

## 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 and Chemistry
5	<b>UCAS/Programme Code</b>	CF11
6	<b>Programme Accreditation</b>	N/A
7	<b>QAA Subject Benchmark(s)</b>	Chemistry
8	<b>FHEQ Level</b>	Honours
9	<b>Date written/revised</b>	August 2013

### 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 provide an understanding of the essential principles and applications of organic, inorganic and physical chemistry
- 2 to equip students with skills that enable them to pursue careers in science-related disciplines and commerce.
- 3 to develop skills in the use of simple and more advanced chemical laboratory techniques and the application of these techniques to problems in contemporary science.

### 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 Chemistry.

#### Knowledge and Understanding

On completing the programme students should have knowledge and understanding of:

- A1 The three main branches of chemistry (inorganic, physical & organic)
- A2 Practical laboratory chemistry
- A3 Data analysis and numeracy
- A4 Spectroscopy and chemical characterisation

#### Teaching and Learning Methods

The acquisition of understanding and knowledge is by way of a combination of lectures, tutorials and workshops. Hand-on experience of chemistry is through practical classes consisting of carefully designed and tested experiments. Practical classes in Years 1 and 2 will introduce and allow the student to practice a variety of basic and sophisticated practical techniques. The experiments complement the material being taught in the lectures.

<b>Assessment Strategy</b>
The testing of knowledge is through a combination of unseen written examinations (A1, A3, A4) and oral examinations (A2).
<b>Intellectual Skills</b>
On completing the programme students should be able to:  B1 Critically evaluate data B2 Apply learnt knowledge to unseen problems B3 Analyse and interpret data
<b>Teaching and Learning Methods</b>
Intellectual skills are developed by means of the teaching and learning programme outlined above. All courses are designed to promote discussion of key topics and facilitate self-assessment. Courses encourage application of concepts within a laboratory framework. Tutorials and seminars back-up lecture material and facilitate small group participation in answering problems.
<b>Assessment Strategy</b>
Problem solving based examinations and oral responses to either problems or tasks (tutorials) are used to test skills B1 to B3. Write up of independent projects also allows students to demonstrate cognitive skills
<b>Practical Skills</b>
On completing the programme students should be able to:  C1 Work safely in a chemistry laboratory C2 Plan and undertake a practical or literature or non-laboratory based IT project
<b>Teaching and Learning Methods</b>
For skill C1 all students receive close supervision from a demonstrator or member of staff in the laboratory when performing experiments. A series of experiments are presented in the laboratory manual which outline safety issues, laboratory codes of practice and gives a detailed plan of operation. Students present results from their experiments in the form of a report. For skill C2 most students complete a practical project in an area of chemistry. They contribute to the planning and direction of the experimental work. They improve on their experimental technique and experience.
<b>Assessment Strategy</b>
The skills C1 are assessed by means of laboratory write-ups and oral examinations.
<b>Transferable/Key Skills</b>
On completing the programme students should be able to:  D1 Communicate and express clearly ideas both orally and in writing D2 Work in a group environment D3 Manage time and complete work to deadlines D4 Assess and form an opinion of other peoples work D5 Find information from a range of sources D6 Be self-reliant D7 Critically evaluate data and use when required.

