

PROGRAMME SPECIFICATION

1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	BSc Honours
4	Programme Title	Animal Science with honours in Livestock Technology with honours in Companion Animal Studies
5	UCAS/Programme Code	C305 Animal Science (deferred choice) D320 honours in Livestock Technology D300 honours in Companion Animal Studies
6	Programme Accreditation	N/A
7	QAA Subject Benchmark(s)	Agriculture, forestry, agricultural sciences, food sciences and consumer sciences.
8	FHEQ Level	H
9	Date written/revised	July 2008

10 Programme Aims

1. 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 physiology and health of farm and companion animals.
2. 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
3. To provide courses based on modern experimental science and to encourage critical analysis, inductive reasoning, experimental procedure and lateral synthesis.
4. 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.
5. 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.
6. To develop or enhance 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 FHEQ at Honours level and which takes appropriate account of the subject benchmark statements in Agriculture, forestry, agricultural sciences, food sciences and consumer sciences and Biology

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for Agriculture, forestry, agricultural sciences, food sciences and consumer sciences

Knowledge and Understanding	
On completing the programme students should 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 farm (Livestock Technology) or companion (Companion Animal Studies) 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.
<p>After Stage1 students will have gained a bank of knowledge and understanding which provides them with a sound platform and the confidence to pursue one of the specific final year honours options in Stages 2 and 3.</p> <p>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 possible more advanced, post-graduate studies in appropriate fields of animal science.</p>	
Teaching and Learning Methods	
<p>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, companion animal holdings, 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.</p> <p>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.</p>	
Assessment Strategy	
<p>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).</p>	
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. Data analysis and interpretation
B3	Gather, extract and evaluate relevant information

B4 Evaluate the contribution of individuals to the learning experience by 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 their 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, handling data and discussion. Students are encouraged to justify their opinions in discussion, in case studies and in their research project or dissertation where they practice production of reasoned arguments and analysis.

Assessment Strategy

The range of methods described in both A and C also provides an opportunity to assess cognitive skills (B1-B4): in the form of seminars (B1, B3 and B4), case studies (B2 and B4) and essay writing (B1 and B3). The Research Project ACE3097 or the Dissertation module ACE3096 is a major vehicle for the assessment of all the cognitive skills (B1-B4).

Practical Skills

On completing the programme students should have the skills for:

- C1 Development of hypotheses and design, execution and analysis of data for a range of study types including laboratory and field-based studies.
- C2 Use of statistical procedures to facilitate the design of studies and the analysis of collected data.
- C3 A range of quantitative and qualitative techniques used in the area of animal science.
- C4 Critical evaluation of data from a variety of sources
- C5 Presentation of data in 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. Students acquire skills (C1-C5) 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 (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. ACE3097) (C1). Many are also assessed in the Communication Skills module (ACE2026) and throughout Stage 3 of the programme (eg ACE3047 Animal Health Conference, ACE3046 Animal Science Issues).

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 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 and Learning Methods

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).

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 research project module ACE3097 (or the combination of work placement, ACE3045 and dissertation, ACE3096) is also a major vehicle for the assessment of key skills (D2-D4).

12 Programme Curriculum, Structure and Features

Basic structure of the programme

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 but may be substituted by the work placement ACE3045 – 10 credits and a dissertation ACE3096 – 20 credits). 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 domesticated animal science, providing students the opportunity to specialise in either livestock technology or companion animal studies.

B Programme Structure

Stage 1 gives the foundation to the two honours options. 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 Livestock Technology (D320) or with honours in Companion Animal Studies (D300)

Stage 1 consists of 100 compulsory credits in the key underpinning subjects of biochemistry, physiology, genetics, microbiology, health, behaviour and computing/data analysis. Students may then select their optional modules so as to include further "animal" modules or include the study of marketing/management or a language. These academic threads continue in subsequent years. 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).

Following Stage 1, students elect for one of 2 honours options. However the two

options contain a high proportion of common material. There are 80 common compulsory credits at each stage. These are completed by 20 credits compulsory to the honours option plus a further 20 credits which may be either further animal modules (including the compulsory modules of the other honours option), or a continuation of marketing / management modules or of language modules.

