

## BSc (Hon) CHEMISTRY COURSE SPECIFICATION

Course Aim and Title	BSc (Hons) Chemistry
Intermediate Awards Available	Cert HE, Dip HE, BSc
Teaching Institution(s)	UEL on campus
Alternative Teaching Institutions (for local arrangements see final section of this specification)	
UEL Academic School	Health, Sport and Bioscience
UCAS Code	F100
Professional Body Accreditation	Royal Society of Chemistry
Relevant QAA Benchmark Statements	Chemistry
Additional Versions of this Course	BSc (Hons) Chemistry with Placement Year BSc (Hons) Chemistry with Foundation Year
Date Specification Last Updated	April 2019

### Course Aims and Learning Outcomes

The Aim of this Course:

Chemistry is the fundamental study of the structures, properties and reactions of all matter in existence throughout the universe and underpins the central sciences of Biology and Physics.

There are four main sub-disciplines of chemistry, and the course focuses on delivering a rigorous knowledge and understanding of all aspects of analytical, inorganic, organic and physical chemistry:

- Analytical chemistry involves qualitative and quantitative observations and spectroscopy
- Inorganic chemistry studies materials such as metals and their salts
- Organic chemistry involves the study of compounds containing primarily carbon.
- Physical chemistry measures the interaction of matter and energy.

This course is designed to give you the opportunity to develop:

- a broad and balanced knowledge and understanding of key chemical concepts
- a range of practical skills to understand and assess risks and work safely and competently in the laboratory
- the ability to apply standard methodology to the solution of problems in chemistry
- a knowledge and skills base to enable proceeding to graduate employment or to further studies in chemistry or multi-disciplinary areas involving chemistry.

What you will learn:

#### Knowledge

- All students will gain a rigorous knowledge and understanding of all aspects of the four sub-disciplines of analytical, inorganic, organic and physical chemistry.
- Mathematics is fundamental to success in any science so it will also be taught to a high level in the first year.
- The “Environmental Chemistry”, “Medicinal Chemistry” and “Natural Product Chemistry and Drug Discovery” Analytical chemistry modules extend the scope of Chemistry BSc (Hons) degree and are benefitted by the UEL Bioscience expertise.
- Students will acquire an understanding of the laboratory procedures and techniques used, which will allow the rapid acquisition of more specialist skills later in their career.
- An awareness of the wider implications of scientific research on society as a whole.

#### Thinking skills

- The ability to comprehend, analyze and criticize published information in Chemistry.
- The ability to formulate hypotheses with the minimum of assistance.
- The ability to use integrated approaches to problem solving.
- The ability to deal with topics expansively using reason and argument.

#### Subject-Based Practical skills

- The ability to analyze data from you own and other people’s experiments and to interpret them in the light of published work
- The ability to select and apply a range of practical skills relevant to your chosen area(s) of chemistry.
- The ability to design and carry out experimental work.
- The ability to effectively communicate your work to scientists and the general public
- The ability to select and utilize appropriate computer software
- The ability to carry out literature searches effectively to find information on a specific topic

#### Skills for life and work (general skills)

- The development of your own style of independent learning
- The ability to communicate ideas and experiments to others and to debate relevant scientific and/or ethical skills
- IT skills
- Analytical skills
- Communication skills, written and oral
- Team work
- The development of a sense of appropriate professional scientific conduct and ethical responsibility
- Time management

- Confidence

## Learning and Teaching

Knowledge is developed through

- Lectures and tutorials
- Workshops and practicals
- Guided reading
- Internet and Moodle
- Knowledge-based activities including external visits.
- Independent Learning

Thinking skills are developed through

- Independent reading
- Computer aided learning
- Preparing for tutorials, seminars and workshops
- Presentations
- Completing coursework assignments (including data analysis, essays, presentations, etc.)
- Reflective activities with feedback
- Critical evaluation of chemical literature and related chemical research

Practical skills are developed through

- Library, practical and fieldwork
- Chemical and drug-discovery specific computational simulations, software and IT
- Research activities

Skills for life and work (general skills) are developed through

- Managing time
- Developing IT skills
- Presenting ideas and arguments in a structured manner – written and oral communication
- Problem solving
- Interacting with other people and team work
- Project work

## Assessment

Knowledge is assessed by

- Evidence of reading and comprehension of the topics covered in the modules being assessed. This will be particularly apparent in essay work and examinations
- Ability to describe, explain and discuss various aspects of the course material in the context of class tutorials, group work, presentations and other pieces of assessed coursework for the modules.

