Programme Specification[1]

1. Programme Title(s) and Code(s):

Programme Title	*UCAS Code*	*GU Code*
MSci in Materials Chemistry with Work Placement	F107	F116A-2207

2. Academic Session:

2019-20

3. SCQF Level (see Scottish Credit and Qualifications Framework Levels):

11

4. Credits:

640

5. Entrance Requirements:

Please refer to the current undergraduate prospectus at: https://www.gla.ac.uk/prospectuses/undergraduate/

6. ATAS Certificate Requirement (see Academic Technology Approval Scheme):

ATAS Certificate not required

7. Attendance Type:

Full Time

8. Programme Aims:

• To present an integrated course of study which describes, analyses and relates the principles of modern chemistry and materials chemistry at a level appropriate for a professional chemist;
• To enable students to pursue their interests in depth by providing a range of specialist modules and practical training in materials chemistry to an advanced level;
• To provide the opportunity to study in depth a choice of advanced treatments and applications of aspects of modern chemistry and materials chemistry;

[1] This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if full advantage is taken of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each course can be found in course handbooks and other programme documentation and online at www.gla.ac.uk/

The accuracy of the information in this document is reviewed periodically by the University and may be checked by the Quality Assurance Agency for Higher Education.

• To provide training and experience in the principles and practice of synthetic methodologies and chemical measurement techniques, using advanced instrumentation where appropriate, and in the critical analysis of experimental data;
• To develop problem solving abilities, critical assessment and communication skills, to a level appropriate for a career of leadership in academia or industry, and to give students the experience of group work;
• To offer the opportunity to apply measurement, problem solving and critical assessment, and communication skills in performing and writing a report on an extended and demanding project;
• To encourage students to work effectively, to develop a professional attitude to what they do and to take full responsibility for their own learning.

9. Intended Learning Outcomes of Programme:

The programme provides opportunities for students to develop and to demonstrate knowledge and understanding, skills and other attributes as described below.

Knowledge and Understanding:

By the end of this programme students will be able to:
• demonstrate knowledge of the fundamental concepts, principles, theories and methods of the various branches of chemistry for example: organic, inorganic, physical, materials and theoretical chemistry;
• demonstrate understanding of selected advanced topics in materials chemistry at the leading edge of research;
• describe in detail the underlying theories on which practical experiments and measurements in chemistry are based.

Skills and Other Attributes:

By the end of this programme students will be able to:

Subject-specific/practical skills
• plan and undertaken experimental investigations, using standard and complex or advanced experimental equipment and apparatus, of complex chemical systems or processes, demonstrating logic, initiative, planning and decision making skills in solving problems encountered;
• analyse, interpret and critically evaluate experimental data, make a quantitative evaluation of the errors inherent in the experimental measurements and draw valid conclusions from the results of experimental investigations;
• apply computer software to analyse experimental data and to write scientific reports;
• recover, evaluate and summarise the professional literature and material from other sources concerned with materials chemistry, and prepare a written analysis of the current position in this area, which should include a critical comparison of the material and a discussion of likely future developments;
• propose the course of action required to achieve self-defined goals in an open-ended materials chemistry project
• make appropriate safety assessments for experimental procedures.

Intellectual skills
• describe and analyse quantitatively processes, relationships and techniques related to the areas covered in the contributory courses;
• write down, and where appropriate either prove or discuss the underlying basis of, chemical laws and principles related to topics in these areas;
• analyse critically, and solve using appropriate mathematical tools, advanced or complex problems, which may include unseen elements, related to topics included in the course component outlines;
• demonstrate a critical awareness of the significance and importance of the topics, methods and techniques discussed in the lectures and their relationship to other concepts in courses you have taken.

Transferable/key skills
• give an oral account of experimental work performed and conclusions drawn from it;
• prepare a detailed written report on an experimental investigation;

• apply logical analysis to problem solving;
• make a preliminary definition of goals to be achieved during open-ended project work and revise these goals and strategies for completion of the work in the light of results achieved and difficulties encountered;
• write a report on an extended piece of project work, which should include a critical evaluation of the significance of the work, and how it compares with earlier work done in the same area;
• prepare an abstract of experimental or project work performed in the accepted scientific format;
• prepare and present audio-visual presentations summarizing the results of a project;
• appreciate open problems typical of business situations;
• interact positively with colleagues in a group context;
• apply team-working skills to address a complex problem and contribute significantly to the work of a group tackling such a problem, combining their own work constructively with the work of others;
• contribute to the management of a group engaged in project work;
• combine with colleagues to prepare and deliver a presentation and report of group work.

