AES315, AGR311, AGR398,** *AGR204, AES302, AGR306, AGR315, AGR318, AGR328, AGR340, AGR344*
C4	Evaluate the contribution of individuals to the learning experience by peer assessment.	*AES302, AGR315, AGR328, AGR340, AGR344*
D1	Work effectively as part of a team	**AES224, AGR219, AGR220 AGR302, AES224, BIO301, AES332, AGR333,** *AGR102, AGR104, BNS208, AGR315, AGR328, AGR340, AGR344, AES302, AGR328, AGR344*
D2	Exhibit computer literacy in the gathering of information from a wide range of sources together with the processing and interpretation of numerical information.	**AGR110, AGR216, AGR217, AGR219, AGR223, AES224, BIO204, BNS233, AGR311, AGR398, AES309, AES339, BIO301, BIO390, AES332, AGR333, AES315**, *AGR104, AGR204, AGR306, AGR318, AGR340*
D3	Communicate effectively both in the form of oral presentations to large and small groups, and via the written word in essays, reports and in poster presentations	**AGR110, BIO108, AES224, AGR209, AGR217, AGR219, AGR220, AGR223, AGR224, AES217, AES218, BIO204, BNS232, BNS233, AGR302, AGR311, AGR398, BNS321, AES399, AES309, AES339, BIO301, BIO390, MSM347, AES332, AGR333, AES315,** *AGR102, AGR104, AGR120, BIO103, AGR204,*

		BNS207, BNS208, BNS209, AES302, AGR306, AGR315, AGR318, AGR327, AGR328, AGR340, AGR344, AES338, CMS301, MSM332, AES317
D4	Show the ability to work independently, to manage time effectively, to use initiative and be adaptable	**AES224, AGR217, AGR398, AES224, BIO204, BIO301, BIO390, AES315,** *AGR344*

12 Criteria for Admission:

A/AS Levels and AVCE Qualifications
CCC from 18 units, including a minimum of 12 units from 6- or 12-unit qualifications and preferably including A level Biology and/or Chemistry. GCSE Biology, Chemistry (or Dual Award Science) and Mathematics required if not offered at A or AS level.

Alternative Entry Qualifications
Scottish Qualifications
BBBB at Higher Grade preferably including Biology and/or Chemistry. Biology, Mathematics and Chemistry required at Standard Grade (or Intermediate 2) if not offered at Higher Grade. Combinations of Highers and Advanced Highers accepted.

International Baccalaureate
A minimum of 28 points in the IB Diploma, preferably with Chemistry and/or Biology at Higher Level grade 5 or above. Mathematics should be offered at Standard Level grade 5 or above if not offered at Higher Level.

Irish Leaving Certificate
BBBBC at Higher Level, to include two science subjects (which may include Maths).

Access Qualifications
For applicants offering Access to HE courses, modules in Mathematics, Chemistry and Environmental or Biological Sciences are desirable (three modules at Merit grade for HEFC).

BTEC National Diploma
BTEC National Diploma in a science-related subject at overall MMM, to include a unit in Mathematics at Merit grade.

Admissions policy:
Applicants are invited to attend a Programme Open Day and are given the option of an individual interview. We welcome applications from mature candidates and those with non-traditional qualifications.

Arrangements for non-standard entrants:
All other non-standard applications are considered on an individual basis. Applicants are encouraged to attend an Open Day and/or attend an interview with the Admissions Tutor.

Additional Requirements: Evidence of relevant interest and work experience in animal science.

13 Support for Students and their Learning:

Induction
The first week of the first term/semester is an Induction Week with no formal teaching. During this period all students will be given detailed programme information relating to their Stage and the timetable of

lectures/practicals/labs/ tutorials/etc. In particular all new students will be given general information about the School and their course, as described in the Degree Programme Handbook. The International Office offers an additional induction programme for overseas students (see http://www.ncl.ac.uk/international/coming_to_newcastle/orientation.phtml).

Study skills support
Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification.

Academic support
The initial point of contact for a student is with a lecturer or module leader, or their tutor (see below) for more generic issues. Thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Staff/Student Committee, and/or at the Board of Studies.

