## 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	B.Sc. (Hons)
4.	Programme Title	Environmental Biology
5.	Programme Accredited by:	Not applicable
6.	UCAS Code	C150
7.	QAA Benchmarking Group(s)	Biosciences
8.	Date of production/revision	October 2004

#### 9. Programme Aims:

The programme aims:

To recruit students with a varied educational background who wish to study how organisms interact with their environments, and how changing environments affect these organisms.

To produce graduates with:

- i) a training in a range of disciplines which will allow them to monitor, study and conserve organisms in their environments
- ii) a full repertoire of key skills, giving them the ability to understand, process and communicate information from a variety of disciplines in an integrated manner
- iii) the necessary portfolio of skills and knowledge to gain employment as environmental biologists, or in other fields requiring graduate-level investigative and problem-solving skills

To provide a programme which meets the FHEQ at Honours level and which takes appropriate account of the QAA subject benchmark statements in Biosciences (Ecology and Environmental Biology)

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

#### A Knowledge and understanding

A successful student will have understood and have knowledge of:

A1. The fundamental physical, chemical and biological processes within global ecosystems and their inter-relationships.

- A2. The pressures and constraints suffered by living organisms and ecosystems as a result of the activities of man.
- A3. Current ideas regarding sustainability and environmental ethics.
- A4. Practical and legal techniques and frameworks which underlie nature conservation.
- A5. Measures of biodiversity and strategies for its maintenance.
- A6 Strategies whereby living organisms adapt to their environments.
- A7. Interactions between living organisms.
- A8 Habitat and community description and classification.

## Teaching Strategy

The primary mechanism for teaching knowledge and understanding is via lectures supported by laboratory work and case studies. The interdependent nature of the global environment (A1) and interactions between man and living things (A2-A5) are particularly developed through fieldwork and site visits. The understanding of how organisms adapt to their environment (A1 A2 A6 A7) is developed through fieldwork and case studies and given a currency by the use of academic staff who themselves are practitioners.

## Learning Strategy

Students are encouraged to undertake independent learning and are provided with reading and other tasks to guide them in this. They are encouraged to question accepted theory and dogma, to develop the confidence to form their own hypotheses and opinions, and the means to test and support them. Field and laboratory observations, the writing of reports, and the collation and processing of data and case study information aid the development of their understanding. Efficiency, reliability and personal organisation are developed, encouraged and prized.

## Assessment Strategy

Assessment is partly by way of unseen written examinations (essay-type, short answer, and problemsolving questions) and partly by way of coursework and case studies. Most modules include coursework, thus ensuring that elements of formative, as well as summative, assessment and a variety of assessment methods are employed.

# B Subject –specific/professional skills

A successful student will be able to undertake:

- B1. Field investigations: planning, organisation, observation and recording.
- B2. Classification and identification of plants and animals.
- B3. Data analysis: data collation, display, statistical analysis and interpretation.
- B4. Experimental design: testing hypotheses, design of controlled experiments.
- B5. Laboratory and analytical skills, including safety regimes.

## Teaching Strategy

Field and taxonomic skills (B1, B2) are developed through field visits and classes. These also reinforce the data handling and experimental design principles (B3, B4) first introduced in lectures. Laboratory skills (B5) are developed through laboratory-based practicals.

#### Learning Strategy

Students acquire skills (B1-B5) through hands-on practical experience, problem solving exercises and their Research Project in Stage 3. Practical exercises become progressively less formulaic, requiring increasing levels of self-reliance.

#### Assessment strategy

Assessment is by way of examination (B3) and reports, practical write-ups and the research project (B1-B5).

## C Cognitive skills

A successful student will be able to:

- C1. Handle data from a variety of disciplines.
- C2. Interpret and effectively communicate quantitative data.
- C3. Critically appraise data in order to produce reasoned conclusions.
- C4. Solve problems of design and interpretation.

## Teaching Strategy

Encouraging students to consider data in a critical manner and justify their interpretation develops cognitive skills. This is done through tutorials and a variety of in-course tasks. AES100 The Global Environmental System and BIO105 Behaviour and Ecology encourage from early in Stage 1 a focus on understanding rather than learning facts, with an emphasis on problem-solving (C3, C4). This approach, and an emphasis on integrating materials across disciplines (C1), continues particularly in AES277 Environmental Assessment and Design, AES397 Ecological Survey and Identification Field Course and AES395 Environmental Biology Research Project. The ability to handle, interpret and communicate quantitative data (C2) is developed specifically through BIO102 Biology Skills and Numerical Methods and BNS233 Quantitative Techniques, leading to increasingly independent handling of data in various Stage 2 and 3 field classes and finally in the research project.

## Learning Strategy

Students learn through practice in problem-solving, handling data, and discussion. In BIO204 Biology Communication Skills students are encouraged to justify their own opinions in discussion, and subsequently in case studies and the research project, they practise the presentation of reasoned scientific argument.

#### Assessment strategy

Cognitive skills are assessed by means of problem assignments, laboratory and field reports and the dissertation for the Stage 3 research project.

# D Key (transferable) skills

A successful student will be able to:

- D1. Summarise and communicate in writing and verbally in a manner appropriate to the target audience.
- D2. Use information sources effectively.
- D3. Work both independently and as an effective member of a team.
- D4. Plan effectively: handle logistical constraints, use a Gantt Chart and organise one's own learning according to an explicit strategy.
- D5. Problem-solve.
- D6. Apply the scientific method.
- D7. Use Computer and Information Technology effectively.

## Teaching Strategy

Communication (D1) and C & IT (D7) skills are developed through BIO102 Biology Skills and Numerical Methods, BIO204 Biology Communication Skills and AES399 Communication Skills, which require a number written and oral contributions. Library workshops develop information searching skills (D2). The basic elements of teamwork theory (D3) are introduced in tutorials and the Stage 2 Induction Week programme; setting team-based exercises in laboratory classes and during field work reinforces this. By contrast, effective independent working (D4) is taught by illustration of the use of Gantt charts and learning theories are discussed in the Induction Week programme. Problem-solving (D5) and use of the scientific method (D6) are taught through tutorials, laboratory and fieldwork projects.

