**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 Programme accredited by** | |
| **4 Final award** | BSc (Honours) |
| **5 Programme** | Chemistry with Food Biology |
| **6 UCAS code** | FC14 |
| **7 Relevant QAA subject benchmarking group** | Chemistry |
| **8 Date of revision** | September 2004 |

## 9 Programme Aims

The degree programme aims to enthuse students to the chemistry and biology of food by educating them with an understanding of the essential theoretical and experimental chemistry and biology underlying food science and diet and its relation to health and disease; to provide training in problem solving, communication skills, numeracy and information technology, and to equip students with skills that enable them to pursue careers in the food industry, chemistry/biology related disciplines or other professions.

## 10 Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate intended learning outcomes in the following areas:

**A Knowledge and understanding of**

1 Organic chemistry; essentials of inorganic and physical chemistry; biology; food science, nutrition

2 Practical chemical and biological and food science

3 Data analysis and numeracy

4 Spectroscopy and chemical characterisation

→

### Teaching and learning methods and strategies

Students acquire understanding and knowledge (the complexity of which increases as the course progresses) through lectures, tutorials and workshops (**A1**). At stage 1, students learn basic, and at stage 2 more sophisticated, technical procedures by performing carefully designed and tested experiments. In the lab classes they also consolidate the learning started in lectures (**A1**, **A2**, **A4**) and improve on skill **A3**. At stage 3 the students learn research methods and specialist theoretical material by undertaking a project in a relevant area of chemistry (some of **A1**- **A4** depending on subject area). Throughout the period of the degree the student is expected to read around the taught material to supplement and strengthen the taught/learnt work. Reading lists are provided to facilitate this.

### Assessment methods and strategies

Knowledge and understanding is assessed through unseen written examinations and in-course assessments (**A1**, **A3**, **A4**), answers to questions in practical reports (**A2**) and oral examinations eg in the stage 3 project (**A2**).

**B Practical Skills – able to**

1 Work safely and independently in a chemistry and biology laboratory

2 Plan and undertake an advanced practical course or non-laboratory based Communicating Chemistry project

## Teaching and learning methods and strategies

Students receive close supervision from a demonstrator or member of staff in the laboratory when performing experiments to enable them to develop safe working practices and good techniques. Formative feedback is used to enable progressive development of these skills (**B1**). At stages 1 and 2 detailed experimental procedures are presented in laboratory manuals. At stage 3 the students learn to plan and design the experiments for themselves (**B2**), they work with a greater level of independence and perform more technically demanding procedures (practical projects). Students taking Communicating Chemistry projects similarly develop skills in planning a project and they also learn to design a web page (**B2**).

## Assessment methods and strategies

The skill **B1** is assessed by laboratory write-ups. At stage 3 the supervisor assesses the student's practical competence (**B1**). **B2** is assessed as part of the stage 3 project.

**C Cognitive skills - able to**

1 Critically evaluate data

2 Apply learnt knowledge to unseen problems

3 Analyse and interpret data

4 Independently plan and undertake a project

## Teaching and learning methods and strategies

Intellectual skills are developed by means of the teaching and learning programme outlined above. Students apply the concepts learnt in lectures to problems in laboratory work, seminars and tutorials. **C2** and **C3** are progressively developed and enable the students to solve challenging problems. Tutorials facilitate individual and group participation in answering problems. Students progressively develop skill **C1** through assignments and further develop skill **C1** and develop **C4** during their stage 3 project work.

## Assessment methods and strategies

Problem solving based examinations and oral responses to either problems or tasks (tutorials) are used to test skills **C1** - **C3**. Laboratory reports assess **C3**. Write up of independent stage 3 projects allows students to demonstrate, and be assessed in cognitive skills **C1** - **C4**

**D Key skills - able to**

1 Communicate and express clearly ideas both orally and in writing

2 Work in a group environment

3 Manage time and complete work to deadlines

4 Assess and form an opinion of other people's work

5 Find information from a range of sources

6 Be self-reliant

7 Critically evaluate data and use when required.

## Teaching and learning methods and strategies

The laboratory courses require the students to produce regular written work which is submitted to deadlines (**D1**, **D3**). Marked work is discussed with the students to develop their understanding as well as their powers of expression. A key skills module, 'Group Assignment' specifically addresses learning from, and working as part of, a group (**D2**). This module also includes information retrieval from a variety of sources and its evaluation, communication and presentation skills, assignments and reports (**D1, D3, D5**). Peer assessment is introduced in a practical course (stage 2 Organic) and the Group Assignment (**D4**). Students further develop skills **D1, D3 – D5** and practise skills **D6** and **D7** during the stage 3 project.

