Programme Specification

Chemistry (2017-18)

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 s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full-time
Duration in years	4
Accreditation details	Royal Society of Chemistry (RSC)
Final award	Master of Chemistry (MChem)
Name of award	Chemistry
Interim Exit awards	Bachelor of Science with Honours (BSc (Hons))
	Bachelor of Science (Ordinary)
	Certificate of Higher Education (CertHE)
	Diploma of Higher Education (DipHE)
FHEQ level of final award	Level 7
UCAS code	F103
Programme code	5016
QAA Subject Benchmark or other external reference	Chemistry 2007, Master's Degree Characteristics 2010
Programme Lead	Andrew Hector (uccaalh)

Programme Overview

Brief outline of the programme

The MChem Chemistry degree aims to enhance your sense of enthusiasm for chemistry and to involve you in an intellectually stimulating experience of learning in a supportive environment. You will gain extensive in-depth knowledge and understanding of chemistry and related subjects, as well as a comprehensive training in practical chemistry and an appreciation of the importance of the discipline in different contexts. We will provide a sound basis for a successful career as a professional chemist and provide opportunities for you to develop a range of transferable skills for both chemical and non-chemical careers.

Integrated Masters students develop an in-depth knowledge and critical awareness of a substantial area of chemistry and are suitably prepared for employment in the chemical sciences or for studying further at doctoral level.

A key feature of the MChem programme is that you will complete a substantial original project that will equip you for a successful career as a professional chemi

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

Learning and teaching

To assist your learning the academic staff will provide an extensive programme of lectures, tutorials, problem workshops, and laboratory classes. They will provide learning support material and also informal assistance to guide your private study.

You will be guided during the completion of your research project by a member of staff, with whom you will meet regularly to discuss the context, design, execution, interpretation, and presentation of your project work. Additional lectures that support your research training in aspects such as the assessment of risks and hazards, production of written reports, and oral presentations will be provided. Completion of the project will enable you to demonstrate your academic independence.

Assessment

There are written examinations at the end of each semester to test your knowledge and understanding of material presented in the lectures and workshops. The practical work is continuously assessed primarily through written reports. Project work is assessed by dissertation and oral examination together with a report on your relevant skills from your supervisor. A written literature review related to the project is also assessed.

Coursework exercises based on the lecture material are set each week and feedback is provided promptly. In some cases coursework marks are used in calculating your overall mark for the particular module of study. However in most cases coursework is simply to give you an indication of your progress.

The research project will be assessed via a variety of means including review of your laboratory notebook, your assessments of the risks and hazards of your work, written reports, oral presentations, the production of a dissertation, and an oral examination.

Special Features of the programme

N/A

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration; however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our Disclaimer to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's programme validation process which is described in the University's Quality handbook.

Educational Aims of the Programme

The general aims of the Chemistry degree programmes are to:

- instil in you an enthusiasm for Chemistry and an appreciation of is application in different contexts;

· involve you in an intellectually stimulating and satisfying experience of learning and studying in a supportive environment;
· enable you to establish an appreciation of the importance and sustainability of the chemical sciences in an industrial, academic, economic, environmental and social context.
· develop a range of appropriate generic skills of value in chemical and non-chemical employment.

The main aims of the MChem degree are:

· provide you with a broad and balanced knowledge and understanding of key chemical concepts;
· develop your range of practical skills so that you can understand and assess risks and work safely and competently in the laboratory;
· develop your ability to apply standard methodology to the solution of problems in chemistry;
· provide you with a knowledge and skills base from which you can proceed to graduate employment or to further studies in chemistry or multi-disciplinary areas involving chemistry.
· to extend your comprehension of key chemical concepts and so provide you with an in-depth understanding of specialised areas of chemistry;
· to develop your ability to plan and carry out experiments independently as well as your ability to assess the outcomes and significance of such experiments;
· to develop your ability to adapt and apply methodologies to the solution of unfamiliar types of problems;
· to instil in you an awareness of advances at the forefront of the chemical sciences;
· to prepare you effectively for professional employment or research degrees in the chemical sciences.