## Learning Strategy

Students learn through production of essays, case studies, and critiques of published written material. Emphasis is placed on effective study habits and time management at the very beginning of the programme, and this is continually re-enforced.

## Assessment strategy

Key skills are assessed through the production of coursework, case studies and the Stage 3 research project dissertation. The effective use of information sources (D2) is assessed throughout the programme using essays and case studies and through the literature review required in the dissertation. Planning Skills (D4) are summatively assessed in communication skills modules and during the research project, with formative assessment being given earlier via feedback on field and laboratory work. Problemsolving Skills (D5) and use of the scientific method (D6) are also assessed through fieldwork exercises and laboratory reports. C&IT skills (D7) are assessed in coursework exercises, in the production of case studies and especially in the production of the research project report at Stage 3.

## 11 Programme Features, Structure and Curriculum

#### **A Programme Features**

Some particular features of the programme are:

- Stage 2 residential field course as a training in plant identification and vegetation community description and classification (a key vocational requirement)
- Deferment of choice of specialising pathway until Stage 2
- Opportunities to study terrestrial, marine and atmospheric environments and environmental law throughout the 3 year programme
- Optional work placement between stages 2 and 3 with a relevant professional organisation, followed by a reporting module at stage 3.
- Stage 3 includes a substantial research project, demanding high level organisational, communication and problem-solving skills, as well as the development of considerable competence in a particular suite of laboratory and/or field techniques, and any complementary data analytical skills.

The combination of modules taken at each stage gives due importance to the collection, interpretation and integration of data from the biological, chemical and physical sciences during the study of environmental biology. It also illustrates the practice of environmental biology in a variety of possible employment areas.

There is emphasis on the development of good study skills, through dedicated instruction in some modules, and widespread practice elsewhere. Thus some modules focus strongly on the development of critical abilities and understanding, in addition to the acquisition of knowledge.

#### **B Programme Structure**

This is a three-year full-time modular programme consisting of 120 credits/year for three years. 10 credits are equivalent to 100 hours of student study time (i.e. including contact time and private study). Modules may have a valency of 10 or 20 credits.

Stage 1 is common to all students, ensuring a firm foundation across the full spectrum of disciplines necessary to practise environmental biology. This includes laboratory and fieldwork, individual and team problem-solving, and analytical procedures.

From Stage 2 onwards there is a common spine of compulsory modules with optional modules selected from either an 'Environmental Biology' or 'Ecology' cluster. This allows a degree of specialisation between:

a) Terrestrial and marine populational and physiological biology,

- or
- b) Terrestrial and marine environmental and community-based science.

Progression through to Stages 2 and 3 at honours level is dependent on obtaining an overall average mark of at least 40 at the preceding stage. Compensation for lower marks in some modules, in view of higher ones in others, is applied routinely. Two resit attempts are allowed for any one module.

## C Programme Curriculum

(See http://www.ncl.ac.uk/regulations/regulations.html?id=163)

## Degree of Bachelor of Science with Honours in Environmental Biology

# UCAS Code: C150

Note: all modules are offered subject to the constraints of the timetable and to any restrictions on the number of students who may be taught on a particular module. Not all modules may be offered in all years and they are listed subject to availability.

# 1. Stage 1

All candidates shall take the following compulsory modules:

Code Credits Descriptive title

AES100 (20)	The Global Environment System
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- AGR105 (10) Introduction to Genetics
- AGR112 (20) Introductory Biochemistry for Biologists
- BIO102 (20) Biology Skills and Numerical Methods
- BIO104 (10) Evolution for Biologists
- BIO105 (20) Behaviour and Ecology
- BIO106 (20) Plants, Microbes and the Environment

# 2. Stage 2

(a) All modules are Honours modules.

(b) All candidates shall take the following compulsory modules:

Code Credits Descriptive title

- BIO203 (10) Biodiversity and Conservation
- BIO204 (10) Biology Communication Skills
- AES243 (10) UK Countryside Change
- AES262 (10) Introduction to Atmospheric and Terrestrial Pollution
- AES277 (10) Environmental Assessment and Design
- BNS233 (10) Quantitative Techniques

(c) Candidates may follow one of two streams: Environmental Biology or Ecology.

## Environmental Biology Stream

Candidates choosing to follow the Environmental Biology stream shall take the following compulsory modules:

Code Credits Descriptive title

- AES261 (10) Population Genetics and Natural Selection
- AES230 (10) Plant Physiological Ecology
- AES217 (10) Entomology
- AES260 (10) Microbial Diversity and its Applications
- AES225 (10) Microbial Ecology
- MSM204 (10) Marine Pollution and Biogeochemistry

# (d) Ecology Stream

Candidates choosing to follow the Ecology stream shall take the following compulsory modules:

Code Credits Descriptive title

AES230 (10)	Plant Physiological Ecology
AES210 (10)	Climate and Climatic Change
AES264 (10)	Ecology of Populations and Communities
LAW253 (10)	Law and Land Use
AES225 (10)	Microbial Ecology
MSM235 (10)	Marine Population and Community Ecology

(e) With the permission of the Degree Programme Director and within the constraints of the timetable, candidates may substitute other modules in place of those listed under (c) and (d).

(f) Candidates will be given the opportunity of spending the equivalent of one academic year in a placement approved by the Degree Programme Director with a government, business or voluntary organization under the supervision of an academic tutor (liaison tutor) and an approved placement-based supervisor. The placement will be taken upon the successful completion of Stage 2 and before entering Stage 3, to gain industrial experience, and will last a minimum of eight months. Placements are optional, but it is obligatory for students taking placements to write a report which will form a compulsory 10-credit module at Stage 3. Students undertaking placements will be required to attend an Induction Course for placements, presently run by the Careers Service. The University cannot guarantee the provision of a placement.

# 3. Stage 3

(a) All modules are Honours modules.