## Assessment methods and strategies

Written work and oral examinations are used to assess skill **D1**. Many of the skills are assessed in written examinations by both the answers and the approach to question answering. Key skills **D1, D2, D5** are addressed in the 'Group Assignment' module by peer assessment of individual contributions to the group effort and of a group presentation. The stage 3 project evaluates skills **D1** - **D7**

## 11. Programme Features, Curriculum and Structure

The degree programme is offered full-time (3 years). Arrows indicate the entry and progression points. All students take the compulsory modules outlined in each year. A number of option modules are open for each year of study and are chosen by the student in consultation with their personal tutor.
A special feature of the programme is the selection of modules in both biological and chemical science which enable the learning of both disciplines in the context of food science, a further feature is the choice of either a practical project or a 'Communicating Chemistry' project at stage 3.

**Stage 3**

**Compulsory Modules**

CHY310 Advanced Organic Chemistry (20)
CHY355 Advanced Inorganic Chemistry (20)
CHY320 Advanced Physical Chemistry (20)

**Options Modules**

CHY395 Communicating Chemistry Project (40)

CHY394 Advanced Practical Course (40)

**BSc (Honours) Degree**

Degree classification is determined by the averaging method and is based on stage 2 and 3 marks (1:2).

Outcomes developed and assessed: B1,2; C1-4; D1-7

Knowledge outcomes developed as indicated by module titles

**Stage 2**

**Compulsory Modules**

CHY201 Group Assignment in Chemistry or Medicinal Chemistry (20)
CHY204 Medicinal Plants (10)
CHY210 Organic Chemistry (20)
BNS209 Introduction to Human Nutrition (10)
BNS207 Nutrition Principles (10)
BNS218 Food Science (10)
BNS219 Experimental Food Science
BNS220 Food Microbiology (10)

**Progression requirements**

240 Credits

Outcomes developed and assessed:
B1; C2,3; D1-5

Knowledge outcomes developed as indicated by module titles.

**Stage 1**

**Compulsory Modules**

CHY115 Basic Organic Chemistry (20)
CHY120 Elements of Physical Chemistry (20)
CHY135 Structural and Inorganic Chemistry (20)
CHY101 Fundamentals of Chemistry (10)
CHY106 Fundamentals of Biological and Medicinal Chemistry (10)
BIO108 Introduction to Biology (10)
BNS112 Nutrition and Food Science (10)

**Progression requirements**

120 Credits

Outcomes developed and assessed:
B1; C2,3; D1, 3

Knowledge outcomes developed as indicated by module titles. A3 is covered in CHY115, CHY120, CHY135

**C Programme Curriculum**
(Insert Regulations as given on University web site – currently being updated)

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

| | |
|---|---|
| A1: Inorganic, essentials of organic and physical chemistry; biology, food science, nutrition. | **CHY101, CHY115, CHY120, CHY135, CHY180, CHY201**, *CHY204*, **CHY210, CHY220, CHY230, CHY240,** *CHY274*, **CHY277**, **CHY300, CHY301, CHY310, CHY320, CHY330**, *CHY394, CHY395* |
| A2: Practical laboratory chemistry | **CHY106, CHY115, CHY120, CHY135, CHY210, CHY220, CHY230, CHY240,** *CHY394*, |
| A3: Data analysis and numeracy | **CHY101**, **CHY115, CHY120, CHY135, CHY180**, *CHY204*, **CHY210, CHY220, CHY230, CHY240**, **CHY277, CHY301, CHY310, CHY320, CHY330**, *CHY394* |
| A4. Spectroscopy and chemical characterisation | **CHY101**, **CHY120, CHY135, CHY201**, **CHY210, CHY220, CHY230, CHY240**, **CHY277**, **CHY300, CHY301, CHY320, CHY330**, *CHY394* |
| B1: Work safely and independently in a laboratory | **CHY106, CHY115, CHY120, CHY135, CHY210, CHY220, CHY230,** , *CHY394* |
| B2: Plan and undertake an advanced practical course or non-lab project | *CHY394, CHY395* |
| C1. Critically evaluate data | **CHY300, CHY301, CHY320**, *CHY394, CHY395* |
| C2. Apply learnt knowledge to unseen problems | **CHY101, CHY106, CHY115, CHY120, CHY135, CHY180, CHY201**, *CHY204*, **CHY210, CHY220, CHY230, CHY240,** *CHY274*, **CHY277**, **CHY300, CHY301, CHY310, CHY320, CHY330** |
| C3. Analyse and interpret data | **CHY101, CHY106, CHY120, CHY135, CHY180, CHY201**, *CHY204*, **CHY210, CHY220, CHY230, CHY240**, **CHY300, CHY301, CHY310, CHY320, CHY330,** *CHY394, CHY395* |
| C4. Independently plan and undertake a project | **CHY201**, *CHY394, CHY395* |
| D1. Communicate and express ideas orally and in writing | **CHY101, CHY106, CHY115, CHY120, CHY135, CHY180, CHY201**, *CHY204*, **CHY210, CHY220, CHY230, CHY240,** *CHY274*, **CHY277**, **CHY300, CHY301, CHY310, CHY320, CHY330**, *CHY394, CHY395* |
| D2. Work in a group environment | **CHY201, CHY300, CHY301** |
| D3. Manage time and complete work to deadlines | **CHY115, CHY120, CHY135, CHY180, CHY201**, *CHY204*, **CHY210, CHY220, CHY230, CHY240, CHY300, CHY301, CHY310, CHY320, CHY330,** *CHY394, CHY395* |
| D4. Assess and form an opinion of other people's work | **CHY201, CHY210**, *CHY394, CHY395* |
| D5. Find information from a range of sources | *CHY204*, **CHY300, CHY301, CHY310, CHY320, CHY330,** *CHY394, CHY395* |
| D6. Be self-reliant | *CHY394, CHY395* |
| D7. Critically evaluate data and use when required | **CHY300, CHY301,** *CHY394, CHY395* |