Programme Learning Outcomes

Knowledge and Understanding

On successful completion of this programme a student will have knowledge and understanding of:

A1. knowledge and broad understanding of major aspects of chemical terminology;

A2. a systematic understanding of fundamental physicochemical principles, including thermodynamics, chemical kinetics, and quantum mechanics, and possess and ability to apply that knowledge to the solution of theoretical and practical problems;

A3. knowledge of a range of inorganic, organic, and organometallic compounds and materials;

A4. knowledge and understanding of the evidenced based synthesis of organic and inorganic compounds, including related isolation, purification, and characterisation techniques

A5. knowledge of the qualitative and quantitative aspects of chemical metrology and the importance of traceability;

A6. an awareness of issues within chemistry that overlap with other related subjects

A7. an understanding of ethics, societal responsibilities, environmental impact and sustainability, in the context of chemistry;

A8. an understanding of safe working practices, in terms of managing chemical toxicity, chemical stability and chemical reactivity, and the preparation of knowledge-based risk assessments;

A9. an understanding of the key features of transition metal and f-block elements and their chemistries;

A10. an understanding of the fundamentals of bio-organic chemistry;

A11. an understanding of the fundamentals of catalysis, electrochemistry, and surface science;

A12. an ability to understand and engage with scientific literature

A13. knowledge of a selection of topics currently at the frontiers of chemical research and some of the specialist techniques used to investigate them

A14. an in-depth knowledge and critical awareness of a substantial area of chemistry.

Teaching and Learning Methods

Knowledge and understanding are developed through participation in lectures, workshop/problem classes, small group tutorials, laboratory and computer based practical classes, and through a supervised research project.

Assessment Methods

Testing of the knowledge base and understanding is through a combination of unseen written examinations which comprise questions that test recall of seen material, understanding and interpretation of unseen material, application of knowledge, and problem solving, assessed course work in the form of laboratory reports and other exercises, oral examinations and presentations, and an individual dissertation project report.

Subject Specific Intellectual and Research Skills

On successful completion of this programme a student will be able to:

B1. the ability to demonstrate knowledge and understanding of essential chemical facts, concepts, principles and theories;

B2. the ability to apply such knowledge and understanding to the solution of qualitative and quantitative problems that are mostly of a familiar nature;

B3. the ability to recognise and analyse problems and plan strategies for their solution;

B4. skills in the generation, evaluation, interpretation and synthesis of chemical information and data;

B5. skills in the practical application of theory using computational methodology and models;

B6. skills in communicating scientific material and arguments;

B7. information technology and data-processing skills, relating to chemical information and data;

B8. the ability to adapt and apply methodology to the solution of unfamiliar problems;

B9. the ability to assimilate, evaluate, and present research results objectively;

B10. skills required to undertake a research project reporting outcomes that are potentially publishable (in a peer-reviewed publication).

Teaching and Learning Methods

Intellectual skills are developed through the teaching and learning activities outlined above. IT, analysis, communication, and problem solving skills are developed extensively through the workshops, tutorials,

practical classes and the research project. The use of databases is addressed in the practicals and in workshops and briefing lectures that are part of the research project module.

Assessment Methods

Subject specific intellectual and research skills are assessed via unseen written examinations, coursework, practical reports, oral examinations, and the project dissertation.