10. Typical Learning and Teaching Approaches:

A range of learning and teaching approaches are used including:
• Lectures
• Tutorials
• Guided reading of books and articles
• Problem-solving sessions
• Interactive teaching sessions
• Practical classes
• Group-work tasks
• Extended projects
• Practical and project reports
• Extended essays on selected topics
• Data analysis sessions
• Work placement experience
• Distance learning

11. Typical Assessment Methods:

• Written examinations
• Verbal and written reports of laboratory work
• Oral and written presentations of project work and assessment of practical skills by supervisors
• Oral presentations and reports on group tasks

12. Programme Structure and Features:

Structure

Course Title	Course Code	Credits	Core	Optional	Semester(s) taught
Year 1					
Chemistry 1	CHEM1001	40	✓		1 and 2
Additional courses		80			
Year 2					
Chemistry 2X	CHEM2001	30	✓		1 and 2
Chemistry 2Y	CHEM2002	30	✓		1 and 2
Additional courses		60			
Year 3					
Inorganic Chemistry 3	CHEM3010	40	✓		1 and 2
Organic Chemistry 3	CHEM3012	40	✓		1 and 2
Physical Chemistry 3	CHEM3014	40	✓		1 and 2
Frontiers of Chemistry 3M	CHEM5016	20	✓		1 and 2
Year 4					
Materials Chemistry Work Placement year		120	✓		
Year 5					
Chemistry Problems 4M (A)	CHEM5005	20	✓		1 and 2
Materials Chemistry Project 4M	CHEM5075	40	✓		1 and 2
Chemistry Special Topics 4M (A)	CHEM5003	20	✓		1 and 2
Functional Materials 4M	CHEM5053	10	✓		1 and 2
Inorganic Chemistry 4M (C)	CHEM5019	10	✓		1 and 2
Materials Characterisation 4M	CHEM5054	10	✓		1 and 2
Nanostructure Materials 4M	CHEM5055	10	✓		1 and 2
Physical Chemistry 4M (A)	CHEM5022	20	✓		1 and 2

Assessment

The programme is assessed on the basis of performance in years 3, 4 and 5.

Degree assessment: carry over from third year assessment (20%); placement assessment (20%); final year examinations (42.9%); research project (17.1%).

Interim assessment at end of year 3: Examinations (72.9%), Frontiers of chemistry assessment (14.3%) and assessment of laboratory work (12.8%).

Progress Requirements

In addition to Science generic progress requirements as set out in the University Calendar:

Year 1 to Year 2: Chemistry 1 at grade D3 or better;

Year 2 to Year 3: Chemistry 2X and 2Y both at grade B3 or better at first sitting;

Year 3 to Year 4: Chemistry level 3 courses normally at an aggregate grade C3 or better at first sitting;

Year 4 to Year 5: Work placement year assessment at grade C3 or better at first sitting.

Exit Awards and programme changes

At the end of Year 3, students who satisfy the University requirements may graduate with a BSc designated degree in Chemistry.

At the end of year 3, students who have completed the level 3 courses with at least an aggregate grade D3 at first sitting may move to the BSc Honours programme in year 4.

At the end of year 4, students who achieve C3 or better for the placement year and satisfy the University requirements may graduate with a BSc designated degree in chemistry with work placement.

At the end of year 4, students who achieve less than a C3 but at least a D3 for the placement year and satisfy the University requirements, may transfer to BSc Honours with Work Placement.

At the end of year 4, students who achieve less than a D3 for the placement year and satisfy the University requirements, may transfer to BSc Honours.

Regulations

This programme will be governed by the relevant regulations published in the University Calendar. These regulations include the requirements in relation to:

(a) Award of the degree
(b) Progress
(c) Early exit awards
(d) Entry to Honours (For undergraduate programmes, where appropriate)

www.gla.ac.uk/services/senateoffice/policies/calendar/

13. Programme Accredited By:

14. Location(s):

Glasgow

15. College:

College of Science and Engineering

16. Lead School/Institute:

Chemistry [REG30100000]

17. Is this programme collaborative with another institution:

No

18. Awarding Institution(s):

University of Glasgow

19. Teaching Institution(s):

University of Glasgow

20. Language of Instruction:

English

21. Language of Assessment:

English

22. Relevant QAA Subject Benchmark Statements (see Quality Assurance Agency for Higher Education) and Other External or Internal Reference Points:

The QAA Benchmark statement for chemistry can be found at http://www.qaa.ac.uk/en/Publications/Documents/SBS-chemistry-14.pdf

23. Additional Relevant Information (if applicable):

Support for students is provided by the Postgraduate/Undergraduate Adviser(s) of Studies supported by University resources such LEADS (www.gla.ac.uk/myglasgow/leads/), Counselling & Psychological Services (www.gla.ac.uk/services/counselling/), the Disability Service (www.gla.ac.uk/services/studentdisability/) and the Careers Service (www.gla.ac.uk/services/careers/).
Accreditation will be sought from The Royal Society of Chemistry

24. Online Learning:

No

25. Date of approval:	30/09/2019