D320 Livestock Technology

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

Stage 2 has a core of 80 compulsory modules focusing on the key areas of domestic animal science. Issues such as animal breeding, feeds and feeding, behaviour, immunology and parasitology are covered with reference to the range of domestic animals. Quantitative (ACE2030) and communication skills (ACE2026) are developed alongside and within the subject specific modules. This information together with the underpinning science from Stage 1 is integrated with information on management and socio-economic issues to describe our main farm livestock production systems in the two honours option compulsory modules : ACE2021 Ruminant Livestock and ACE2043 Nonruminant Livestock). Students take a further 20 optional credits. These may include further “animal” modules, including the modules ACE2033 Equine Studies and ACE2035 Companion Animals in marketing / management or a language.

Stage 3 has a core of 80 compulsory modules. It involves a major research project (ACE3097) of 30 credits on a topic of the individual student's choice and supervised by a member of academic staff active in that area. This may be replaced by a 10 credit work placement module (ACE3045) and a 20 credit dissertation (ACE3096). Further compulsory modules cover the key areas of nutrition and growth, and biochemistry of both farm and companion animals. In addition there are two modules: Animal Science Issues (ACE3046) and Animal Health Conference (ACE3047) which deal with current topical issues and develop students' transferable skills. There are then a further 20 credits which are compulsory for this honours option: ACE3043 Livestock Reproduction and ACE3048 Livestock Behaviour. The optional modules (20 credits) allow students the opportunity to continue with more “animal” modules, eg (ACE3022) Animal Welfare and Environment, Tropical Animal Production (ACE3028). Or they may continue with their study of marketing / management modules or language modules (lack of prerequisites prevents this route until 2007-8). 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.

D300 Companion Animal Studies.

This honours option involves the physiology, biochemistry, nutrition, health, breeding and reproduction of companion animals. It also examines the social, environmental and welfare issues associated with companion animals in society.

Stage 2 has a core of 80 compulsory modules focusing on the key areas of domestic animal science. Issues such as animal breeding, feeds and feeding, behaviour, immunology and parasitology are covered with reference to the range of domestic animals. Quantitative (ACE2030) and communication skills (ACE2026) are developed alongside and within the subject specific modules. This information together with the underpinning science from Stage 1 is integrated with information on societal issues to describe our main companion animals in the two honours option compulsory modules: ACE2033 Equine Studies and ACE2035 Companion Animals. Students take a further 20 optional credits. These may include further “animal” modules, including the modules ACE2021 Ruminant Livestock or ACE2043 Nonruminant Livestock , or in marketing / management or a language

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modules cover the key areas of nutrition and growth, and biochemistry of both domestic animals. In addition there are two modules: Animal Science Issues (ACE3046) and Animal Health Conference (ACE3047) which deal with current topical issues and develop students' transferable skills. There are then a further 20 credits which are compulsory for this honours option: ACE3044 Companion Animal Reproduction and ACE3049 Companion Animal Behaviour.. The optional modules (20 credits) allow students the opportunity to continue with more "animal" modules, eg ACE3022 Animal Welfare and Environment. Or they may continue with their study of marketing / management modules or language modules (lack of pre-requisites prevents this route until 2007-8). 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.

A Knowledge and Understanding

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

The programme provides a thorough coverage of the pure and applied aspects of animal science.

The key distinctive feature is the ability, after Stage 1, to specialise in either farm livestock or companion animals (whilst maintaining some study of the other animal grouping)

Programme regulations (link to on-line version)

<http://www.ncl.ac.uk/regulations/programme/>

13 Criteria for admission

Entry qualifications

A-Level Subjects and Grades: BCC or 240 points excluding General Studies.

GCSEs required: Biology and Chemistry (or Dual Award Science) if not offered at a higher level

Scottish Highers: ABBB including Biology and/or Chemistry. Combinations of Highers and Advanced Highers are accepted.

International Baccalaureate: 28 points with Higher Level Biology and/or Chemistry

BTEC National Diploma: Agriculture or Applied Science at overall DMM/MMM

Access courses: Modules in Chemistry and Biological Sciences essential, and Business Studies desirable.

Admissions policy/selection tools

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.

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Non-standard Entry Requirements

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.

Additional Requirements

Evidence of relevant interest and work experience in animal science.

Level of English Language capability

IELTS 6.5 for International Students

14 Support for Student Learning

Induction

During the first week of the first semester students attend an induction programme. New students will be given a general introduction to University life and the University's principle support services and general information about the School and their programme, as described in the Degree Programme Handbook. New and continuing students will be given detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc. The International Office offers an additional induction programme for overseas students.

