

## PROGRAMME SPECIFICATION



1	<b>Awarding Institution</b>	Newcastle University
2	<b>Teaching Institution</b>	Newcastle University
3	<b>Final Award</b>	BSc (Hons)
4	<b>Programme Title</b>	Biology (Component)
5	<b>UCAS/Programme Code</b>	CF11 – Biology and Chemistry CC18 – Biology and Psychology
6	<b>Programme Accreditation</b>	N/A
7	<b>QAA Subject Benchmark(s)</b>	Biosciences
8	<b>FHEQ Level</b>	Honours
9	<b>Date written/revised</b>	September 2007

### 10 Programme Aims

The programme aims:

- 1 To provide a 50% component of a Joint Honours degree which gives a balanced view of contemporary biological theory and associated practical skills.
- 2 To recruit able and well-motivated students
- 3 To introduce key disciplines underpinning the understanding of biology, such as biochemistry, genetics, ecology and evolution.
- 4 To develop students' intellectual and key skills relevant to work in a wide variety of careers, including the ability to communicate effectively, employ IT and library resources, use maths and statistics to analyse data, prioritise work to meet deadlines and to work independently and in teams to solve problems..
- 5 To provide a curriculum enhanced by an active research environment that will encourage critical thinking.
- 6 To stimulate an informed interest in biology and engender an awareness of how current developments in biology affect the overall well-being of our planet and society.
- 7 To lead to a qualification which meets the criteria of the Honours level of the National Qualifications Framework for England, Wales and Northern Ireland (FHEQ)
- 8 To provide an environment within which students can enjoy and be enthused by their learning experience.

### 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 Biosciences.

#### Knowledge and Understanding

On completing the programme students should:

- A1 A knowledge of biology from the molecular to the community level.
- A2 An understanding of the functioning of organisms at the physiological and biochemical levels
- A3 A knowledge of the diversity and evolution of living organisms and knowledge of the principles underlying classification phylogeny and biogeography
- A4 An understanding of ecology, with emphasis on biological and population responses to pollution and climate change and to conservation issues.
- A5 An understanding of genetics at both the population and molecular levels.
- A6 An awareness of selected current developments in biology and an appreciation of the broader impact these may have on society and the ability to apply such knowledge.

<b>Teaching and Learning Methods</b>
<p>A1 – A6 are principally imparted through lectures, which are enhanced and supplemented with co-ordinated practical work or additional self-paced learning delivered by means of appropriate CAL tutorials. Many of the lecture courses at Stage 3 are particularly important in delivering A6 as they provide knowledge at the 'cutting edge' in the field.</p> <p>Throughout the taught component of the course, students are encouraged and expected to engage in independent reading, and are supported in this by the provision of reading lists, handouts and access to library and web-based resources. Stage 1 and part of Stage 2 are supported by a recommended text and associated on-line learning resources, <i>Life, the Science of Biology</i> (Sinauer/Freeman).</p>
<b>Assessment Strategy</b>
<p>Assessment is partly by way of unseen written examinations (essay-type questions, short answer questions, problem-solving questions and MCQ as appropriate) and partly by way of coursework. Most modules at stages 1 and 2 include coursework, thus ensuring that elements of formative, as well as summative, assessment and a variety of assessment methods are employed. At stage 3 the distribution of exam-assessed and in-course assessed work is more polarised between modules, though as at stages 1 and 2, each form a major part of the whole stage 3 assessment.</p>
<b>Intellectual Skills</b>
<p>On completing the programme students should be able to:</p> <p>B1. Demonstrate the use of the scientific method by formulating and testing hypotheses and to identify key data which allow such tests to be made.</p> <p>B2. Interpret and effectively summarise quantitative data including appropriate interpretation and statistical analysis.</p> <p>B3. Critically assess the value and limitations of existing information on a given subject and produce critical reviews of such information.</p>
<b>Teaching and Learning Methods</b>
<p>Intellectual skills B1 and B2 are developed in the statistical and quantitative techniques modules at Stages 1 and 2. These are then further developed at stages 2 and 3 particularly during project work either within modules (Biology Field Course &amp; Collection Project, B1-3) or during the final year Library Project and Talk (B3).</p> <p>Students acquire B1-B2 skills in the Statistical Methods module at Stage 1 and the Quantitative Techniques module at Stage 2. The critical skills are also practiced in the process, and in the course work and preparations for formal examinations for other stage 3 modules.</p>
<b>Assessment Strategy</b>
<p>Intellectual skills B1 and B2 are mainly assessed by means of coursework (laboratory reports, workbooks, data analysis problems). The ability to critically assess and review existing information is tested by the major library project undertaken during Stage 3 (B3). B3 is also tested to varying extents in formal examinations for specific Stage 3 modules.</p>
<b>Practical Skills</b>
<p>The programme provides opportunities for students to develop and demonstrate::</p> <p>C1. Laboratory and analytical skills including the use of key equipment, instrument calibration and recording measurements with appropriate precision.</p> <p>C2 The ability to use keys and field guides to identify plants and animals.</p> <p>C3 Appropriate field skills: how to observe, record, and sample plants and animals in the wild.</p>
<b>Teaching and Learning Methods</b>
<p>Laboratory skills (C1) are widely developed in practical components, not infrequently large, of subject specific modules. The analytical and statistical aspects of C1 are addressed through specialised modules in stages 1 and 2 and are an important component in many laboratory</p>