(b) All candidates shall take the following compulsory modules:

Code Credits Descriptive title

- AES395 (20) Environmental Biology Research Project
- AES397 (10) Ecological Survey and Identification Field Course
- AES399 (10) Communication Skills

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

AES315 (10) Work Placement Report

(d) Candidates may follow one of two streams: Environmental Biology or Ecology.

(i) Candidates choosing to follow the Environmental Biology stream shall select modules to a total value of 70 or 80 credits from the following:

Code Credits Descriptive title

- CMS301 (10) Ornithology
- BNS326 (10) Environmental Adaptations of Plants in Wild and Cultivated Habitats
- AES311 (10) Comparative Ecology of Photosynthesis
- AES317 (10) Plant-Animal Interactions
- AES302 (10) Animal Ecophysiology
- BIO301 (10) Conservation Biology Issues
- AES320 (10) Pollution of Air, Water and Soil

(ii) Candidates choosing to follow the Ecology stream shall select modules to a total value of 70 or 80 credits from the following:

Code	Credits	Descriptive title
Either	Creans	
20000	(10)	
MSM338	(10)	Advances in Marine Ecology
Or		
AES308	(10)	Crop Ecology
AES309	(10)	Ecological Modelling
AGR330	(10)	Sustainable Land Management
Either		
LAW208	(10)	Countryside Law
Or		
MSM334	(10)	Marine Biogeochemical Cycles
AES339	(10)	Ecosystem Management
BIO301	(10)	Conservation Biology Issues
AES320	(10)	Pollution of Air, Water and Soil
AES317	(10)	Plant-Animal Interactions

(e) With the permission of the Degree Programme Director and with the constraints of the timetable, candidates may substitute other modules in place of those listed under (d).

## 4. Assessment Methods

The following assessment methods will be used: unseen written examination papers; in-course assessment of practical classes; in-course assessment of written assignments; in-course assessment of oral presentations; in-course assessment of fieldwork and related reports; assessment of practical project and related dissertation.

Details of the assessment methods for each module are specified in the Degree Programme Handbook.

# 5. Honours Performance

Candidates will be assessed for Honours on the basis of all modules taken at Stages 2 and 3. The assessment at Stage 2 contributes 25 per cent and Stage 3 contributes 75 per cent towards Honours performance.

## 6. Students Registering on or Before September 2003

# (a) Transfer to the Ordinary Degree Programme

Students who do not satisfy the requirements to progress within the Honours degree programme but who do satisfy the requirements for progression within the parallel Ordinary degree in Environmental Biology may transfer to this Ordinary degree programme at the end of Stage 1 or Stage 2, or, on tutorial advice, during Stage 2. Such transfer will be subject to the approval of the Degree Programme Director, on the recommendation of the Board of Examiners.

## (b) Transfer from the Ordinary Degree Programmes

Transfer may be permitted from the Ordinary degree programmes into an Honours degree programme within the Faculty at the discretion of the Degree Programme Director, on the recommendation of the Board of Examinersand subject to the relevant regulations for the Ordinary degree programmes in Agriculture and Biological Sciences.

<End of Regulations>

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

A 1		
A1	The fundamental physical, chemical and biological	<b>AES100, AES262,</b> <i>AES225, AES210,</i>
	processes within global ecosystems and their inter-	MST204, AES303, AES311, AES 320,
	relationships.	MSM338, AES308, AGR330,
		MSM334
A2	The pressures and constraints suffered by living	AES243, AES262, AES277,
	organisms and ecosystems as a result of the activities of	<b>BIO203,</b> <i>MST204, AES210, AES302,</i>
	man.	<i>BIO301, AES320, MSM338, AES308,</i>
		AGR330, AES339
A3	Current ideas regarding sustainability and environmental	AES243, AES277, BIO203,
	ethics.	<b>AES399,</b> <i>BIO301, AES308, AGR330,</i>
		LAW208, AES339
A4	Practical and legal techniques and frameworks which	AES243, AES262, AES277,
	underlie nature conservation.	<b>BIO203,</b> <i>LAW253, BIO301, LAW208,</i>
		AES339
A5	Measures of biodiversity and strategies for its	AGR105, BIO105, AES243,
	maintenance.	<b>AES277, BIO203, AES395,</b> <i>AES261,</i>
		AES260, AES225, MSM338
A6	Strategies whereby living organisms adapt to their	<b>BIO104, BIO105, BIO106, AES262,</b>
	environments.	AES261, AES230, AES217, AES260,
		AES225, CMS301, BNS326, AES311,
		AES302, AES320
A7	Interactions between living organisms.	<b>BIO105, BIO106,</b> <i>AES260, AES225,</i>
		AES264, AES303, AES317, MSM338,
		AES308
A8	Habitat and community description and classification.	<b>BIO105, AES397,</b> <i>AES264, AES303</i>

