

Module Specification

Module Title Module Code
Credit Value Level Mode of Delivery Semester

Pre-requisite modules	Co-requisite modules	Overlapping modules
CHE301		

1) Content Description

Provide a description of the module, as it will appear in the Module Directory and on the Student Information System (approx. 70-80 words).

This is a level 6 module, but is only available to third year students registered on a four year chemistry-based MSci programme. The module provides experience of advanced methodology in practical chemistry, including experience of using more advanced (research-level) analytical and preparative instrumentation. Students undertake a series of extended experimental procedures and investigations, and are required to produce a detailed report for each.

2) Module Aims

Specify the aims of the module, i.e. the broad educational purposes for offering this module.

This module aims to provide students with a good working knowledge of a range of advanced methodology and procedures in practical chemistry, including experience of using more advanced (research-level) analytical and preparative instrumentation. More generally, the module also aims to bridge the gap between BSc level laboratories which are demonstrator led with a known outcome and the 4th year MSci research-driven project where the outcomes are rarely known. This will be achieved by the students completing a number of short discovery-led investigative mini-projects. By way of illustration, these mini-projects might include, for example, the synthesis of small drugs or natural products via novel routes, determining the structure of unknown compounds using multi-dimensional NMR, and determining the structure of solids using powder X-diffraction.

3) Learning Outcomes

Identify the learning outcomes for this module, i.e. knowledge, skills and attributes to be developed through completion of this module. Outcomes should be referenced to the relevant [QAA benchmark statements](#) and the [Framework for Higher Education Qualifications in England, Wales and Northern Ireland \(2008\)](#). The [SEEC Credit Level Descriptors for Further and Higher Education 2003](#) and [Queen Mary Statement of Graduate Attributes](#) should also be used as a guiding framework for curriculum design.

Academic Content:	
A 1	Advanced knowledge of facts, theories and concepts relating to the specific investigations undertaken.
A 2	Advanced methods for the synthesis, isolation and purification of a wide variety of chemical compounds (e.g. synthesis under inert atmosphere, methods of automated purification).
A 3	Principles relating to a wide range of analytical techniques, including instrumental techniques and various advanced spectroscopic techniques (e.g. multi-dimensional nmr and GC-MS).

Disciplinary skills - able to:

B1	Conduct a literature and database search in order to determine the best way to approach a previously unseen problem.
B2	Conduct multi-step laboratory procedures, with proficiency and limited supervision, and with appreciation of the suitability and limitations of different laboratory procedures.
B3	Operate a range of advanced laboratory instrumentation, with appropriate selection of process and measurement parameters.
B4	Critically evaluate scientific information and experimental data.
B5	Produce a report on an experiment to a publishable standard.

Attributes:	
C1	Produce analyses which are grounded in evidence
C2	Apply analytical skills to investigate unfamiliar problems
C3	Conduct investigations individually and in collaboration with others.

4) Reading List

Provide an indicative reading list for the module. This should include key texts and/or journals but **should not** be an exhaustive list of materials.

Students are given references to relevant books and primary literature within the procedure for each investigation.

5) Teaching and Learning Profile

Provide details of the method of delivery (lectures, seminars, fieldwork, practical classes, etc.) used to enable the achievement of learning outcomes and an indicative number of hours for each activity to give an overall picture of the workload a student taking the module would be expected to undertake. This information will form the Key Information Set for each undergraduate programme and will be used to populate the KIS widget found on the QMUL programme information pages. More information can be found [online](#) about KIS. You may also wish to refer to the [QAA guidance on contact hours](#) when completing this section.

Activity Type	KIS Category	Time Spent (in hours)
Practical Classes and Workshops	Scheduled	100
Total		100

Specify the total module notional study hours. This should be a total of the hours given for each activity. The notional study hours for each academic credit point is 10. A 15 credit point module therefore represents 150 notional study hours.

Activity Type	Total Time Spent (in hours)	Percentage of Time Spent
Scheduled learning and teaching	100	67
Placement	0	0
Independent Study	50	33
Total	150	100

Use the information provided in the box above to specify the total time spent and the percentage time spent in each category of teaching and learning activity.

6) Assessment Profile

Provide details of the assessment methods used to assess the achievement of learning outcomes.

Description of	Assessment Type	KIS Category	Duration/Length	Percentage Weighting	Final element of	Qualifying Mark
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Assessment					assessment	
Coursework	Written Assignment, inc Essay	Coursework		100%	Yes	

Final element of assessment: The assessment that takes place last. There should normally be only one element of assessment marked as final unless two assessment or submission dates occur on the same day.

Qualifying mark: A specified minimum mark that must be obtained in one or more elements of assessment in order to pass a module. This is in addition to, and distinct from, the requirement to achieve a pass in the module mark to pass the module.

Reassessment

Provide details of the reassessment methods used, specifying whether reassessment is either standard reassessment or synoptic reassessment.

- Standard Reassessment
 Synoptic Reassessment

Synoptic reassessment details (if you have indicated synoptic reassessment above, please give details)		
Brief Description of Assessment	Assessment Type	Duration/Length of Examination/ Coursework