classes (stages 1 and 2) and in field and project modules (stage 3). The ability to develop identification (C2) and field skills (C3) are developed by specific modules (e.g. Entomology) and the compulsory field course module.

Students are encouraged to acquire practical laboratory skills (C1) by the monitored attendance at laboratory classes. Students can further develop the practical and statistical skills they have acquired, through their application in final year field course project work. The learning of C2 and C3 is particularly reinforced in the compulsory Biology Field Course & Collection Project module.

#### **Assessment Strategy**

All practical skills are assessed by means of coursework reports, posters, and/or group project work, usually undertaken within the modular context.

#### **Transferable/Key Skills**

On completing the programme students should be able to:

- D1. Communicate by means of well prepared, clear and confident presentations and concisely written documents and follow the accepted conventions for scientific communication.
- D2. The ability to use library and other information sources efficiently and appropriately
- D3. The ability to use IT resources skilfully and appropriately
- D4. The ability to plan, organise and prioritise work activities in order to meet deadlines
- D5. The ability to work independently, with initiative, and also in teams
- D6. The ability to solve problems and produce reasoned solutions, including quantitative numerical analyses.

#### **Teaching and Learning Methods**

Key skills are formally taught in a number of specific compulsory modules which cover presentation and scientific writing skills (D1); library and other information skills (D2); and IT skills (D3). Problem solving skills (D6) are encouraged in many laboratory and field work classes at all stages. Management of workload in order to meet deadlines (D4) is promoted by means of a strict coursework timetable (students are encouraged to complete their own Gantt charts which are included in the course handbooks), whilst teamworking skills (D5) are developed by group exercises in a number of modules. Many of these and other modules also provide opportunities for students to improve their problem solving abilities (D6) and to extend their communication, library, IT, and time management skills (D1-D4).

The learning of these skills by practice with or without assessment is embedded in the degree at all Stages and in the great majority of modules, though there are also specific modules at each stage that either teach or practice many of these skills. Students must submit regular reports on their laboratory work, as well as dissertations and literature reviews; individual verbal presentations are assessed; formative feedback is given. The development of D1-6 is a key part of project and field work activities.

#### **Assessment Strategy**

Key skills are specifically assessed in the specialised skills or library project modules, but are also indirectly assessed through course work and examinations in most modules. Communication (D1), library (D2) and IT (D3) skills, and the ability to meet deadlines (D4) are indirectly assessed by coursework (scientific/technical reports, a poster, literature reviews, essays etc.). Similarly, ability to work independently (D5) implicitly influences the level of achievement in many assessed components; initiative (D5) is implicitly assessed in project activities. Problem solving is explicitly assessed at Stage 2 (Quantitative techniques) and implicitly at Stage 3 during the Field Course and Collection Project.

## **12 Programme Curriculum, Structure and Features**

### **Basic structure of the programme**

**A Programme Features**

This component is 50% of a three year full time programme. Modules to the value of 60 credits are taken in each year or stage and 10 credits are equivalent to 100 hours of study time (contact time plus private study). Modules can vary in size being worth either 10 or 20 credits.