B1 Field investigations: planning, organisation, observation and recording. BIO105, AES277, BIO203, AES395, AES397, AES399, AES261, MST204, MSM338   B2 Identification of plants and animals. BIO105, BIO203, AES397, AES217, AES247, AES247, AES247, AES247, AES240, AES100, AGR112, AGR105, BIO106, AES277, BIO204, BIN5233, AES395, AES397, AES399, AES261, AES230, AES37, AES399, AES261, AES230, AES37, AES399, AES261, AES230, AES37, AES397, AES309, AES261, AES230, AES320, AES217, BIO104, BIO104, BIO105, BIO106, BIO233, AES397, AES307, AES307, AES307, AES304, AES217, AES304, AES230, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES230, AES260, AES230, AES320, AES302, AES303, AES399, AES261, AES230, AES303, AES399, AES261, AES230, AES302, AES303, AES302, AES303, AES302, AES			
and recording. AES397, AES399, AES261, MST204, MSM338   B2 Identification of plants and animals. BIO105, BIO203, AES397, AES217, AES247, AES240   B3 Data analysis: data collation, display, statistical analysis and interpretation. AES100, AGR112, AGR105, BIO106, AES277, BIO204, BNS233, AES395, AES397, AES261, AES230, AES247, AES240, AES247, AES240, AES247, MST204, AES240, AES240, AES247, AES240, AES247, MST204, AES240, AES247, AES240, AES247, MST204, AES240, AES247, AES240, AES240	B1	Field investigations: planning organisation observation	<b>BIO105 AFS277 BIO203 AFS305</b>
MSM338   B2 Identification of plants and animals.   AES200   B3 Data analysis: data collation, display, statistical analysis and interpretation. AES100, ACR112, ACR105, BIO102, BIO105, BIO106, AES277, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES307, AES204, AES264, AES203, AES307, AES264, AES204, AES264, AES203, AES397, AES261, AES230, AES277, BIO106, BIO106, BIO104, BIO106, BIO106, BIO104, BIO106, BIO106, BIO104, BIO106, BIO106, AES223, AES395, AES397, AES261, AES230, AES217, BIO106, BIO106, BIO106, AES243, AES397, AES261, AES230, AES217, AES395, AES201, AES230, AES217, BIO106, BIO106, AES223, AES320, AES395, AES201, AES230, AES217, BIO102, BIO106, AES223, AES264, AES304, ACS210, AES210, LAW223, CMS301, AES317, AES304, AES210, LAW223, CMS301, AES317, AES302, AES320, AES309, ACR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, ACR112, ACR106, BIO102, BIO105, AES231, AES320, AES309, ACR330, LAW208, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. ACR102, AES310, AES321, AES320, AES309, ACR330, AES301, AES320, AES320, AES309, AES301, AES320, AES301, AES320, AES301, AES301, AES304, AES201, AES320, AES301, AES300, AES301, AES304, AES300, ACR330, AES300, AES301, AES300, AES301, AES300, AES301, AES300, AES300, AES301, AES300, AES301, AES300, AES300, AES300, AES300, AES300, AES300, AE	DI		
B2 Identification of plants and animals. BIO105,BIO203, AES397, AES217, AES200   B3 Data analysis: data collation, display, statistical analysis and interpretation. AES100, AGR112, AGR105, BIO106, AES277, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES217, MST204, AES264, AES303, CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BIO102, BIO104, BNS233, AES395, AES397, AES261, AES230, AES217, MST204, AES261, AES230, AES217, BIO104, BIO105, BIO106, AES397, AES261, AES230, AES217, BIO203, BIO105, BIO106, AES397, AES261, AES230, AES210, AES240, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES237, BNS233, AES395, AES301, AES317, AES302, AES210, AES220, AES277, BIS233, CMS301, AES317, AES302, AES320, AES320, AES320, AES320, AES327, BIS203, AES301, AES310, AES317, AES302, AES320, AES327, BIS203, AES301, AES317, AES302, AES320, AES32		and recording.	
AES260   B3 Data analysis: data collation, display, statistical analysis   and interpretation. AES100, AGR112, AGR105, BI0102, BI0105, BI0106, AES277, BI0204, BNS233, AES395, AES397, AES399, AES301, AES230, AES37, MS7204, AES201, AES230, AES37, AES399, AES301, AES230, AES310, CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BI0102, BI0104, BI0105, BI0106, BNS233, AES395, AES397, AES261, AES230, AES217, SI0106, BNS233, AES390, AES217, AGR112, BI0105, BI0106, AES240, AES3264   C1 The ability to handle data from a variety of disciplines. AES100, BGN120, AES230, AES220, AES395, AES261, AES230, AES220, AES309, AGR30, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR10, AGR12, AGR105, BI0102, BI0105, AFS262, AES277, BI0203, BI0204, BNS233, AES392, AES309, AGR30, AES310, AES230, AES309, AGR30, AES30, AES320, AES309, AGR30, AES30, AES30, AES377, MST204, AES201, AES230, AES300, AGR30, AES300, AES201, AES230, AES300, AGR30, AES300, AES201, AES230, AES300, AGR30, AES300, AES201, AES230, AES320, MSM338, MSM334, AGR30, AES309, AES201, AES230, AES320, MSM338, MSM334, AES320, MSM338, AES309, C4   C3 Solve problems of design and interpretation. BI0102, BI0104, BI0105, BI0106, AES320, MSM338, AES309, AES320, MSM338, AES309, AES320	DO	Identification of plants and animals	
B3 Data analysis: data collation, display, statistical analysis and interpretation. AES100, AGR112, AGR105, BIO102, BIO106, AES277, BIO204, BINS233, AES395, AES397, AES399, AES261, AES230, AES217, MST204, AES264, AES303, CMS301, BNS325   B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BIO102, BIO104, BIO105, BIO106, BNS233, AES395, AES397, AES201, AES230, AES217, AES397, AES201, AES230, AES217, AES397, AES201, AES230, AES217, AES395, AES201, AES230, AES217, AES395, AES201, AES230, AES217, AES395, AES201, AES230, AES2217, AES395, AES201, AES230, AES2217, AES395, AES201, AES230, AES2210, AES308, ACR330, LAW208, MSM334   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES243, AES395, MST204, AES230, AES220, AES308, ACR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BIO102, BIO104, BIS233, AES320, AES307, AES309, AES261, AES230, AES307, AES309, AES261, AES320, AES307, AES309, AES302, BIO106, AES320, MSM338, MSM334, AGR330, AES300, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES302, AES307, AES309, AES302, BIO304, AES320, MSM338, AES300, AES320, MSM338, AES300, AES320	D2	identification of plants and animals.	
and interpretation. BIO102, BIO105, BIO106, AES277, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES217, MST204, AES264, AES303, CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. ACR105, BIO102, BIO104, BIO105, BIO106, BNS233, AES395, AES397, AES201, AES230, AES2217, ACR112, BIO105, BIO106, BNS233, AES395, AES397, AES261, AES230, AES2217, ACR112, BIO105, BIO106, AES395, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES243, AES308, ACR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BIO102, BIO105, AES210, AES230, AES309, ACR330, LAW208, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. ACR30, AES30, AES30, AES30, AES30, AES309, AES261, AES300, AES309, AES262, AES277, BIO105, BIO104, BIS333, AES395, AES309, AES261, AES300, AES309, AES301, AES330, AES330, AES301, MS334, ACR300, AES320, AES320, AES301, MS334, AES302, BES304, AES303, CMS301, BNS326, AES302, AES309, AES261, AES320, AES309, AES301, AES320, AES309, AES261, AES320, AES309, AES301, AES320, AES309, AES301, AES320, AES300, ACR330, AES320, BIO104, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS333, AES303, AES309, AES301, AES320, AES300, A	D2	Data analysis, data collection display statistical analysis	
BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES217, MS7204, AES264, AES303, CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. BIO105, BIO102, BIO104, BIO105, BIO106, BNS233, AES395, AES397, AES261, AES230, AES217, AGR112, BIO105, BIO106, AES2217, AGR112, BIO105, BIO106, AES230, AES217, AES395, AES261, AES230, AES260, AES395, AES261, AES230, AES260, AES395, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES243, AES395, AES261, AES230, AES2260, AES308, AGR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, BIO102, AES262, AES377, BIO102, BIO105, AES320, AES320, AES309, AGR330, LAW208, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BIO102, BIO104, BIS33, AES395, AES307, AES399, AES261, AES320, AES307, AES399, AES320, AES320, AES309, AGR330, LAW338, MSM334   C4 Solve problems of design and interpretation. BIO102, BIO102, BIO105, BIO106, AES327, AES399, AES261, AES320, AES307, AES399, AES320, AES320, AES307, AES399, AES320, AES320, AES307, AES399, AES320, AES320, AES307, AES399, AES320, AES320, AES320, MSM338, MSM334, AGR330, AES300, BIO244, BIN233, AES395, AES397, AES399, AES261, AES320, AES320, AES320, AES320, AES320, AES320, AES320, AES320, AES320, AES320, AES320, AES330, AES330, AES320, MSM338, AES300, AES330, AES320, MSM338, AES300, AES330, AES320, MSM338, AES300, AES300, AES320, MSM338, AES300, AES300,	B3		