Study skills support

Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

Numeracy support is available through Maths Aid.

Help with academic writing is available from the Writing Centre.

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. In addition the University offers a range of support services, including one-to-one counselling and guidance or group sessions/workshops on a range of topics, such as emotional issues eg. Stress and anxiety, student finance and budgeting, disability matters etc. There is specialist support available for students with dyslexia and mental health issues. Furthermore, the Union Society operates a Student Advice Centre, which can provide advocacy and support to students on a range of topics including housing, debt, legal issues etc.

Support for students with disabilities

The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies.

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.

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-session language training can be provided. The INTO Newcastle University Centre houses a range of resources which may be particularly appropriate for those interested in an Erasmus exchange.

15 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. The Board responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

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. The National Student Survey is sent out every year to final-year undergraduate students, and consists of a set of questions seeking the students' views on the quality of the learning and teaching in their HEIs. With reference to the outcomes of the NSS and institutional student satisfaction surveys actions are taken at all appropriate levels by the institution.

Mechanisms for gaining student feedback

Feedback is channelled 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 process. Every five years degree programmes in each subject area are subject to periodic review. This involves both the detailed consideration of a range of documentation, and a two-day review visit by a review team which includes an external subject specialist in addition to University and Faculty representatives. Following the review a report is produced, which forms the basis for a decision by University Teaching and Learning Committee on whether the programmes reviewed should be re-approved for a further five year period. (This was last undertaken in spring 2008)

Accreditation reports

N/A

Additional mechanisms

N/A

16 Regulation of assessment

Pass mark

The pass mark is 40 (Undergraduate programmes)

Course requirements

Progression is subject to the University's Undergraduate Progress Regulations and Undergraduate Examination Conventions. In summary, students must pass, or be deemed to have passed, 120 credits at each Stage. Limited compensation up to 40 credits and down to a mark of 35 is possible at each Stage and there are resit opportunities, with certain restrictions.

Weighting of stages

The marks from Stages 2 and 3 will contribute to the final classification of the degree
The weighting of marks contributing to the degree is 25% from Stage 2 and 75% from Stage 3

Common Marking Scheme

The University employs a common marking scheme, which is specified in the Undergraduate Examination Conventions, namely

	Modules used for degree classification (DC)	Modules not used for degree classification
<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 Board of Examiners
- Report to the University on the standards of the programme

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

The University Prospectus (see <http://www.ncl.ac.uk/undergraduate/> or <http://www.ncl.ac.uk/postgraduate/>)

The School Brochure (contact enquiries@ncl.ac.uk)

The University Regulations (see <http://www.ncl.ac.uk/calendar/university.regs/>)