Transferable and Generic Skills

On successful completion of this programme a student will be able to:

C1. communication skills, covering both written and oral communication with a variety of audiences;

C2. skills in the employment of common conventions and standards in scientific writing, data presentation, and referencing literature;

C3. problem-solving skills, relating to qualitative and quantitative information;

C4. numeracy and mathematical skills, including handling data, algebra, functions, trigonometry, calculus, vectors and complex numbers, alongside error analysis, order-of-magnitude estimations, systematic use of scientific units and different types of data presentation,

C5. information location and retrieval skills, in relation to primary and secondary information sources, and the ability to assess the quality of information accessed;

C6. information technology skills which support the location, management, processing, analysis and presentation of scientific information;

C7. basic interpersonal skills relating to the ability to interact with other people and to engage in team working;

C8. time management and organisational skills, as evidence by the ability to plan and implement efficient and effective ways of working;

C9. skills needed to undertake appropriate further training of a professional nature;

C10. other relevant professional and employability skills such as business awareness and networking;

C11. problem-solving skills including the demonstration of self-direction, initiative and originality;

C12. the ability to communicate and interact with professionals from other subjects;

C13. the ability to make decisions in complex and unpredictable situations;

C14. the ability to think critically in the context of data analysis and experimental design;

C15. the ability to work in multi-disciplinary and multi-skilled teams;

C16. independent learning skills for continuing professional development.

Teaching and Learning Methods

Oral and written communication skills are developed through all the teaching and learning activities. Data presentation is specifically addressed in the practical classes and the research project. Numeracy and mathematical skills are developed through a series of support lectures and workshops in parts 1

and 2 of the degree. Information technology skills are developed throughout the programme, with specific emphasis during the practical sessions and the research project, via lectures and workshops. Interpersonal skills are enhanced via team working in the practical sessions and interaction with the research group and supervisor in the research project. Time management and organisational skills are developed through the setting and strict enforcement of deadlines. Skills that enable further professional development, employability, and networking are nurtured and developed throughout the programme and are supported by various extra timetabled sessions.

Assessment Methods

Communication, presentation, problem-solving, numeracy, information retrieval, and IT skills are assessed via unseen written examinations, coursework, and the project dissertation. Interpersonal skills are assessed as part of the supervisor's assessment for the project module and team working in the practical classes. Time management and organisation is assessed by applying penalties for failure to meet deadlines. Skills required to undertake further training, employability, and networking are essential for success on the programme and for future professional development, but are not formally assessed

Subject Specific Practical Skills

On successful completion of this programme a student will be able to:

D1. an ability to determine hazards associated with carrying out chemical experiments in terms of chemical toxicity, chemical stability and chemical reactivity and be able to find information to enable effective risk assessments to be carried out;

D2. skills to handle chemicals safely and carry out experiments and chemical reactions in a safe manner, based on effective risk assessments;

D3. skills required for the conduct of documented laboratory procedures involved in synthesis and analysis, in relation to both inorganic and organic systems;

D4. skills in the monitoring, by observation and measurement, of chemical properties, events or changes, and the systematic and reliable recording and documentation thereof;

D5. skills in the operation of standard chemical instrumentation;

D6. the ability to plan experimental procedures, given well defined objectives;

D7. the ability to interpret and explain the limits of accuracy of their own experimental data in terms of significance and underlying theory;

D8. the ability to select appropriate techniques and procedures;

D9. competence in the planning, design, and execution of experiments;

D10. skills required to work independently and be self-critical in the evaluation of risks, experimental procedures, and outcomes;

D11. the ability to use an understanding of the uncertainty of experimental data to inform the planning of future work.

Teaching and Learning Methods

Subject specific practical skills are developed through specific lectures as well as the completion of

exercises that accompany the practical sessions and the research project.

Assessment Methods

Practical skills are assessed through pre-lab exercises, laboratory reports, coursework exercises, and the research project.

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Part I

Typical course content

The programme of study is divided into modules. Each module is assigned a number of credit points (ECTS = European Credit Transfer Scheme) that relates to the hours of formal teaching plus the recommended time for private study (1ECTS = 20 hours of notional study). In each year you will take certain core and/or compulsory modules and a selection of approved option modules that make up an academic load of 60 ECTS. The modules are graded introductory/ fundamental, FHEQ Level 4 (1) intermediate, FHEQ Level 5 (2) advanced, FHEQ Level 6 (3), and Masters, FHEQ Level 7 (4): the number in brackets indicates the Year of Study in which the module is normally taken.

