PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	BSc
4	**Programme Title**	Biology and Chemistry Biology and Psychology
5	**UCAS/Programme Code**	CF11, CC18
6	**Programme Accreditation**	N/A
7	**QAA Subject Benchmark(s)**	Organismal Biology
8	**FHEQ Level**	Honours
9	**Date written/revised**	February 2008

10 Programme Aims

1 To develop student's knowledge and understanding of the fundamentals of Biology and associated practical and field skills.
2 To introduce disciplines underpinning the understanding of biology, such as biochemistry, genetics, ecology and evolution.
3 The course will progressively develop student's skills and interests. By Stage 3 there will be opportunity to study more specialised aspects of the subject and carry out independent investigative and analytical studies in greater depth.
4 To provide a Biology curriculum enhanced by an active research environment that will encourage critical thinking.
5 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.
6 To provide a flexible programme which meets much of the Quality Assurance Agency Benchmark Statements for 'Biosciences' within either an organismal biology or an ecology and behaviour stream.
7 To lead to a qualification which meets the criteria of the Honours level of the Framework for Higher Education Qualifications.
8 To provide an environment within which students can enjoy and be enthused by their learning experience.
9 To give awareness of new technologies and the skills and aptitudes needed for the development of a wide variety of careers, both within and without 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 Organismal Biology.

Knowledge and Understanding

On completing the programme students should:

A1 demonstrate an understanding of the functioning of animals at behavioural, physiological, biochemical and molecular levels, with particular reference to environmental adaptation.
A2 demonstrate a knowledge of the diversity of living organisms and knowledge of the principles underlying classification and understanding of phylogeny and evolution.
A3 demonstrate an understanding of genetics at both the population and molecular levels.
A4 demonstrate an understanding of *either* ecology and behaviour, with emphasis on biological and population responses to pollution and climate change and to conservation issues or organismal biology, with an emphasis on ecophysiology and neurobiology .
A5 demonstrate 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.

Teaching and Learning Methods

Teaching Strategy
A1 – A3 are principally imparted through lectures, which may be enhanced and supplemented with co-ordinated practical work and additional self-paced learning delivered by means of appropriate CAL tutorials.
A4 is delivered principally through lectures in two optional streams.
A5 is delivered mainly at Stage 3, where modules provide knowledge at the 'cutting edge' in the field.

Learning Strategy
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.

Assessment Strategy

Assessment is partly by way of unseen written examinations (essay-type questions, short answer questions, problem-solving questions 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.

Intellectual Skills

On completing the programme students should be able to:

B1 demonstrate the ability to use the scientific method by formulating and testing hypotheses and to identify key data which allow such tests to be made.
B2 demonstrate the ability to interpret and effectively summarise quantitative data including appropriate interpretation and statistical analysis.
B3 demonstrate the ability to critically assess the value and limitations of existing information on a given subject and produce critical reviews of such information.

Teaching and Learning Methods

Some cognitive skills are introduced at stage 1, mainly B2 but for example the concept of hypothesis testing (part of B1) is introduced in the statistical component of the Psychology programme. These are then further developed at stages 2 and 3 particularly during project work either within modules (such as Biology Field Course & Collection Project, B1-3) or during the final year Experimental Research Project (B1-3) or Biological Information Project (B2 and 3). The skills associated with B3 are also developed in the introductory tutorials associated with the Library Project and Talk at Stage 3.

Learning strategy

Students are encouraged to acquire B1-B2 skills in the statistical and experimental modules at Stage 1 and 2 as part of the Psychology programme. They then have to implement these skills as a key part of the Experimental Research project at Stage 3, by designing their own experiments and analysis strategy and then appraising the quality of the data collected (B1, B2). The critical B3 skills are also practiced in the process, and in the course work and preparations for formal examinations for other stage 3 modules.

Assessment Strategy

Cognitive skills B1 and B2 are mainly assessed by means of coursework (laboratory reports,

workbooks). The ability to critically assess and review existing information is tested by the major library project that are undertaken during Stage 3 (B3) and is also tested to varying extents in formal examinations for specific Stage 3 modules.