**B Programme Structure****STAGE 1**

Module	Semester 1 Credits	Semester 2 Credits
ACE1013 Introduction to Genetics * #	10	
ACE1019 Introductory Biochemistry for Biologists * #	10	10
BIO1001 Cell Biology *	10	
BIO1004 Microbiology 1 *	10	
BIO1005 #	10	
BIO1006 Ecology 1 * #		10

\* Applicable to CF11

# Applicable to CC18

**STAGE 2**

Students take the following compulsory modules:

CF11	Semester 1 credits	Semester 2 credits
BIO2010 Molecular Biology & Genomics	10	
BIO2015 Biotechnology 1	10	
BIO2017 Microbiology 2		10

**Plus 30 credits of optional modules from the list below:**

BIO2005 Practical Biochemistry		10
BIO2007 Vertebrate Biology		10
BIO2014 Animal Physiology		10
BIO2016 Metabolism	10	
MST2010 Animal Development		10

CC18	Semester 1 credits	Semester 2 Credits
Option 1 <u>Option 1: Functional Animal Biology</u>		
BIO2007 Vertebrate Biology		10
BIO2008 Population Genetics		10
BIO2010 Molecular Biology & Genomics	10	
BIO2013 Animal Behaviour	10	
BIO2014 Animal Physiology	10	
MST2010 Animal Development		10
OR <u>Option 2: Behaviour and Ecology</u>		

BIO2002 Biodiversity and Conservation		10
BIO2006 Entomology	10	
BIO2007 Vertebrate Biology		10
BIO2009 Ecology of Populations & Communities		
BIO2010 Molecular Biology & Genomics	10	
BIO2013 Animal Behaviour	10	

### STAGE 3

CF11	Semester 1 credits	Semester 2 credits
BIO3015 Social Impact of Biology		10
BIO3019 Genomics	10	
BIO3022 Residential Field Course	10	

<i>Students select modules to total 30 credits from the following list:</i>		
BIO3001 Animal Ecophysiology	10	
BIO3002 Animal Population Dynamics	10	
BIO3006 Plant Animal Interactions		10
BIO3014 Evolution and Behaviour	10	
BIO3016 Mechanisms of Behaviour		10
BIO3018 Biotechnology 2	10	
BIO3020 Bioremediation		10
BIO3027 Microbiology 3		10
CC18	Semester 1 credits	Semester 2 Credits
BIO3015 Social Impact of Biology		10
BIO3019 Genomics	10	
BIO3022 Residential Field Course	10	
<i>And either</i>		
<u>Option 1: Functional Animal Biology</u>		
BIO3001 Animal Ecophysiology	10	
BIO3006 Plant Animal Interactions		10
BIO3016 Mechanisms of Behaviour		10
<i>Or</i>		
<u>Option 2: Behaviour and Ecology</u>		
BIO3002 Animal Population Dynamics	10	
BIO3012 Conservation Biology Issues		10
BIO3014 Evolution and Behaviour	10	

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

**Programme regulations (link to on-line version)**

CC18: <http://www.ncl.ac.uk/regulations/programme/2007-2008/programme/cc18.php>

CF11: <http://www.ncl.ac.uk/regulations/programme/2007-2008/programme/cf11.php>

<b>13 Criteria for admission</b>
----------------------------------

See overarching Joint Honours admissions criteria.
--

<b>14 Support for Student Learning</b>
--

<i>Induction</i>
------------------

<p>The first week of the first term/semester is an Induction Week with no formal teaching. During this period all students attend an induction programme in which they will be given detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc. In particular all new students will be given general information about the School and their programme, 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>)</p>
---

<i>Study skills support</i>
-----------------------------

<p>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.</p>
---

<i>Academic support</i>
-------------------------

<p>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.</p>
--

<i>Pastoral support</i>
-------------------------

<p>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 <a href="http://www.ncl.ac.uk/undergraduate/support/tutor.phtml">http://www.ncl.ac.uk/undergraduate/support/tutor.phtml</a> 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></p>
--

<i>Support for students with disabilities</i>
---

<p>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. For further details see <a href="http://www.ncl.ac.uk/disability-support/">http://www.ncl.ac.uk/disability-support/</a></p>
--

<i>Learning resources</i>
---------------------------

<p>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 <a href="http://www.ncl.ac.uk/undergraduate/support/acfacilities.phtml">http://www.ncl.ac.uk/undergraduate/support/acfacilities.phtml</a></p>
---

<p>All new students whose first language is not English are required to take an English Language test in the Language Centre. Where appropriate, in-session 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 exchange. See <a href="http://www.ncl.ac.uk/undergraduate/support/facilities/langcen.phtml">http://www.ncl.ac.uk/undergraduate/support/facilities/langcen.phtml</a></p>
--

<b>15 Methods for evaluating and improving the quality and standards of teaching and learning</b>
---