<b>Teaching and Learning Methods</b>
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All laboratory courses require regular written work and the use of search libraries, the Internet and extensive bookwork. After marking practical write-ups and tutorial work the work is discussed with the students to develop their understanding as well as their powers of expression. Skills (D2 and D3) are learnt from working in group environments (groups vary in size from 2 to 6 depending on the courses), and handing in reports to set deadlines. Skills D4 and D5 are obtained from detailed literature searches. Skills D2 and D4 stem from small group tutorials and oral presentations to a peer audience. Solving of unseen problems helps develop skill D7.
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<b>Assessment Strategy</b>
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Oral examinations are used to assess a student's ability, both at one-to-one level and in a peer-reviewed atmosphere. Many of the outlined skills are assessed in written examinations by both the answers and the approach to question answering. Laboratory work in a research environment critically evaluates skills D2-D7.
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<b>12 Programme Curriculum, Structure and Features</b>
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<b>Basic structure of the programme</b>
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This component is 50% of a three-year full-time programme.
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Modules at Stage 1 and 2 allow students to develop their understanding from study at A-level (or equivalent). Stage 3 then allows for specialisation in a particular area of chemistry.
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<b>Key features of the programme (including what makes the programme distinctive)</b>
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The programme integrates lectures and practicals throughout and seeks to enthuse students to chemistry by educating them with a thorough understanding of organic, inorganic and physical chemistry, including importance and sustainability of the chemical sciences in an industrial, academic, economic, environmental and social context.
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<b>Programme regulations (link to on-line version)</b>
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<a href="http://www.ncl.ac.uk/regulations/programme/">http://www.ncl.ac.uk/regulations/programme/</a>
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<b>13 Criteria for admission</b>
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Presented in overarching Joint Honours Programme Specification.
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<b>14 Support for Student Learning</b>
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Presented in overarching Joint Honours Programme Specification.
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<b>15 Methods for evaluating and improving the quality and standards of teaching and learning</b>
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<i>Module reviews</i>
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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 Student-Staff 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.
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Integration at Programme level is presented in the overarching Joint Honours Programme Specification.
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<b>16 Regulation of assessment</b>
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Presented in overarching Joint Honours Programme Specification.
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In addition, information relating to the programme is provided in:
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The University Prospectus: <a href="http://www.ncl.ac.uk/undergraduate/">http://www.ncl.ac.uk/undergraduate/</a> )
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The School Brochure: <a href="mailto:enquiries@ncl.ac.uk">enquiries@ncl.ac.uk</a> )
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The University Regulations: <a href="http://www.ncl.ac.uk/calendar/university.regs/">http://www.ncl.ac.uk/calendar/university.regs/</a> )
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The Degree Programme Handbook
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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.
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### Mapping of Intended Learning Outcomes onto Curriculum/Modules

Intended Learning Outcome	Module codes (Comp/Core in Bold)
A1: Inorganic, Organic, Physical Chemistry	<b>CHY1101, CHY1201, CHY1301, CHY2101, CHY2301,</b>
A2: Practical laboratory chemistry	<b>CHY1101, CHY1301, CHY2101, CHY2301,</b>
A3: Data analysis and numeracy	<b>CHY1101, CHY1201, CHY1301, CHY2101, CHY2301,</b>
A4: Spectroscopy and chemical characterisation	<b>CHY1201, CHY1301, CHY2101, CHY2301,</b>
B1. Critically evaluate data	<b>CHY1101, CHY1301, CHY2101</b>
B2. Apply learnt knowledge to unseen problems	<b>CHY1101, CHY1201, CHY1301, CHY2101, CHY2301,</b>
B3. Analyse and interpret data	<b>CHY1201, CHY1301, CHY2101, CHY2301, ,</b>
C1: Work safely and independently in a laboratory	<b>CHY1101, CHY1201, CHY1301, CHY2101, , CHY2301,</b>
C2: Plan and undertake an advanced practical course or non-lab project	ACE3901
D1. Communicate and express ideas orally and in writing	<b>CHY1101, CHY1201, CHY1301, CHY2101, CHY2301,</b>
D2. Work in a group environment	<b>CHY1101, CHY1201, CHY1301, CHY2101, CHY2102, CHY2301,</b>
D3. Manage time and complete work to deadlines	<b>CHY1101, CHY1301, CHY2101, , CHY2301,</b>
D4. Assess and form an opinion of other people's work	<b>CHY2101</b>
D5. Find information from a range of sources	<b>CHY1101, CHY1201, CHY1301, CHY2101, , CHY2301,</b>
D6. Be self-reliant	<b>CHY1101, CHY1301, CHY2101, CHY2301,</b>
D7. Critically evaluate data and use when required	<b>CHY1101, CHY1201, CHY1301, CHY2101, CHY2301,</b>

*Optional Modules at Stage 3 allow the opportunity to develop and enhance a range of these learning outcomes with the exact profile dependent on the options selected by an individual student.*