Practical Skills

On completing the programme students should be able to:

C1 demonstrate laboratory and analytical skills including statistical methods, the use of key equipment, instrument calibration and recording measurements with appropriate precision.
C2 demonstrate the ability to use keys and field guides to identify plants and animals.
C3 demonstrate appropriate field skills: how to observe, record, and sample plants and animals in the wild.

Teaching and Learning Methods

Teaching strategy

Laboratory skills (C1) are widely developed in practical components 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 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 a specific field course module (Field Course & Collection Project) which is run during the summer break after Stage 2.

Learning strategy

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

Assessment Strategy

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

Teaching and Learning Methods

Teaching strategy

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 (e.g. in the Stage 3 Biology Field Course & Collection Project). 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 application of these skills (D1-D6) is integral to the Stage 3 Experimental Research Project and Biological library project.

Learning strategy
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 C1-6 is a key part of project and fieldwork activities.

Assessment Strategy

Some key skills are specifically assessed in the specialised skills or library project modules, but many are 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 (C5) is implicitly assessed in project activities. Ability to work in teams is assessed indirectly where students work in groups in some laboratory and fieldwork classes.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

A. Programme Structure and Features

This is a three-year full-time modular programme consisting of 120 taught credit at each Stage (year). 10 credits are equivalent to 100 hours of study time (contact time and private study).

At Stages 1 and 2 the emphasis is on ensuring biologists receive a broadly based introduction to the subject, encompassing a wide range of subject areas.

At Stage 1 the compulsory module topics are Introductory Biochemistry for Biologists, Evolution, Genetics and Behaviour and Ecology .

At Stage 2 the compulsory modules include fundamental topics such as Introduction to Molecular Biology, Methods in Animal Behaviour and Vertebrate Evolution and Diversity. Students then select options from either and Animal Behaviour and Ecology stream or a Functional Biology of Animals stream. Each of these streams is continued at Stage 3.

At Stage 3 compulsory modules comprise Genomics and Social Impact of Biology. Students again select either the Animal Behaviour and Ecology stream or the Functional Biology of Animals stream and can choose either the Laboratory Workshop or the residential field course depending on their subject combination.

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

- Stage 3 field work modules. Opportunity to use University-owned field stations on the

coast and at Close House and external field stations as appropriate.

- Newcastle lies on the edge of Northumberland National Park and close to several internationally important National Nature Reserves, including the Farne Islands and Holy Island.
- Access to Botanic Garden and Natural History museum facilities.

Programme regulations (link to on-line version)

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

13 Criteria for admission

Entry qualifications

Students are admitted on an individual basis, with particular conditions tailored to each individual, but typical academic entry requirements are as listed below. Additional qualities such as initiative, organisational abilities, team working and demonstrable interest in or experience of the subject, as evident on the UCAS application, are desirable.

GCSE criteria

GCSE Mathematics and Chemistry (or Dual award Science) required if not offered at A or AS level.

A-Level, AVCE, AS Level

*** Depends on Faculty and JH Board ****BBB from 18 units including a minimum of 12 units (preferably in science subjects) from 6- or 12- unit qualifications, and preferably including A level Biology. AS level Biology will be considered if offered with other science A levels. Chemistry preferred at AS level if not offered at A level.

Alternative entry qualifications

Scottish Qualifications – AABB/BBBBC at Higher Grade, preferably including Biology, Chemistry and another science subject. Combinations of Highers and Advanced Highers accepted.
BTEC National Diploma – in Applied Science (Laboratory and Industrial Science) at overall Distinction grade.
Accessto HE courses – modules in Biological Science essential and Chemistry, Mathematics or Quantitative Methods desirable (all at Credit level for HEFC).
International qualification - International Baccalaureate 30 points with Higher Level Biology. The equivalent in other qualifications will be considered. Evidence of adequate English language skills (TOEFL score of 575 or an ELTS score of 6.5 or greater) are required.
Mature students - Applications considered on merit, although evidence of recent study is required. Relevant work experience is also useful.

Admissions policy/selection tools

Dealt with in overarching Joint Honours Degree Programme Specification.

Non-standard Entry Requirements

Dealt with in overarching Joint Honours Degree Programme Specification.

Additional Requirements

Dealt with in overarching Joint Honours Degree Programme Specification.