To help you see Chemistry in a broader context you will study at least 30 ECTS of subjects that are academically and/or professionally related to Chemistry in the first three years. A feature of the programme is the wide range of modules available for this purpose.

In the final year you will complete a substantive research project accounting for 30 ECTS in the first semester, followed by 30 ECTS of advanced elective modules in the second semester that enable you to reflect your chosen areas of specialisation within chemistry.

Detailed module descriptions including the breakdown of coursework and examination elements for each module are available online at http://www.southampton.ac.uk

In each year you will take courses that make up an academic load of 60 ECTS.

Part I Core

Code	Module Title	ECTS	Type

CHEM1035	Fundamentals of Inorganic Chemistry I 2017-18	7.5	Core
CHEM1036	Fundamentals of Inorganic Chemistry II 2017-18	7.5	Core
CHEM1031	Fundamentals of Organic Chemistry I 2017-18	7.5	Core
CHEM1032	Fundamentals of Organic Chemistry II 2017-18	7.5	Core
CHEM1033	Fundamentals of Physical Chemistry I 2017-18	7.5	Core
CHEM1034	Fundamentals of Physical Chemistry II 2017-18	7.5	Core

Part I Core Part 1 Optional

The modules listed are the recommended options are subject to availability. Should you wish to select an alternative this will require the approval of the Director of Programmes. Such approval may be sought by emailing sochem@soton.ac.uk

Code	Module Title	ECTS	Type
SOES1008	Earth and Ocean System 2017-18	7.5	Optional
BIOL1003	Ecology & Evolution 2017-18	7.5	Optional
CHEM1008	Environmental Chemistry 1: Aquatic Chemistry 2017-18	7.5	Optional
BIOL1014	Integrative Mammalian Physiology 2017-18	7.5	Optional
CHEM1040	Introduction to Analytical Chemistry 2017-18	7.5	Optional
PHYS1005	Introduction to Astronomy and Space Science 2017-18	7.5	Optional
BIOL1010	Macromolecules of Life 2017-18	7.5	Optional
BIOL1012	Systems Physiology 2017-18	7.5	Optional
SOES1009	The Living Earth 2017-18	7.5	Optional

Part II

This consists of 45 ECTS of core chemistry plus 15 ECTS of subsidiary/optional modules. If successfully completed, students can progress to Part 3 (FHEQ Level 6) or leave with the FHEQ Level 5 intermediate exit award, a Diploma of Higher Education.

Part II Core

Code	Module Title	ECTS	Type
CHEM2005	Aspects of Organic Synthesis 2018-19	7.5	Core
CHEM2013	Atomic and Molecular Interactions 2018-19	7.5	Core
CHEM2012	Change and Equilibrium 2018-19	7.5	Core
CHEM2015	Intermediate Inorganic Chemistry I 2018-19	7.5	Core
CHEM2016	Intermediate Inorganic Chemistry II 2018-19	7.5	Core
CHEM2001	Organic Reaction Mechanisms 2018-19	7.5	Core

Part II Core Part 2 Optional

The modules listed are the recommended options are subject to availability. Should you wish to select an alternative this will require the approval of the Director of Programmes. Such approval may be sought by emailing sochem@soton.ac.uk

Code	Module Title	ECTS	Type
UOSM2001	Business Skills for Employability 2018-19	7.5	Optional
SOES1008	Earth and Ocean System 2018-19	7.5	Optional
CHEM1008	Environmental Chemistry 1: Aquatic Chemistry 2018-19	7.5	Optional
UOSM2026	Ethics in Science, Engineering, and Technology: Jekyll and Hyde 2018-19	7.5	Optional
BIOL2012	Exploring Proteins: Structure and Function 2018-19	7.5	Optional
SOES2003	Geohazards and Earth Resources 2018-19	7.5	Optional
CHEM1040	Introduction to Analytical Chemistry 2018-19	7.5	Optional
PHYS2015	Introduction to Energy in The Environment 2018-19	7.5	Optional
SOES1005	Introduction to Ocean Biogeochemistry 2018-19	7.5	Optional

