

Module Specification

Module Title Module Code
Credit Value Level Mode of Delivery Semester

Pre-requisite modules	Co-requisite modules	Overlapping modules
CHE304		

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 module will cover various advanced concepts of colloidal systems and their application. An overview of the concepts involved such as surface tension and surfactants, and monolayers such as lipids will be given. We shall investigate the application of colloids and their structures and characterisation. Techniques such as light scattering, small angle X-ray and neutron scattering as well as rheology of these systems will be covered. Various examples in pharmaceuticals and natural products design will be discussed.

2) Module Aims

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

This module is designed to give students an understanding of advanced physical chemistry, including colloidal systems and their application, as well as insight into advanced thermodynamics and nanochemistry. An overview of the concepts involved such as surface tension and surfactants, and monolayers such as lipids will be given. We shall investigate the application of colloids and their structures and characterisation. Techniques such as light scattering, small angle X-ray and neutron scattering as well as rheology of these systems will be covered. Various examples in pharmaceuticals and natural products design will be discussed. The statistical interpretation of thermodynamics functions will be discussed. An introduction to nanotechnology and nanobiotechnology will also be part of the module

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:

A1	Understanding of Colloids and Emulsions systems and the interaction forces involved.
A2	Understanding of the role of charge and steric moieties in colloidal stabilization.
A3	Advanced characterisation techniques, SANS, DLS
A4	Applications of colloids in drug delivery
A5	Statistical interpretation of thermodynamics functions.
A6	Introduction to nano and nanobiotechnology and advanced applications of nanotechnology.

Disciplinary skills - able to:	
B1	Ability to solve numerical problems and produce, to deadlines, clear solutions to problems for continuous assessment marks and tutorial discussion.
B2	Improve planning and organisational skills.
B3	Overall the module will improve the students' ability to handle information.

Attributes:	
C1	Independent study, including use of a wide-range of information resources to supplement supplied lecture notes.
C2	Ability to solve numerical problems and produce, to deadlines, clear solutions to problems for continuous assessment and tutorial discussion
C3	Improve planning and organizational skills and ability to handle information.

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.

For this module you must have access both to a basic text on Physical Chemistry and published articles. The course is not tied to a single

Textbook .A list of some supportive texts include;

"Introduction to soft Matter", Ian W. Hamley, John Wiley & Sons, LTD, ISBN 0471899518

"Introduction to Colloid and Surface Chemistry" Duncan J. Shaw Butterworths, ISBN 0408710497

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	10
Lecture	Scheduled	22
Fieldwork	Scheduled	
Total		32 Hours

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	32	21
Placement		
Independent Study	120	79
Total	152	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	Assessment Type	KIS Category	Duration/Length	Percentage Weighting	Final element of assessment	Qualifying Mark
Coursework	Written assignment, including essay	Coursework		10	No	
Examination	Written Exam	2.5 h		90	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
Resit Exam	Written Exam	2.5h