The Degree Programme Handbook

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

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Intended Learning Outcome	Module codes (Compulsory in Bold)
A1 A good understanding of the basic sciences which underpin animal science.	ACE1013, ACE1017, ACE1019, ACE1012, ACE1011, ACE1021, BIO1004, ACE1027, ACE2030, ACE2025, ACE2028, ACE2034, BIO2012,
A2 An understanding of the technical language, terminology and use of Latin relevant to animal science.	ACE1013, ACE1011, ACE1012, ACE1019, BIO1004, ACE1027, ACE2025, ACE2026, ACE2028, ACE2031, ACE2034, BIO3012, ACE3037, BIO3005, BIO1002, BIO2014 ACE3043, ACE3044, ACE3048, ACE3049,
A3 A good understanding of the application of science to the understanding of either livestock technology or companion animal studies (according to Honours option)	ACE1017, ACE1020, ACE1021, ACE2021, ACE2025, ACE2026, ACE2027, ACE2028, ACE2030, ACE2031, ACE2034, ACE2033, ACE2043, ACE3043, ACE3045, ACE3046, ACE3096, ACE3047, ACE3048, ACE3049, ACE3050, ACE3097, ACE3055, , ACE1014, BIO1005, BIO1001, BIO1002, ACE2019, ACE2036, BIO2014, BIO2007, ACE3025, ACE3028, ACE3039,
A4 An understanding of the scientific, societal and environmental influences on animal science.	ACE1020, ACE2021, ACE2027, ACE2033, ACE2035, ACE3097, , AGR309, ACE3045, ACE3037, ACE3025, ACE3096, ACE3047, ACE3046, ACE3048, ACE3049 ACE1014, ACE2010, ACE2019, ACE2036, ACE3025, ACE3028, ACE3039
A5 An understanding of the relevance of animal science to human needs and expectations at local, national and international levels.	ACE1020, ACE2021, ACE2027, ACE2033, ACE2035, ACE3046, ACE3047 ACE2010, ACE3028, ACE3039, ACE3045
A6 An understanding of the interrelationships between animal science and other disciplines (e.g. Agriculture, environmental biology).	ACE1020, ACE2021, ACE2026, ACE2027, ACE2028, ACE2033, ACE2034, ACE2035, ACE1014, ACE2010, ACE2019, ACE2036, ACE3028, ACE3039
A7 A desire to pursue new knowledge and understanding from current research.	ACE2026, ACE3097, AGR399, ACE3046, ACE3047, ACE3096
B1 Critically analyse arguments and evidence derived from a range of sources	ACE3096 or ACE3097
B2 Solve problems based on information either gathered or presented. Data analysis and interpretation	ACE1012, ACE1013, ACE1017, ACE1027, ACE2043, ACE2028, ACE2030,
B3 Gather, extract and evaluate relevant information	ACE1017, ACE1019, ACE1020 ACE1021, ACE2025, ACE2026, ACE2028, ACE2030, ACE2031, BIO2013, ACE3097
B4 Evaluate the contribution of individuals to the learning experience by peer assessment.	ACE1020, ACE2026, ACE3046, ACE3047, ACE2035, ACE3048, ACE3049
C1 Development of hypotheses and design, execution and analysis of data for a range of study types including laboratory and field-	ACE1011, ACE1012, ACE1013, ACE1017, ACE1019, ACE1027, ACE2028, ACE2030, ACE2031, ACE3097, AES218, BIO2013, BIO2011, BIO3003, BIO390, AES332, ACE3037, ACE2036,

based studies.	
C2 Use of statistical procedures to facilitate the design of studies and the analysis of collected data.	ACE1017, ACE2026, ACE2028, ACE2030, BIO2013, ACE3097, ACE3037
C3 A range of quantitative and qualitative techniques used in the area of animal science.	ACE1017, ACE1019, ACE1021, ACE2025, ACE2026, ACE2028, ACE2030, ACE2031, BIO2013, ACE3097
C4 Critical evaluation of data from a variety of sources	ACE1017, ACE2026, ACE3046, ACE3047, ACE3097, ACE3028, ACE3039, ACE3045, ACE3096, ACE3043, ACE3048, ACE3044, ACE3049
C5 Presentation of data in written format according to accepted scientific conventions.	ACE1011, ACE1012, ACE1013, ACE1017, ACE1019, ACE1020, ACE1021, BIO1004, ACE1027, ACE2025, ACE2026, ACE2028, ACE2030, ACE2031, BIO2012, ACE3055, ACE3037, BIO1005, BIO1002, ACE2036, BIO2014, ACE3039, ACE2031,
D1 Work effectively as part of a team	ACE2027, ACE2028, BIO2013, ACE3037, ACE3047, ACE3046, ACE3048, ACE3049, ACE3025, ACE3039
D2 Exhibit computer literacy in the gathering of information from a wide range of sources together with the processing and interpretation of numerical information.	ACE1012, ACE1017, ACE2025, ACE2026, ACE2027, ACE2030, BIO2013, ACE3047, ACE3046, ACE3050, ACE3048, ACE3049, ACE3097, BIO3003, BIO3010, ACE3037, ACE2019, ACE3028, ACE3039
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	ACE1011, ACE1012, ACE1013, ACE1017, ACE1019, ACE1020, BIO1004, ACE1027, BIO2013, ACE2021, ACE2025, ACE2026, ACE2027, ACE2028, ACE2030, ACE2031, ACE2034, ACE2033, ACE2035, BIO2012, ACE3043, ACE3044, ACE3045, ACE3046, ACE3096, ACE3047, ACE3048, ACE3049, ACE3050, ACE3097, ACE3055, ACE1014, BIO1005, BIO1001, BIO1002, ACE2019, ACE2036, ACE3028, ACE3039
D4 Show the ability to work independently, to manage time effectively, to use initiative and be adaptable	BIO2013, ACE2026, ACE3045, ACE3096, ACE3097, BIO2013