Pastoral support
All students are assigned a personal tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. Details of the personal tutor system can be found at http://www.ncl.ac.uk/undergraduate/support/tutor.phtml. In addition the University offers a range of support services, including the Student Advice Centre, the Student Counselling Service, the Mature Student Support Service, and a Childcare Support Officer, see http://www.ncl.ac.uk/undergraduate/support/welfare.phtml.

Support for Special Needs
Support for students with special needs is provided as required and the University's Disability Support Service can be consulted where appropriate. For further details see http://www.ncl.ac.uk/undergraduate/support/disability.phtml.

Learning resources
The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities, see http://www.ncl.ac.uk/undergraduate/support/acfacilities.phtml.
All new students whose first language is not English are required to take an English Language test in the Language Centre. Where appropriate, in-sessional language training can be provided. The Language Centre houses a range of resources for learning other languages which may be particularly appropriate for those interested in an Erasmus exchanges. See http://www.ncl.ac.uk/undergraduate/support/langcen.phtml.

14 Methods for Evaluating and Improving the Quality and standards of Teaching and Learning:

Module reviews
All modules are subject to review by questionnaires which are considered by the Board of Studies. Changes to, or the introduction of new, modules are considered at the School Teaching and Learning Committee and at the Board of Studies. Student opinion is sought at the Staff/Student Committee and/or the Board of Studies. New modules and major changes to existing modules are subject to approval by the Faculty Teaching and learning Committee.

Programme reviews
The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee.

External examiner reports
External Examiner reports are considered by the Board of Studies under Reserved Business, in the absence of the student representatives. The Board responds to these reports through Faculty Teaching and Learning Committee.

Accreditation reports
This programme is not accredited by any professional body.

Student evaluations
All modules, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Staff/Student Committee, and the Board of Studies.

Feedback mechanisms
Feedback to students is effected via the Staff/Student Committee and the Board of Studies.

Faculty and University Review Mechanisms
The Programme is subject to the University's Internal Subject Review programme, see http://www.ncl.ac.uk/aqss/qsh/internal_subject_review/policy_09.01.03.pdf

15 Regulation of Assessment:

Pass Marks
The pass mark, as defined in the University's Undergraduate Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.html), is 40.

Course Requirements
Progression is subject to the University's Undergraduate Progress Regulations (http://www.ncl.ac.uk/calendar/university.regs/ugcont.html) and Undergraduate Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.html). In summary, students must pass 120 credits at each Stage. Limited compensation down to 35 is possible at each Stage and there are resit opportunities, with certain restrictions.

Weighting of Stages
Modules taken at Stages 2 and 3 are Honours modules and the two stages contribute to the award of the final degree in the ratio 25:75.

Common Marking Scheme
The University employs a common marking scheme, which is specified in the Undergraduate Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs/ugcont.html), namely

	Honours	**Non-honours**
<40	Fail	Failing
40-49	Third Class	Basic
50-59	Second Class, Second Division	Good
60-69	Second Class, First Division	Very Good
70+	First Class	Excellent

Role of the External Examiner
An External Examiner, a distinguished member of the subject community, is appointed by Faculty Teaching and Learning Committee, after recommendation from the Board of Studies. The

External Examiner is expected to:

See and approve examination papers
Moderate examination and coursework marking
Attend the June Board of Examiners
Report to the University on the standards of the programme

16 Indicators of Quality and Standards:

Professional Accreditation Reports
Not applicable

Internal Review Reports
This programme was covered by the Internal Subject Review for Unit 17 held in March 1997 and was subsequently approved by Faculty Teaching and Learning Committee and University Teaching and Learning Committee.

This programme is due for Internal Subject Review in Semester 1 of 2007-08

Previous QAA Reports

This programme received a QAA Subject Review in April 1998 and achieved a score of 22/24.

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. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

17 Other Sources of Information:

The University Prospectus (see http://www.ncl.ac.uk/undergraduate/)

The Departmental Prospectus (see http://www.ncl.ac.uk/undergraduate/subjects/C305)

The University and Degree Programme Regulations (see http://www.ncl.ac.uk/calendar/pdf/uniregs.pdf and http://www.ncl.ac.uk/calendar/sae/)

The Degree Programme Handbook

QAA Subject Review Report (http://www.qaa.ac.uk/revreps/subj_level/q271_98_textonly.htm)