<i>Module reviews</i>
-----------------------

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. Further information is at [www.thestudentsurvey.com/](http://www.thestudentsurvey.com/) 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, see [http://www.ncl.ac.uk/aqss/qsh/internal\\_subject\\_review/index.php](http://www.ncl.ac.uk/aqss/qsh/internal_subject_review/index.php)

#### *Accreditation reports*

#### *Additional mechanisms*

#### Review Mechanisms:

Student Questionnaires  
Degree Programme Review  
Internal Subject Review  
QAA Academic Review

#### Committees For Monitoring Quality

Faculty Board for Co- and Multi-disciplinary Degree Programmes  
Co- and Multi-disciplinary Staff-Student Committee  
Awards Board for Co- and Multi-Disciplinary Degree programmes  
Subject Area Boards of Studies  
Subject Area Boards of Examiners  
Subject Area Staff-Student Committees  
Faculty Teaching and Learning Committee  
University Teaching and Learning Committee

## **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 (<http://www.ncl.ac.uk/calendar/university.regs/ugcont.pdf>) and Undergraduate Examination Conventions (<http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.pdf>). 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.

Progression is subject to the University's Masters Degree Progress Regulations, Taught and Research (<http://www.ncl.ac.uk/calendar/university.regs/tpmdepr.pdf>) and Examination Conventions for Taught Masters Degrees (<http://www.ncl.ac.uk/calendar/university.regs/tpmdeprexamconv.pdf>). Limited compensation up to 40 credits of the taught element and down to a mark of 40 is possible and there are reassessment 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 for Stages 2 and 3 is 1:1.

### *Common Marking Scheme*

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

	<b>Honours</b>	<b>Non-honours</b>
<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/>)

The School Brochure (contact [enquiries@ncl.ac.uk](mailto: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 (Comp/Core in Bold)
A1 Knowledge of biology from the molecular to the community level.	<b>BIO1005, BIO1006, BIO2010, BIO2007</b> , BIO2008, MST2010, BIO2006, BIO3001, BIO3016, BIO3002, BIO3012
A2 An understanding of the functioning of organisms at the physiological and biochemical levels.	<b>BIO2010</b> , MST2010, BIO3001, BIO3016
A3 A knowledge of the diversity and evolution of living organisms and knowledge of the principles underlying classification phylogeny and biogeography	<b>BIO1005, BIO2007</b> , BIO2008, BIO2002, <b>BIO3025</b> .
A4 An understanding of ecology, with emphasis on biological and population responses to pollution and climate change and to conservation issues.	<b>BIO1006</b> , BIO2008, BIO2002, BIO3002, BIO3012
A5 An understanding of genetics at both the population and molecular levels.	<b>ACE1013, BIO2010, BIO2007</b> , BIO2008, BIO3012
A6 An awareness of selected current developments in biology and an appreciation of the broader impact these may have on society and the ability to apply such knowledge.	<b>BIO3015</b> , BIO3001, BIO3016, BIO3002, BIO3012
B1 Laboratory and analytical skills including the use of key equipment, instrument calibration and recording measurements with appropriate precision.	<b>ACE1019, BIO2010, BIO2007, BIO2011</b>
B2 The ability to use keys and field guides to identify plants and animals.	<b>BIO3025</b>
B3 Appropriate field skills: how to observe, record, and sample plants and animals in the wild.	<b>BIO3025</b>
C1 Demonstrate the use of the scientific method by formulating and testing hypotheses and to identify key data which allow such tests to be made.	<b>MAS1401, BIO2011, BIO3025</b>
C2 Interpret and effectively summarise quantitative data including appropriate interpretation and statistical analysis.	<b>MAS1401, BIO2011, BIO3025</b>
C3 Critically assess the value and limitations of existing information on a given subject and produce critical reviews of such information.	<b>MAS1401, BIO2011, BIO3025</b>
D1 Communicate by means of well prepared, clear and confident presentations and concisely written documents and follow the accepted conventions for scientific communication.	<b>BIO3015, BIO3025</b>
D2 The ability to use library and other information sources efficiently and appropriately	<b>BIO3025</b>
D3 The ability to use IT resources skilfully and appropriately	<b>MAS1401, BIO2011, BIO3025</b>
D4 The ability to plan, organise and prioritise work activities in order to meet deadlines	All modules
D5 The ability to work independently, with initiative, and also in teams	<b>BIO2011, BIO3025</b>
D6 The ability to solve problems and produce reasoned solutions, including quantitative numerical analyses	<b>MAS1401, BIO2011, BIO3025</b> , BIO3002, BIO3012