MATH2015	Mathematical Methods for Scientists 2018-19	7.5	Optional
BIOL2011	Molecular & Cellular Biochemistry 2018-19	7.5	Optional
CHEM2010	Organic Chemistry in the Environment 2018-19	7.5	Optional
UOSM2013	Pathological Mechanisms of Disease 2018-19	7.5	Optional
BIOL2016	Pharmacology A 2018-19	7.5	Optional
BIOL2017	Pharmacology B 2018-19	7.5	Optional
EDUC1035	Primary Education:Critical Observations 2018-19	7.5	Optional
CHEM2017	Quantitative Models in Chemistry 2018-19	7.5	Optional
EDUC1041	Secondary Education: Critical Observations 2018-19	7.5	Optional
BIOL1012	Systems Physiology 2018-19	7.5	Optional
SOES1009	The Living Earth 2018-19	7.5	Optional

Part III

This consists of 37.5 ECTS of compulsory chemistry plus 22.5 ECTS of subsidiary/optional modules. If successfully completed, students can leave with a Bachelor of Science.

Part III Core

Code	Module Title	ECTS	Type
CHEM3037	Advanced Inorganic Chemistry for -BSc and MChem Year 3 (single honours) 2019-20	7.5	Core
CHEM3038	Advanced Organic Chemistry (Bioorganic) for BSc and MChem Year 3 (single honours) 2019-20	7.5	Core
CHEM3039	Advanced Physical Chemistry for BSc and MChem Year 3 (single honours) 2019-20	7.5	Core

CHEM3046	Advanced Practical Chemistry (Year 3) 2019-20	15	Core

Part III Core Part 3 Optional

The modules listed are the recommended options are subject to availability. Should you wish to select an alternative this will require the approval of the Director of Programmes. Such approval may be sought by emailing sochem@soton.ac.uk

Code	Module Title	ECTS	Type
CHEM3036	Atmospheric Chemistry: An Experimental and Computational Approach 2019-20	7.5	Optional
CHEM3045	Atoms, Molecules and Spins: Quantum Mechanics in Chemistry and Spectroscopy 2019-20	7.5	Optional
CHEM6137	Atoms, Molecules and Spins: Quantum Mechanics in Chemistry and Spectroscopy 2019-20	7.5	Optional
CHEM3027	Communicating and Teaching the Undergraduate Ambassadors Scheme 2019-20	7.5	Optional
UOSM2026	Ethics in Science, Engineering, and Technology: Jekyll and Hyde 2019-20	7.5	Optional
CHEM3040	Macrocyclic and Bioinorganic Chemistry 2019-20	7.5	Optional
CHEM3002	Medicinal Chemistry (for Part 3 students) 2019-20	7.5	Optional
CHEM6092	Medicinal Chemistry for MChem 2019-20	7.5	Optional
CHEM2010	Organic Chemistry in the Environment 2019-20	7.5	Optional
CHEM3004	Organic Materials Chemistry 2019-20	7.5	Optional
CHEM2017	Quantitative Models in Chemistry 2019-20	7.5	Optional
CHEM3044	Sustainable Chemistry 2019-20	7.5	Optional
CHEM6103	Sustainable Chemistry 2019-20	7.5	Optional
UOSM2011	The Management of Risk and Uncertainty 2019-20	7.5	Optional

Part IV

This consists of 30 ECTS of compulsory chemistry plus 30 ECTS of optional modules in chemistry or a closely related field. Note that 60 ECTS at FHEQ Level 7 must be taken over the course of Parts 3 and 4 to be awarded the MChem degree.