Level of English Language capability

Dealt with in overarching Joint Honours Degree Programme Specification.

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-sessional 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.

Accreditation reports

This programme is not accredited by any professional body.

Additional mechanisms

<u>Mechanisms for review</u>:
- Module questionnaires issued in alternate years: students evaluate every module by completing a questionnaire which is analysed and then considered by the Board of Studies.
- Teaching questionnaires issued in alternate years: issued to students on every module to comment on the teaching quality of academic staff, the results then being used in staff appraisals.
- Degree programme stage questionnaire issued annually to students on all stages of the programme; results are analysed by the Board of Studies.
- External Examiners' Reports.
- Annual review of progression statistics, degree class achievement, employment.
- Biennial Degree Programme Review.
- Surveys of recent graduates.
- Internal Subject review.
- QAA review.

<u>Committees responsible for monitoring quality and standards</u>
- Board of Studies, whose responsibility is to oversee quality and standard of the programme
- Staff/Student Committee
- Board of Examiners

- Faculty Teaching Committee
- University Teaching Committee

Mechanisms for feedback to students on matters of quality and standards:

- Staff/Student Committee
- Student representation on Boards of Studies
- Circulation via e-mail to all students of Staff-Student Committee minutes
- Stage meetings with DPD.

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 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

	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.

Annex

Mapping of Intended Learning Outcomes onto Curriculum/Modules

BSc Biology and Psychology

	Intended Learning Outcomes				
Module	Type	A	B	C	D
ACE1013	Compulsory	1,2,6	2,3		1
ACE1019	Compulsory	1,2	1,2	1	1,3,4
BIO1005	Compulsory	1, 3, 4, 6	1, 3		1, 2
BIO1006	Compulsory	1,4,5	1,2	3	1,3,4
BIO2010	Optional	1,2,6	3		1,2
BIO2007	Optional	1-4		1	1
BIO2014	Optional	1,2	2	1	1-4
MST2010	Optional	1,2		1	1,3,4
BIO3015	Compulsory	7	3		1
BIO3019	Compulsory	1,2,6,7	1,2		1,2
BIO3022	Compulsory	1,4,5	all	2,3	all
BIO3001	Optional	1,2	3		1,2,4
BIO3002	Optional	1,4	3		1
BIO3006	Optional	1,2,4,5,7			1
BIO3014	Optional	1,7	3		1-4
BIO3016	Optional	1,2	3		1,2
BIO2008	Optional	1,3,4,6	1,2	1,3	1,3,4
BIO2002	Optional	1,4,7	2,3		1
BIO2006	Optional	1-5,7	2	1	1,2,4
BIO2013	Optional	1,2,4	1,2	1	1,2,4
BIO3012	Optional	1,4,7	3		1,2

BSc Biology and Chemistry

	Intended Learning Outcomes				
Module	Type	A	B	C	D
ACE1013	Compulsory	1,2,6	2,3		1
ACE1019	Compulsory	1,2	1,2	1	1,3,4
BIO1001	Compulsory	1,2	2	1	1-3
BIO1004	Compulsory	1-3,5	2	1	1-4
BIO2010	Compulsory	1,2,6	3		1,2
BIO2015	Compulsory	1,2,6,7		1	1,3,4
BIO2017	Compulsory	1-5,7	2	1	1-4
BIO2005	Optional	1,2	1,2	1	1,3,4
BIO2007	Optional	1-4		1	1
BIO2014	Optional	1,2	2	1	1-4
BIO2016	Optional	1,2	2		1,3
MST2010	Optional	1,2		1	1,3,4
BIO3015	Compulsory	7	3		1
BIO3019	Compulsory	1,2,6,7	1,2		1,2
BIO3022	Compulsory	1,4,5	all	2,3	all
BIO3001	Optional	1,2	3		1,2,4
BIO3002	Optional	1,4	3		1
BIO3006	Optional	1,2,4,5,7			1
BIO3014	Optional	1,7	3		1-4
BIO3016	Optional	1,2	3		1,2
BIO3018	Optional	1,2,5-7	3		1-4
BIO3020	Optional	1,2,4,7	2,3		1,2
BIO3027	Optional	1,4,6,7	2,3		1,2,3