AES397, AES399, AES261, AES230, AES217, MST204, AES264, AES303, CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BIO102, BIO104, BIO105, BIO106, BNS233, AES395, AES397, AES261, AES230, AES217, AGR112, BIO105, BIO106, AES395, AES261, AES230, AES260, AES395, AES261, AES230, AES260, AES395, AES277, BNS233, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES397, AES399, AES261, AES230, AES397, AES393, AES395, SID00, AGR112, AGR105, BIO102, BIO105, AES261, AES230, AES397, AES397, AES393, AES395, AES397, AES399, AES261, AES230, AES397, AES397, AES392, AES320, AES397, AES399, AES261, AES230, AES397, AES399, AES261, AES230, AES397, AES399, AES261, AES230, AES307, AES309, AES261, AES230, AES307, AES309, AES301, AES320, AES302, BIO102, BIO104, BIO105, BIO106, AES230, MSM334, AES302, BIO301, AES320, MSM338, AES309, AES264, AES309, AES307, AES309, AES264, AES309, AES307, AES309, AES264, AES300, AES320, MSM338, AES300, AES309, AES307, AES309, AES264, AES300, AES320, MSM338, AES300, AES309, AES307, AES309, AES264, AES300, AES320, MSM338, AES300, AES309, AES300, AES300, AES300, BIO104, BIO105, BIO106, AES300, AES300, AES300, AES300, AES300, AES		and interpretation.	
AES217, MST204, AES264, AES303, CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BIO102, BIO104, BIO105, BIO106, BNS233, AES395, AES397, AES261, AES230, AES217, AGR112, BIO105, BIO106, AES395, AES261, AES230, AES2260, AES395, AES261, AES230, AES260, AES395, AES277, BNS233, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BIO105, AES261, AES230, AES320, AES308, AGR330, LAW208, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BIO104, BNS233, AES395, AES397, AES399, AES261, AES230, AES309, AGR330, AES339, MSM334   C4 Solve problems of design and interpretation. AGR104, BNS233, AES302, AES309, AES302, AES302, AES309, AES302, AES302, AES309, AES302, AES302, AES309, AES302, AES302, AES309, AES304, AES304, AES303, AES309, C4			
CMS301, BNS326   B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BI0102, BI0104, BI0105, BI0106, BNS233, AES395, AES397, AES261, AES230, AES217, AES261, AES230, AES260, AES395, AES395, AES395, AES395, AES395, AES395, AES395, AES260, AES2230, AES260, AES2230, AES240, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BI0102, AES243, AES395, AES327, BNS233, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES327, BNS334, AES395, MST204, AES210, LAW253, CMS301, AES377, AES309, AES261, AES230, AES320, AES377, BI0102, BI0105, AES264, AES277, BI0102, BI0105, AES264, AES237, AES395, MST204, AES210, AES330, AES339, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BI0102, BI0105, AES264, AES277, BI0203, BI0204, BNS233, AES395, AES397, AES399, AES261, AES230, AES320, AES330, AES339, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BI0102, BI0104, BI0105, BI030, AES320, AES302, BI0301, AES320, MSM334, ACGR330, AES309, AES302, BI0301, AES320, AES32			
B4 Experimental design: testing hypotheses, design of controlled experiments. AGR105, BIO102, BIO104, BNS233, AES395, AES397, AES261, AES230, AES217, AES261, AES230, AES217, AES261, AES230, AES260, AES264, AES264, AES264, AES264, AES264, AES264, AES264, AES264, AES277, BIO203, BIO102, AES243, AES264, AES270, DID20, AES264, AES270, DID20, AES264, AES270, AES395, MST204, AES270, AES270, AES320, AES300, AES37, AES395, MST204, AES270, AES320, AES370, AES370			
controlled experiments. BIO105, BIO106, BNS233, AES395, AES397, AES307, AES261, AES230, AES217, AES397, AES30, AES261, AES230, AES217, AGR112, BIO105, BIO106, AES240, AES397, AES397, AES397, AES397, AES397, AES390, AES300, A	<b>.</b>		
AES397, AES261, AES230, AES217, AGR112, BIO105, BIO106, AES395, AES261, AES230, AES260, AES395, AES261, AES230, AES260, AES395, AES261, AES230, AES260, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AG730, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, BIO102, AES243, AES308, AG730, LAW253, CMS301, AES317, AES302, AES320, AES308, AG730, LAW208, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AES100, BIO102, BIO104, BNS233, AES395, AES397, AES39, AES320, AES320, AES309, AGR30, AES320, AES320, AES309, AGR30, AES320, AES320, AES309, AGR30, AES320, AES320, AES309, ACM330, AES320, AES320, AES309, ACM330, AES320, AES330, AES217, MST204, AES210, AES264, AES303, CMS301, AES320, AES302, AES309, ACM330, AES330, BIO104, BIO105, BIO102, BIO104, BIO104, BIO105, BIO104, BIO104, BIO105, AES220, AES277, BIO203, BIO204, BNS233, AES395, AES309, ACM330, AES320, IAES320, AES320, MSM338, MSM334, AGR330, AES309, AES320, AES330, AES3217, MST204, AES210, AES220, AES320, MSM338, MSM334, AGR330, AES309, AES320, AES320, AES320, MSM338, AES309, AES320, MSM338, AES300, AES320, MSM338, AES300, AES32	B4		
B5 Laboratory and analytical skills, including safety regimes. AGR112, BIO105, BIO106, AES330, AES260, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES243, AES2210, LAW253, CMS301, AES317, AES302, AES320, AES320, AES320, AES302, AES303, AES395, AES397, AES399, AES261, AES230, AES302, AES302, AES302, AES309, AES210, LAW2253, CMS301, BNS326, AES302, AES300, AES3		controlled experiments.	
regimes. AES395, AES261, AES230, AES260, AES264   C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES243, AES305, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES307, AES309, ACS301, AES230, AES309, ACS301, BNS326, AES302, AES300, AGR330, AES339, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BIO102, BIO104, BIO105, BIO104, BIO105, BIO104, BIO203, BIO204, BNS233, AES395, AES307, AES309, AES261, AES230, AES320, AES320, AES330, AES320, AES320, AES320, MSM334, AGR330, AES309, BIO204, BNS233, AES302, AES320, MSM334, AGR330, AES309, BIO105, BIO106, AES224, AES300, AES217, MST204, AES210, AES264, AES303, CMS301, AES320, BIO301, AES320, MSM334, AGR330, AES300, AES320, MSM334, AGR330, AES309, AES261, AES230, AES320, MSM334, AES300, AES320, MSM334, AES300, AES320, MSM334, AGR330, AES309, AES261, AES230, AES320, MSM334, AES300, AES300, MSM334, AES300, AES320, MSM334, AES300, AES320, MSM334, AES300, AES320, MSM334, AES300, AES320, MSM334, AES320, AES330, AES300, AES320, MSM334, AES300, AES3300, AES3300, AES3300, AES3300, AES3300, AES320, MSM334,			
AES264   C1 The ability to handle data from a variety of disciplines.   AES100, BIO102, AES243, AES302, AES277, BNS233, AES395, MS7204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data.   BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES264, AES210, AES217, MS7204, AES210, AES264, AES303, CMS301, BNS226, AES302, AES309, AGR330, AES339, MSM334   C3 Critically appraise data in order to produce reasoned conclusions.   C3 Critically appraise data in order to produce reasoned conclusions.   AGR105, BIO102, BIO104, BES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES217, MS7204, AES210, AES264, AES303, CMS301, AES302, BIO301, AES220, MSM338, MSM334, AGR330, AES309   C4 Solve problems of design and interpretation.   BIO102, BIO104, BIO105, BIO106, AES243, AES261, AES230, AES320, MSM338, AES309, C4 Solve problems of design and interpretation.   C4 Solve problems of design and interpretation.   BIO102, BIO104, BIO105, BIO106, AES243, AES264, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES320, MSM338, AES300, AES320, MSM338, AES300, AES300, AES320, MSM338, AES302, BIO301, AES320, M	B5		