Part IV Compulsory

Code	Module Title	ECTS	Type
CHEM6090	Chemistry Advanced Research Project 2020-21	30	Core

Part IV Compulsory Part 4 Optional

The modules listed are the recommended options are subject to availability. Should you wish to select an alternative this will require the approval of the Director of Programmes. Such approval may be sought by emailing sochem@soton.ac.uk

Code	Module Title	ECTS	Type
CHEM6109	Advanced Bioorganic Chemistry 2020-21	3.75	Optional
CHEM6107	Advanced Main Group Chemistry 2020-21	3.75	Optional
CHEM6126	Advanced Spectroscopy and its applications 2020-21	3.75	Optional
CHEM6137	Atoms, Molecules and Spins: Quantum Mechanics in Chemistry and Spectroscopy 2020-21	7.5	Optional
CHEM6105	Crystallography and Structural Science 2020-21	3.75	Optional
CHEM6128	Data-Driven Science 2020-21	3.75	Optional
CHEM6110	Electrochemistry 2020-21	3.75	Optional
CHEM6106	Functional Framework Materials 2020-21	3.75	Optional
CHEM6092	Medicinal Chemistry for MChem 2020-21	7.5	Optional
CHEM6111	Nanoscience 2020-21	3.75	Optional
CHEM6113	Nuclear Magnetic Resonance Spectroscopy 2020-21	3.75	Optional
CHEM6093	Organic Materials Chemistry 2020-21	7.5	Optional

CHEM6104	Supramolecular Chemistry 2020-21	3.75	Optional
CHEM6103	Sustainable Chemistry 2020-21	7.5	Optional
CHEM6108	Synthesis of Natural Products and Pharmaceuticals 2020-21	3.75	Optional

Progression Requirements

The programme will follow the University's regulations for ***Progression, Determination and Classification of Results: Undergraduate and Integrated Masters Programmes*** or the University's regulations for ***Progression, Determination and Classification of Results: Standalone Masters Programmes*** as set out in the General Academic Regulations in the University Calendar: http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:

- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources
- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia).
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community, (18.00-08.00)
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides

- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- Support for student peer-to-peer groups, such as Nightline.

Associated with your programme you will be able to access:

· Induction at the start of the course - programme for orientation, information on modules, courses, library and computer facilities.
· Well-equipped laboratories.
· Access to all administrative and academic material on the Academic Unit, Programme and individual module web sites and/or Blackboard.
· Programme Handbooks
· Academic and pastoral support from members of staff, including your personal academic tutor, which will include scheduled meetings at appropriate occasions during the academic year.
· Access to all academic staff through an appointment system and e-mail.
· Access to administrative staff in the Faculty Student Offices during the normal working day.

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

You will have the opportunity to have your say on the quality of the programme in the following ways:

· Completing student evaluation questionnaires for each module of the programme
· Acting as a student representative on various committees, e.g. Staff:Student Liaison Committees, Faculty Programmes Committee, Chemistry Educational and Quality Committee, OR providing comments to your student representative to feed back on your behalf.
· Serving as a student representative on Faculty Programmes Scrutiny Groups for programme validation
· Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Programmmes Scrutiny Group

The ways in which the quality of your programme is checked, both inside and outside the University, are:

· Regular module and programme reports which are monitored by the Faculty
· Programme validation, normally every five years.
· External examiners, who produce an annual report
· Accreditation approval processes carried out by the Royal Society of Chemistry
· A national Research Assessment Exercise (our research activity contributes directly to the quality of your learning experience)
· Institutional Review by the Quality Assurance Agency

Further details on the University's quality assurance processes are given in the *Quality Handbook.*

Criteria for admission

The University's Admissions Policy applies equally to all programmes of study. The following are the typical entry criteria to be used for selecting candidates for admission. The University's approved equivalencies for the requirements listed below will also be acceptable.

