Programme Specification[1]

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

Programme Title	*UCAS Code*	*GU Code*
BSc (Hons) in Materials Chemistry	F108	F116-2208

2. Academic Session:

2019-20

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

10

4. Credits:

480

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 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 assessment, and communication skills in performing and writing a report on an extended materials chemistry 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 understanding of the key concepts, principles and methods of the various branches of chemistry for example: organic, inorganic, physical, materials and theoretical chemistry;
• demonstrate knowledge of several specialised topics in materials chemistry at the leading edge of research;
• describe 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 carry out experimental investigations, using standard and advanced experimental equipment, of complex chemical systems or processes, demonstrating initiative, planning and decision making skills in solving problems encountered;
• interpret and evaluate experimental data, and evaluate the errors inherent in the experimental measurements and draw appropriate conclusions;
• apply computer software to analyse experimental data and to write scientific reports;
• 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 comparison of the material and discussion of future developments;
• plan the course of action required to achieve the goals in an extended materials chemistry project;
• make appropriate safety assessments for experimental procedures.

Intellectual skills
• describe and analyse processes, relationships and techniques related to the areas covered in the contributory courses;
• discuss and describe the underlying basis of chemical laws and principles related to topics in these areas;
• solve using appropriate mathematical tools, advanced or complex problems, which may include elements related to topics included in the course component outlines;
• show a broad awareness of the significance and importance of the topics, methods and techniques presented in the lectures and their relationship to other courses you have taken.

Transferable/key skills
• give an oral account of experimental work undertaken and the conclusions drawn from the experimental investigation;
• produce a detailed scientific 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 research project, which should include evaluation of the significance of the work,

and how it compares with work already done in the same area;
• prepare and present audio/visual presentations summarizing the results of a project;
• prepare an abstract of experimental or project work performed in the accepted scientific format;
• interact positively with colleagues in a group context and contribute to the management of the group;
• combine work constructively with the work of others in a group context to address a complex problem and contribute significantly to the work of a group tackling such a problem;
• 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 project in materials chemistry
• Practical and project reports
• Extended essays on selected topics
• Data analysis sessions

11. Typical Assessment Methods:

• Written examinations
• Verbal and written reports of laboratory work
• Assessment sheets
• 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
Year 4					
Materials Chemistry Project 4H	CHEM4046	40	✓		1 and 2
Chemistry Special Topics 4H	CHEM4001	20	✓		1 and 2
Functional Materials 4H	CHEM4041	10	✓		1 and 2
Inorganic Chemistry 4H (Half)	CHEM4010	10	✓		1 and 2
Materials Characterisation 4H	CHEM4042	10	✓		1 and 2
Nanostructure Materials 4H	CHEM4043	10	✓		1 and 2
Physical Chemistry 4H	CHEM4014	20	✓		1 and 2

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 C3 or better at first sitting;
Year 3 to year 4: Chemistry level 3 courses at aggregate grade D3 or better at first sitting.

Exit Awards

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

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