C1 The ability to handle data from a variety of disciplines. AES100, BIO102, AES243, AES262, AES277, BNS233, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334   C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES317, AES309, AES302, AES309, AES301, BNS226, AES230, AES309, AGR300, AES339, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BIO102, BIO104, BNS233, AES395, AES309, AES300, AES309, AES300, AES30		regimes.	<b>AES395,</b> <i>AES261, AES230, AES260,</i>
AES262, AES277, BNS233, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334C2The ability to interpret and effectively communicate quantitative data.AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES309, AGR330, AES339, MSM334C3Critically appraise data in order to produce reasoned conclusions.AGR105, BIO102, BIO104, BNS233, AES392, AES399, AES261, AES277, BIO105, BIO106, AES262, AES277, BIO105, BIO106, AES262, AES277, BIO105, BIO106, AES262, AES277, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES307, AES399, AES261, AES230, AES210, AES264, AES303, CMS301, AES202, BIO301, AES320, MSM334, AGR30, AES309,C4Solve problems of design and interpretation.BIO102, BIO104, BIO105, BIO106, AES225, MST204, AES210, AES230, AES309, AES261, AES230, AES309, AES261, AES230, AES309, AES309, AES261, AES230, AES309, AES261, AES230, AES309, AES309, AES309, AES309, AES261, AES230, AES220, MSM338, MSM334, AGR30, AES309, AES261, AES230, AES220, AES277, BIO203, BIO204, BNS233, AES395, AES230, AES309, AES261, AES230, AES220, AES277, BIO203, BIO204, BNS233, AES395, AES309, AES261, AES230, AES220, AES270, AES264, LAW233, BNS326, AES302, BIO301, AES220, MSM338, AES308, AES309, AES220, MSM334			AES264
AES262, AES277, BNS233, AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334C2The ability to interpret and effectively communicate quantitative data.AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES309, AGR330, AES339, MSM334C3Critically appraise data in order to produce reasoned conclusions.AGR105, BIO102, BIO104, BNS233, AES392, AES399, AES261, AES277, BIO105, BIO106, AES262, AES277, BIO105, BIO106, AES262, AES277, BIO105, BIO106, AES262, AES277, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES307, AES399, AES261, AES230, AES210, AES264, AES303, CMS301, AES202, BIO301, AES320, MSM334, AGR30, AES309,C4Solve problems of design and interpretation.BIO102, BIO104, BIO105, BIO106, AES225, MST204, AES210, AES230, AES309, AES261, AES230, AES309, AES261, AES230, AES309, AES309, AES261, AES230, AES309, AES261, AES230, AES309, AES309, AES309, AES309, AES261, AES230, AES220, MSM338, MSM334, AGR30, AES309, AES261, AES230, AES220, AES277, BIO203, BIO204, BNS233, AES395, AES230, AES309, AES261, AES230, AES220, AES277, BIO203, BIO204, BNS233, AES395, AES309, AES261, AES230, AES220, AES270, AES264, LAW233, BNS326, AES302, BIO301, AES220, MSM338, AES308, AES309, AES220, MSM334			
AES395, MST204, AES210, LAW253, CMS301, AES317, AES302, AES320, AES308, AGR330, LAW208, MSM334C2The ability to interpret and effectively communicate quantitative data.AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES309, AGR330, AES339, MSM334C3Critically appraise data in order to produce reasoned conclusions.AGR105, BIO102, BIO104, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES309, AGR330, AES339, MSM334C3Critically appraise data in order to produce reasoned conclusions.AGR105, BIO102, BIO104, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES307, AES399, AES261, AES230, AES309, AES261, AES230, AES210, AES264, AES230, MSM338, AES309, AES225, MST204, AES210, AES264, IAES230, AES320, BIO301, AES225, MST204, AES210, AES264, IAES230, AES320, BIO301, AES220, MSM338, AES300, AES302, BIO301, AES220, MSM338, AES300, AES300, AES220, MSM338, AES300, AES300, AES220, MSM338, AES300, AES300, AES220, MSM338, AES300, AES300, AES220, MSM338, AES300, AES300, AES320, MSM334, AGR330, LAW208, MSM334	C1	The ability to handle data from a variety of disciplines.	AES100, BIO102, AES243,
C2 The ability to interpret and effectively communicate quantitative data. AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES307, AES399, AES261, AES264, AES303, CMS301, BNS326, AES302, AES309, AGR330, AES339, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BIO102, BIO104, BIO104, BIO104, BIO104, BIO104, BIO105, BIO104, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES307, AES399, AES261, AES230, AES339, MSM334   C3 Critically appraise data in order to produce reasoned conclusions. AGR105, BIO102, BIO104, BIO104, BIO104, BIO105, BIO104, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES307, AES309, AES261, AES230, AES320, MSM334, AGR330, AES309   C4 Solve problems of design and interpretation. BIO102, BIO104, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES307, AES399, AES261, AES230, AES320, MSM384, AES308, AES309, AES320, MSM384, AES308, AES309, AES320, MSM384, AES308, AES309, AES320, MSM384, AES308, AES309, AES320, MSM384, AES3008, AES309, AES320, MSM384, AES308, AES309, AES320, MSM384, AES308, AES309, AES320, MSM384, AES308, AES309, AES320, AES330, AES330, AES330, AES330, AES320, AES320, AES330, AES330, AES330, AES320, AES330, AES3302, BIO301, AES320, MSM384, AES308, AES3302, AES330, AES330, AE			AES262, AES277, BNS233,
AES308, AGR330, LAW208, MSM334C2The ability to interpret and effectively communicate quantitative data.AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES201, AES200, AES309, AGR330, AES399, AES201, AES200, AES309, AGR330, AES399, MSM334C3Critically appraise data in order to produce reasoned conclusions.AGR105, BIO102, BIO104, BIS233, AES395, AES397, AES399, AES261, AES230, AES397, AES399, AES261, AES230, AES307, AES399, AES261, AES230, AES307, AES399, AES261, AES230, AES307, AES399, AES261, AES264, AES303, CMS301, AES302, BIO301, AES320, MSM338, MSM334, AGR330, AES309C4Solve problems of design and interpretation.BIO102, BIO104, BIO105, BIO106, AES243, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES309, AES309, AES309, AES309, AES309, AES261, AES230, AES320, MSM338, MSM334, AGR330, AES309, AES261, AES230, AES320, MSM338, MSM334, AGR330, AES309, BIO104, BIO105, BIO106, AES243, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES320, MSM338, MSM334, AGR330, AES309, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES220, MSM338, AES302, BIO301, AES320, MSM338, AES308, AES309, AGR330, LAW208, MSM334			<b>AES395,</b> <i>MST204, AES210, LAW253,</i>
C2The ability to interpret and effectively communicate quantitative data.AES100, AGR112, AGR105, BIO102, BIO105, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES201, AES230, AES309, AGR330, AES210, AES202, AES309, AGR330, AES339, MSM334C3Critically appraise data in order to produce reasoned conclusions.AGR105, BIO102, BIO104, BNS233, AES395, AES309, AGR330, AES230, AES277, BIO203, BIO204, BNS233, AES395, AES397, AES399, AES261, AES230, AES307, AES399, AES261, AES230, AES307, AES399, AES261, AES230, AES303, CMS301, AES302, BIO301, AES320, MSM338, MSM334, AGR330, AES309C4Solve problems of design and interpretation.BIO102, BIO104, BIO105, BIO106, AES262, AES277, BIO203, BIO204, BNS233, AES395, AES320, MSM338, MSM334, AGR330, AES309C4Solve problems of design and interpretation.BIO102, BIO104, BIO105, BIO106, AES225, MST204, AES210, AES230, AES327, AES399, AES261, AES230, AES327, AES399, AES261, AES230, AES327, BIS326, AES302, BIO301, AES320, MSM338, AES308, AES309, AES320, MSM338, AES308, AES309, AGR330, LAW208, MSM334			CMS301, AES317, AES302, AES320,
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AGR330, LAW208, MSM334			
D1 Summariae and communicate in writing and workelly in a AES100 ACD112 ACD105			AGK330, LAW208, MSM334
	D1	Summarise and communicate in writing and verbally in a	AES100, AGR112, AGR105,
manner appropriate to the target audience. <b>BIO102, BIO105, BIO106, AES243,</b>		manner appropriate to the target audience.	
AES262, AES277, BIO203, BIO204, DNG222, AEG205, AEG207			
BNS233, AES395, AES397,			BNS255, AES595, AES397,