Alternative qualifications

Our admissions requirement is normally defined on the basis of A/AS levels, but an equivalent standard in other qualifications approved by the University is accepted. For example, we will also accept applications from candidates offering Scottish and Irish Highers, European and International Baccalaureate, Access and Foundation courses and overseas qualifications.
More information on the entry requirements for this programme can be found on the Chemistry webpage http://www.southampton.ac.uk/chemistry/undergraduate/courses.page?

Scottish Highers/Advanced Highers: AAAA at Higher level and AA at Advanced Higher to include Chemistry and one other acceptable science or mathematics subject.

Irish Leaving Certificate: minimum A1, A1, A1, A1, A1, A1 including Chemistry and one other acceptable science or Mathematics subject at Higher Level.

European Baccalaureate: Average of 85% or better across all units of study with a minimum of 8 in Chemistry and Mathematics.

Diploma and Advanced Diploma (Overseas applicants): We are happy to receive applications for this degree in chemistry from students who have taken college/polytechnic diplomas in chemistry and will make offers either for entry into the first year or second year. For second year entry, you must have achieved a very high standard in your diploma and your curriculum must have included the majority of the chemistry that we teach in our first year.

All programmes at the University of Southampton are taught and assessed in the medium of English (other than those in modern foreign languages). Therefore, all applicants must demonstrate they possess at least a minimum standard of English language proficiency. Our minimum standard entry requirements are an IELTS Band C, i.e.

Qualification	Grades	Subjects required	Subjects not accepted	EPQ Alternative offer (if applicable)	Contextual Alternative offer (if applicable)
International Baccalaureate	36 points on the IB scale, with a 6 in Chemistry and one further acceptable science subject at Higher Level. The same consideration will be given to IB students studying Chemistry, with no additional acceptable science/maths subject at Higher Level, as those A-level students, as detailed below.				
GCSE	If you are not studying Maths at A level (or an equivalent standard in other qualifications approved by				

	the University), we prefer an A or 7 grade in GCSE Mathematics, but a B or 6 grade will be considered. Otherwise, our minimum requirement is grade C or 4 in English. This is supplementary to your A level (or equivalent) qualifications.				
A Level	Our typical offers for students who are studying 3 A-levels is: AAA, for students taking Chemistry plus one other acceptable science or mathematics subject (2017 entry). Acceptable science/mathematics subjects include Physics, Mathematics, Further Mathematics, Biology, Human Biology, Geology, Geography and Psychology. 2018 entry requirements: AAA to include Chemistry and one further				

	science subject or AAB to include Chemistry and two further science subjects. A level science subjects considered include Biology, Human Biology, Physics, Maths, Further Maths, Psychology, Geography and Geology. Science practical components must be passed. General Studies, Critical Thinking and Use of Mathematics are excluded for entry. Each application is considered on its own merit. Standard offers are made based on the application as a whole, including combination of subjects taken, and predicted grades. Offers may be subject to adjustment, based on discussion with the applicant, formal interview (if deemed necessary), or				

	on a contextual basis. Under certain circumstances we may make an offer to an individual applicant which differs from those outlined above. Students studying Chemistry, with no additional acceptable science/maths subject, may be interviewed to determine suitability for the course. We may also in some circumstances, recommend an alternative offer for the BSc programme. However, our flexible programme structure would allow transfer to this MChem programme, pending good performance in Year 1.				

Mature applicants

Studying for a degree later in life can be extremely rewarding and mature students are often among our most successful.

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If you are over 21 and feel you would benefit from degree-level studies, we can be more flexible about our entry requirements. For full-time courses, selectors will expect you to demonstrate your commitment by means of some recent serious study, for example, one or two A level passes, successful completion of an Open University foundation course or an appropriate Access course. Your application will be considered on

individual merit and you may be asked to attend an interview.

Another popular option is to follow a certificate or diploma programme. These are available on a part time basis and most can be taken in the evenings, enabling you to continue to earn an income while you are studying. You do not need any formal qualifications to enrol.

