PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	BSc (Hons)
4	**Programme Title**	Biology and Psychology Biology and Chemistry
5	**UCAS/Programme Code**	CC18, CF11
6	**Programme Accreditation**	N/A
7	**QAA Subject Benchmark(s)**	Biosciences
8	**FHEQ Level**	Honours
9	**Date written/revised**	August 2012

10 Programme Aims

This specification for component subject in a Joint Honours in Science Programme must be read in conjunction with the over-arching Joint Honours Programme Specification and one other component subject specification in combinations as outlined above.

The programme aims to:

1 To develop a student's knowledge and understanding of the fundamentals of Biology and associated practical and field skills.
2 To introduce and develop disciplines underpinning the understanding of biology, such as biochemistry, genetics, molecular biology and statistical analysis.
3 To provide a Biology curriculum enhanced by an active research environment that will encourage critical thinking and provide an introduction to contemporary genomics approaches to biology.
4 To stimulate an informed interest in Biology and engender an awareness of how current developments in biology affect the overall wellbeing of our planet and society.
5 To provide a flexible programme which meets much of the Quality Assurance Agency Benchmark Statements for 'Biosciences'
6 To provide an environment within which students can enjoy and be enthused by their learning experience.
7 To raise awareness of new technologies and the skills and aptitudes needed for the development of a wide variety of careers involving biological sciences.

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 be able to:

A1 Demonstrate an understanding of the functioning of animals at physiological, cellular, biochemical and molecular levels, with particular reference to environmental adaptations.
A2 Demonstrate a knowledge of the diversity of living organisms and the biological processes that have evolved amongst diverse groups.
A3 Demonstrate an understanding of molecular genetics and the fundamental advances that have arisen from genome sequencing and genomic studies
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, organismal biology, with an emphasis on physiology, cellular and

molecular biology *or* molecular, microbial and biotechnology applications.

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 and particularly in the module on Social Impacts of Biology.

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, supporting material made available via the Blackboard VLE, handouts and access to library and other web-based resources. A key Stage 1 and 2 text, *Life: The Science of Biology,* provides an overall framework for learning that is particularly important for JH students, who may not have as comprehensive subject coverage as SH students.

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 within the fieldcourse or laboratory workshop modules (B1-3).

Learning strategy

Students are encouraged to acquire B1-B2 skills in the statistical and experimental modules at Stage 1 and 2. They then have to implement these skills as a key part of the the fieldcourse or laboratory workshop modules. 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 appropriate field and laboratory skills: how to observe, record, and sample in the wild and in the laboratory and design and conduct laboratory experiments.

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 laboratory workshop modules (stage 3). The ability to develop key laboratory and/or fieldwork skills (C2) are developed via fieldcourse and laboratory workshop modules which are 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 field and laboratory workshops.

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 laboratory and fieldcourse 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).

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 D1-6 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

This component is 50% of a three-year full-time programme.

At Stage 1 the emphasis is on ensuring biologists receive a broadly based introduction to the subject, encompassing a wide range of subject areas including the core components of genetics, biochemistry and statistical methods.

At Stage 2 the compulsory modules include fundamental topics such as an introduction to molecular biology and genomics with some options available which allow students to link their study of biology with the other half of their degree programme.

At Stage 3 students have a wide range of options allowing them to develop molecular, microbial and/or biotechnology aspects or focus on functional biology or ecology.

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

- Strong integration of lectures, practicals and fieldwork teaching throughout the degree.
- Newcastle's location on the edge of Northumberland National Park and close to several internationally important National Nature Reserves, including the Farne Islands and Holy Island means that field work venues re of extremely high quality.

Programme regulations (link to on-line version)

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

13 Criteria for admission

Presented in overarching Joint Honours Programme Specification.

14 Support for Student Learning

Presented in overarching Joint Honours Programme Specification.

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.

Integration at Programme level is presented in the overarching Joint Honours Programme Specification.

16 Regulation of assessment

Presented in overarching Joint Honours Programme Specification.

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)

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

	Intended Learning Outcomes				
Module	Type	A	B	C	D
ACE1013	Compulsory	1,3,4		1,2	1-5
BIO1019	Compulsory	1,3		1,2	1-6
BIO1002	Compulsory	1,3,5		1	1,2
BIO1005	Compulsory	1,2,3,4	3		2-5
BIO1006	Compulsory	2,3,4	3	2	2-5
BIO2007	Compulsory	1,2,4			1-5
BIO2013	Compulsory	1,2, 4	1, 2	1	1,2,4
BIO2002	Optional	1, 4,7	2,3		1
BIO2008	Optional	2,3	1,2,3	1,2	1-6
BIO2009	Optional	1,4	2		1,2
BIO2010	Optional	1,2,3			1-4
BIO2014	Optional	1,4			1-4
BIO2016	Optional	1,2,4			1-4
BIO2019	Optional	1,2,4			1-5
BIO3001	Optional	1,4		2	1-6
BIO3006	Optional	1,2,4			1-5
BIO3014	Optional	2,3,4			1-5
BIO3016	Optional	1,4			1-5
BIO3019	Optional	3,5			1-6
BIO3021	Optional	1,6	1,2,3	1	1-4
BIO3022	Optional	1,4,5	1,2,3	2,3	1-4