

## PROGRAMME SPECIFICATION (Taught Postgraduate)



<b>1 Awarding Institution</b>	Newcastle University
<b>2 Teaching Institution</b>	Newcastle University
<b>3 Final Award</b>	MSc
<b>4 Programme Title</b>	Chemistry
<b>5 Programme Code</b>	5371F
<b>6 Programme Accreditation</b>	N/A
<b>7 QAA Subject Benchmark(s)</b>	Chemistry
<b>8 FHEQ Level</b>	Level 7
<b>9 Last updated</b>	May 2023

### 10 Programme Aims

- 1 To provide advanced training in modern chemistry.
- 2 To provide an overview of advanced chemistry topics as practiced in modern research.
- 3 To provide speciality training in areas of organic, inorganic, physical and analytical chemistry.
- 4 To enable the student to achieve a high level of research competence and to gain experience through training in relevant aspects of laboratory work, including COSHH and safety.
- 5 To provide the student with enhanced presentational, scientific writing and group working skills.

### 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:

- A1 Have advanced knowledge across the main branches of chemistry (organic, inorganic, physical and analytical).
- A2 Have developed advanced practical laboratory skills.
- A3 Have developed skills in data analysis and numeracy.
- A4 Have skills in modern spectroscopy and chemical characterisation.
- A5 Have skills in advanced research methods.
- A6 Have presentation and scientific writing skills.

#### Teaching and Learning Methods

Students acquire understanding and knowledge through lectures, seminars and workshops (**A1, A5**). Through a taught laboratory class students will consolidate their learning started in lectures by performing carefully designed and tested experiments (**A2, A3 and A4**). Lecture based modules will cover specialised areas of chemistry (**A1**), whilst the Research Project and Research Preparation modules will provide research and presentation skills (**A5, A6**) and will allow application and extension of taught material to the research environment (**A1–A6**).

Throughout the period of the programme 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) and the course is supplemented with research seminars by leading external academic and industrial speakers (**A1, A5, A6**).

<b>Assessment Strategy</b>
Knowledge and understanding is assessed through a mixture of unseen written examinations and in course assessment ( <b>A1-A4</b> ), practical reports ( <b>A2-A4</b> ), oral examination ( <b>A1</b> ), assessed presentations and a Research Project dissertation ( <b>A5-A6</b> ).
<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
B4 Independently plan and undertake a research project.
<b>Teaching and Learning Methods</b>
Intellectual skills are developed by means of the teaching and learning programme described above. Students apply the concepts learnt to problems in laboratory work, seminars and coursework assignments ( <b>B1-B3</b> ). Students develop skills <b>B1-B4</b> in the design and conduct of the Research Project.
<b>Assessment Strategy</b>
Problem solving components of taught modules present in examinations and course work assess skills B1-B3. The Research Project, assesses skills B1-B4 through written reports, oral presentations and oral examinations.
<b>Practical Skills</b>
On completing the programme students should be able to:
C1 Work safely and independently in a chemistry laboratory.
C2 Plan and undertake an advanced practical course.
C3 Plan and undertake a research project.
<b>Teaching and Learning Methods</b>
Students receive close supervision from a demonstrator 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 ( <b>C1</b> ). Due to the diverse backgrounds of students on the programme initial experiments in a semester 2 module covering methods and techniques in drug chemistry have detailed procedures. Later experiments allow students to plan and design their experiments, work with a greater level of independence and perform more technically demanding procedures ( <b>C2</b> ). The research project allows the students to plan and undertake a research project requiring diverse practical techniques, working with a research team including other students, academic, teaching and technical staff ( <b>C3</b> ).
<b>Assessment Strategy</b>
<b>C1</b> and <b>C2</b> are assessed through practical reports. In addition to the final report, written and oral presentations are used to assess the planning and outcome of the Research Project ( <b>C3</b> ).
<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 people's 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>
Both lecture courses (through assignments) and practical courses require the students to produce regular written work which is submitted to deadlines ( <b>D1, D3, D5, D6</b> ). Assignments may also require critical evaluation and interpretation of data ( <b>D7</b> ). Both the methods and techniques for drug chemistry module and the Research Project provide the opportunity for students to plan work and solve problems as part of a team ( <b>D2</b> ). Peer assessment is introduced in a formative sense in the methods and techniques for drug chemistry module and through the planning of the Research Project ( <b>D4</b> ). All skills ( <b>D1-D7</b> ) are further developed throughout the Research Project.
<b>Assessment Strategy</b>

Written work and oral examinations are used to assess skill **D1**. Assignments as part of the taught modules assess **D1, D3, D5–D7**. The Research Project evaluates skills **D1–D7**. **D4** is addressed by peer assessment of individual contributions to the group effort and of team presentations on the Research Project. In addition skill **D2** is assessed in the methods and techniques for drug chemistry module and through research preparation and development.

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

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

The programme runs for 12-months from late September, across 3 Semesters. It comprises 180 credits, including 120 credits taught (Semesters 1 and 2) with 60 credits allocated to the consultancy project (mostly undertaken during Semester 3). 130 credits of modules are compulsory, with taught modules either 10- or 20-credit valency, taught in block weeks. The programme is offered in full time mode (1 year). The research project is compulsory and successful completion of the programme leads to the award of the MSc degree.

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

The taught programme highlights the impact of chemistry in the modern world. The programme allows the student to focus on advanced elements of organic, inorganic, physical and analytical chemistry. The research project and dissertation will provide training in how to tackle and how to communicate the results of a significant research problem in chemistry.

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

[-R5371F.pdf \(ncl.ac.uk\)](#)

## **13 Support for Student Learning**

Generic information regarding University provision is available at the following link.

[Generic Information](#)

## **14 Methods for evaluating and improving the quality and standards of teaching and learning**

Generic information regarding University provision is available at the following link.

[Generic Information](#)

*Accreditation reports*

N/A

*Additional mechanisms*

N/A

## **15 Regulation of assessment**

Generic information regarding University provision is available at the following link.

[Generic Information](#)

In addition, information relating to the programme is provided in:

The University Prospectus: <https://www.ncl.ac.uk/postgraduate/>

The University Regulations: <http://www.ncl.ac.uk/regulations/docs/>

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.