		<b>AES399,</b> <i>AES261, AES230, AES217,</i>
		AES260, MST204, AES210, AES264,
		LAW253, AES303, CMS301, BNS326,
		AES302, BIO301, AES320, AES309,
		LAW208, MSM334
D2	Use information sources effectively.	<b>BIO102, BIO106, BIO203, BIO204,</b>
		AES395, AES397, AES399,
		CMS301, BNS326, AES311,
		AES302,BIO301, AES320, MSM334,
		MSM338, AGR330, LAW208
D3	Work both independently and as an effective member of	BIO105, BIO106, AES243, AES262,
	a team.	AES277, BIO204, AES395,
		<b>AES397, AES399,</b> <i>AES261, AES230,</i>
		MST204, CMS301, AES302, AES320,
		AES309, LAW208, MSM334
D4	Plan effectively: handle logistical constraints, use a Gantt	Stage 1, Stage 2, Stage 3, BIO204,
	Chart and organise one's own learning according to an	BNS233, AES395, AES397,
	explicit strategy.	<b>AES399,</b> <i>MST204, CMS301, AES302,</i>
		AES320, AES309, LAW208, MSM334
D5	Problem-solve.	AES100, AGR112, AGR105,
		BIO102, BIO105, BIO106, AES243,
		AES262, AES277, BIO203, BIO204,
		BNS233, AES395, AES399, AES261,
		AES230, AES225, MST204, LAW253,
		AES264, AES210, AES303, BNS326,
		AES320, AES308, AES309, AGR330,
		LAW208, MSM334
D6	Apply the scientific method.	BIO102, BIO104, BIO105, BIO106,
		AES262, BNS233, AES395,
		<b>AES397,</b> <i>AES261, AES230, AES260,</i>
		BNS326, MSM338, AES339
D7	Use Computer and Information Technology effectively.	AGR105, BIO102, BIO106,
		BIO203, BIO204, BNS233, AES395,
		<b>AES397. AES399,</b> <i>AES217, AES260,</i>
		MST204, AES264, AES303, CMS301,
		BNS326, AES302, AES309, MSM334