Recognition of Prior Learning (RPL)

The University has a **Recognition of Prior Learning Policy**

Students are accepted under the University's recognition of prior learning policy; however, each case will be reviewed on an individual basis.

English Language Proficiency

The table below sets out the English proficiency requirements for this programme in terms of the IELTS test. We accept a range of other English proficiency tests including TOEFL and Cambridge Advanced/Proficiency. For full details of the recognised tests and the equivalent requirements in those tests please see *www.southampton.ac.uk/admissions-language*.

Overall	Reading	Writing	Speaking	Listening
6.5	5.5	5.5	5.5	5.5

Career Opportunities

Employability is about more than just getting a job. We believe in helping our students gain the necessary experience for a future career, along with the skills to identify opportunities and make the most of them. It is reassuring to know that Chemistry degrees are third only behind Medicine and Dentistry as the degree which offers the highest financial return over the term of the graduate's career, but the rewards of a BSc Chemistry degree lie at a deeper personal level and not just in terms of financial return.

During your years here you will have the opportunity to broaden your options by meeting employers, getting involved in volunteering activities, work placements and much more.

A significant proportion of our graduates decide to go into research by taking a PhD qualification, most of them staying in Southampton. But careers in industry and commerce are available even in the toughest economic times.

There are also research and teaching opportunities and the options to branch out into other fields such as medicine, pharmaceuticals, even finance, and the law and science journalism. This is because chemistry gives you the confidence to take on so many varied challenges in life.

With a Chemistry degree from the University of Southampton your career path will be limited only by the level of your commitment and determination.

External Examiner(s) for the programme

Name: Professor Nicholas Westwood - University of St. Andrews

Name: Professor Patrick Unwin - University of Warwick

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their Personal Academic Tutor in the first instance.

Please note: 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 s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme also have to pay for:

Additional Costs

Type	Details
Clothing	One laboratory coat and a pair of safety spectacles are provided at the start of the programme to each student. If these are lost the student must replace them at their own expense.
IT	Computer Discs or USB drives: Students are expected to provide their own portable data storage device. Software Licenses: All software is provided Hardware: It is advisable that students provide their own laptop or personal computer, although shared facilities are available across the University campus.
Stationery	You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc.). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks	Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source. Some modules suggest reading texts as optional background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module.
Laboratory Equipment and Materials	All laboratory equipment and materials are provided
Approved Calculators	Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers. The University approved models are Casio FX-570 and Casio FX-85GT Plus. These may be purchased from any source and no longer need to carry the University logo.
Printing and Photocopying Costs	Where possible, coursework such as essays; projects; dissertations is likely to be submitted on line. However, there are some items where it is not possible to submit on line and students will be asked to provide a printed copy. Current University printing costs can be found at http://www.southampton.ac.uk/isolutions/students/printing-for-students.page Please Note: Paper sizes not recognised by the printing devices will prompt you to select the size and then charge a minimum of 50p per black and white copy and a maximum of £1 per colour copy. You can pay for your printing by using the money loaders or by using print copy payment service by going to https://www.printcopypayments.soton.ac.uk/ Please remember that we are unable to refund any credit that has not been used by the end of your course, so please consider this when topping up your printing/copy account

	You will be given a printing allowance towards the costs of printing lecture handouts and/or practical scripts of £20 per Semester in Years 1-3, £20 in Semester 2 in Year 4. The University Print Centre also offer a printing and copying service as well as a dissertation/binding service. Current printing and copying costs can be found at http://www.southampton.ac.uk/printcentre/copyrooms/service.page They also provide a large format printing service, e.g. Academic posters. Details of current costs can be found at http://www.southampton.ac.uk/printcentre/exhibition/academicposters.page ?.

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at www.calendar.soton.ac.uk.

| | | Knowledge and Understanding | | | | | | | | | | | | | | Subject Specific Intellectual and Research Skills | | | | | | | | | | Subject Specific Practical Skills | | | | | | | | | | Transferable and generic skills | | | | | | | | | | | | | |