**12 Criteria for Admission:**

*Standard entrance criteria*

Applicants for whom English is not their first language must provide evidence of a satisfactory command of English by means of an IELTS score of 6.5 or greater.

*Applicants with non-standard qualifications*

Applicants who hold non-standard qualifications will be considered on an individual basis.

*Admissions Policy*

Upon receipt of a UCAS application form offers of places are made to suitably qualified candidates. The standard offer for this programme is BCC including Chemistry at A Level. UK - based applicants are invited to visit Chemistry on an Open Day. During the day they will have a tour of Chemistry, the City and, weather permitting, the Campus. They are shown a purpose made video about studying chemistry at Newcastle and meet students and staff. They also attend an informal interview with a member of academic staff. Applicants not based in the UK are not required to attend for interview.

**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 http://www.ncl.ac.uk/international/coming_to_newcastle/orientation.phtml).
There is an Induction Week Programme in Natural Sciences which includes social events as well as informative presentations about the course, facilities and student support. Each student receives a Welcome Package, including book vouchers, laboratory coat, Periodic Table etc. Returning students also have induction week programmes.

*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 http://www.ncl.ac.uk/undergraduate/support/tutor.phtml. 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 http://www.ncl.ac.uk/undergraduate/support/welfare.phtml.

*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 http://www.ncl.ac.uk/undergraduate/support/disability.phtml.

*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*

Student opinion about the modules is gathered annually. All stages of the Programme are evaluated by means of module and Stage Reviews.

The School operates a system of Peer Observation of teaching activities following the Guidelines issued by the University's Quality and Standards Unit.

The Board of Studies conducts an annual review of the programme. The Board considers the comments and recommendations of the External Examiners. Graduate surveys are conducted for consideration. The Board will consider comments and recommendations arising from any subject reviews.

The Director of Teaching (who is also the Chair of the Board of Studies) and/or Degree Programme Director is available to discuss academic issues with students throughout the course with a view to improving the quality and standard of teaching and learning. The External Examiners confirm that the standards are appropriate on an annual basis.

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*
Non applicable

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

**15 Regulation of Assessment:**

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

*Course Requirements*
Progression is subject to the University's Undergraduate Progress Regulations (http://www.ncl.ac.uk/calendar/university.regs/ugcont.html) and Undergraduate Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.html). 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 *<2:1>*.

*Common Marking Scheme*
The University employs a common marking scheme, which is specified in the Undergraduate Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs/ugcont.html), 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
This will be subject-specific. Possible entries are
*Not applicable*

Internal Review Reports
*This programme was covered by the Internal Subject Review of Chemistry held on February 2003 and was subsequently approved by Faculty Teaching and Learning Committee and University Teaching and Learning Committee. The team was impressed by the very positive relationships between staff and students – it was abundantly clear that the subject group are very student-focused and this was to their significant credit.*

Previous QAA Reports
*This programme received a QAA Subject Review in April 2004 and was judged to be Excellent/Satisfactory.*

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.

**17 Other Sources of Information:**

The University Prospectus (see http://www.ncl.ac.uk/undergraduate/ )

The Departmental Prospectus (see http://www.ncl.ac.uk/undergraduate/subjects/xxx)

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

The Degree Programme Handbook

QAA Subject Review Report