## 12 Criteria for Admission:

(from http://www.ncl.ac.uk/undergraduate/course/C150/requirements)

# A/AS Levels and AVCE Qualifications

BBC/BCC from 18 units, including a minimum of 12 units from 6- or 12-unit qualifications and preferably including A level Biology and another science subject (which may be Geography). GCSE Mathematics and Chemistry (or Dual Award Science)required (minimum grade C) if not offered at a higher level.

# Scottish Qualifications

AABB/ABBB including Biology and another science subject. Mathematics 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 30 points with Biology and/or Geography 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

ABBBB at Higher Level. Biology required, and Mathematics and another science subject (which may be Geography)preferred.

# Access Qualifications

For applicants offering Access to HE courses, modules in Biological Sciences are essential and Geographical and Environmental Sciences are desirable (three modules at Credit grade for HEFC).

# **BTEC** National Diploma

BTEC National Diploma in Applied Science, Health Studies or a land-based subject with substantial science content, at overall DMM grade.

**Please Note that unless otherwise indicated**, all candidates with qualifications other than those specifically listed are considered on an individual basis.

# **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 <a href="http://www.ncl.ac.uk/international/coming\_to\_newcastle/orientation.phtml">http://www.ncl.ac.uk/international/coming\_to\_newcastle/orientation.phtml</a>).

## 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 <u>http://www.ncl.ac.uk/undergraduate/support/tutor.phtml</u>. 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 <a href="http://www.ncl.ac.uk/undergraduate/support/welfare.phtml">http://www.ncl.ac.uk/undergraduate/support/welfare.phtml</a>.

#### 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 <u>http://www.ncl.ac.uk/undergraduate/support/disability.phtml</u>.

#### 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 bit is necessarily subject-specific, so either

*This programme is accredited by the Institute of <Name of Accrediting body>.* or

There is no suitable professional body accrediting programmes of this nature.

or

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 <u>http://www.ncl.ac.uk/internal/academic-quality/qualityhome.htm#2.</u>

#### **15** Regulation of Assessment:

#### Pass Marks

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

#### Course Requirements

Progression is subject to the University's Undergraduate Progress Regulations (<u>http://www.ncl.ac.uk/calendar/university.regs/ugcont.html</u>) and Undergraduate Examination Conventions (<u>http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.html</u>). 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 <?:?>.

#### Common Marking Scheme

The University employs a common marking scheme, which is specified in the Undergraduate Examination Conventions (<u>http://www.ncl.ac.uk/calendar/university.regs/ugcont.html</u>), 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 is due for Internal Subject Review in Semester 2 of 2005/06

Previous QAA Reports

This programme received a QAA Subject Review in April 1998 and achieved a score of 22/24, as part of the Agriculture, Forestry and Agricultural Sciences Unit of Assessment (See http://www.qaa.ac.uk/revreps/subjrev/subjrev\_inst\_index.asp?instID=H-0154)

This specification provides a concise summary of the main features of the Environmental Biology degree 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 School of Biology (see http://www.ncl.ac.uk/biol/undergrad/environment/)

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