Thinking skills are assessed by

- Coursework, examinations, project work
- In the final year particularly, thinking skills will be assessed by the ability to integrate the information presented separately in any module for the construction of arguments, comparisons and hypotheses as required to address the specific assessments in each module

Practical skills are assessed by

- The ability to carry out laboratory practical work effectively, within the timeframe allocated
- The ability to interpret and report on work carried out in the laboratory
- The ability to complete assignments using appropriate resources
- Evidence of logical planning and management of time in the preparation of materials for assessment

Skills for life and work (general skills) are assessed by

- The ability to work to strict deadlines
- The ability to demonstrate problem solving abilities
- Demonstration of effective oral and written communication skills
- Evidence of general numerical and mathematic skills
- Evidence of interpersonal skills such as teamwork and/or team leadership
- Demonstration of the professionalism required to be a chemist

Students with disabilities and/or particular learning needs should discuss assessments with the Course Leader to ensure they are able to fully engage with all assessment within the course.

## Work or Study Placements

The third year of the course might be spent in a Sandwich Placement. This is optional and placements are not guaranteed but selected by a competitive process and will be based in companies/Institutions relevant to Pharmaceutical scientists

## Course Structure

All courses are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

- 3 Equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree course.
- 4 Equivalent in standard to the first year of a full-time undergraduate degree course.
- 5 Equivalent in standard to the second year of a full-time undergraduate degree course.
- 6 Equivalent in standard to the third year of a full-time undergraduate degree course.
- 7 Equivalent in standard to a Masters degree.

Courses are made up of modules that are each credit weighted.

The module structure of this course:

<b>Level</b>	<b>Module Code</b>	<b>Module Title</b>	<b>Credit Weighting</b>	<b>Core/Option</b>	<b>Available by Distance Learning? Y/N</b>
4	BS4000	Professional Practice in Science (Mental Wealth)	20	Core	N
4	BS4108	Fundamentals of Organic Chemistry	20	Core	N
4	BS4104	Mathematics for Scientists	20	Core	N
4	BS4103	Fundamentals of Analytical Chemistry	20	Core	N
4	BS4109	Fundamentals of Inorganic Chemistry	20	Core	N

4	BS4110	Fundamentals of Physical Chemistry	20	Core	N
4	BS4099	L4 Optional Short Placement	0	O	N
5	BS5107	Advanced Topics in Analytical Chemistry	20	Core	N
5	BS5108	Topics in Environmental and Green Chemistry	20	Core	N
5	BS5109	Topics in Inorganic Chemistry	20	Core	N
5	BS5110	Research and Career Development (Mental Wealth)	20	Core	N
5	BS5115	Organic Synthesis	20	Core	N
5	BS5116	Topics in Physical Chemistry	20	Core	N
5	BS5012	L5 Optional Short Work Placement	0	O	N
5	BS5013	Year Long Placement	0	O	N
6	BS6104	Protein Biochemistry and Proteomics	20	O	N
6	BS6108	Natural Products Discovery	20	Core	N
6	BS6109	Medicinal Chemistry	20	O	N

6	BS6112	Application of Analytical Techniques in Pharmaceutical Quality Control	20	Core	N
6	BS6113	Research Project and Career Enhancement Portfolio (Mental Wealth)	20	Core	N
6	BS6122	Physical, Theoretical and Computational Chemistry	20	Core	N
6	BS6123	Bioinorganic Chemistry	20	Core	N
6	BS6099	L6 Optional Short Work Placement	0	O	N
<p><i>Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, in order to create the best learning experience.</i></p>					

The overall credit-rating of this course is 360 credits. If for some reason you are unable to achieve this credit you may be entitled to an intermediate award, the level of the award will depend on the amount of credit you have accumulated. You can read the University Student Policies and Regulations on the UEL website.

### Course Specific Regulations

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### Typical Duration

<p>It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.</p>
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## UG

The expected duration of this course is 3 years full-time or 4 years part-time.

A student cannot normally continue study on a course after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted. The limit for completion of a course in part time mode is 7 years from first enrolment.

## Further Information

More information about this course is available from:

- The UEL web site ([www.uel.ac.uk](http://www.uel.ac.uk))
- The course handbook
- Module study guides
- UEL Manual of General Regulations (available on the UEL website)
- UEL Quality Manual (available on the UEL website)
- School web pages
- <https://www.rsc.org/> Royal Society of Chemistry

All UEL courses are subject to thorough course approval procedures before we allow them to commence. We also constantly monitor, review and enhance our courses by listening to student and employer views and the views of external examiners and advisors.

Additional costs:

None

## Alternative Locations of Delivery

The courses are expected to be of sufficient breadth and depth to be accredited by the Royal Society of Chemistry at the time of our first cohort of students' graduation.