

## Module Specification

Module Title  Module Code   
Credit Value  Level  Mode of Delivery  Semester

Pre-requisite modules	Co-requisite modules	Overlapping modules
CHE103 or CHE103A CHE203 or CHE203A recommended		

### 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).

The module covers aspects of modern inorganic chemistry. It is essentially divided into two parts: modern solid state chemistry and aspects of modern organometallic chemistry. A basic introduction to each topic is given before specialist topics are discussed. The specialist topics vary from year to year.

### 2) Module Aims

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

This module is a third year option which aims to give a working understanding of modern inorganic chemistry using contemporary examples. Many of the areas covered such as solid state and metalloorganic chemistry have not been encountered in earlier modules.

### 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	To be able to define the term "stable" as applied to a range of organometallic compounds
A2	To be able to provide a valence electron count for a range of organometallic compounds and predict reactivity in terms of the 18 electron rule
A3	To be able to explain the evidence for accepted mechanistic aspects of addition, reductive elimination and migratory insertion reactions
A4	To be able to examine and comment on catalytic cycles based on the above reactions and to discuss aspects of bonding in $\sigma$ -donor/acceptor metal hydrocarbon systems

Disciplinary skills - able to:	
B1	This module will provide students with detailed knowledge of specific topics in modern inorganic chemistry. Many of the basic skills learned should be applicable to other areas such as surface science and general inorganic chemistry.

Attributes:	
C1	The module will enhance students' scientific skills through lecture material and associated homework exercises. The module relies upon background knowledge from reading and from previous modules. The student's skills in independent learning are therefore enhanced.

#### 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 reminded that background reading is essential and it is assumed that all students will reinforce the material provided in lectures by consulting appropriate **text** books.  
Recommended texts include the following:

- (1) Solid State Chemistry and its Applications, A.R. West, Wiley. (Library ref: QD478 WES, Short Loan)
- (2) Basic Solid State Chemistry, A.R. West, Wiley (Library ref: QD478 WES, Short Loan)
- (3) Solid State Chemistry an Introduction L.Smart & E.Moore., Chapman & Hall (QD478 SMA, Short Loan)
- (4) Advanced Inorganic Chemistry, 5th edition, Interscience, 1988 F.A.Cotton & G.Wilkinson, (Library ref: QD151 COT).
- (5) Chemistry of the Elements, Pregammon, 1984, N.N.Greenwood, A.Earnshaw, (Library ref: QD151 GRE)
- (6) The Physics and Chemistry of Solids. S.Elliott, Wiley 1998
- (7) Organometallics: a Concise Introduction, Ch. Elschenbroich and A.Salzer, VCH 2nd edition, 1989 (Lib ref: QD411 ELS, Short Loan)
- (8) The Organometallic Chemistry of the Transition Metals, R.H. Crabtree, Wiley, 1994, (Lib. ref: QD411 CRA, Short Loan)
- (9) Metallo-organic Chemistry, A.J.Pearson, Wiley, 1985, (Lib ref: QD411 PEA)
- (10) Basic Organometallic Chemistry, I.Haiduc and J.J.Zuckerman, (Lib ref: QD411 HAI)
- (11) Principles and Applications of Organotransition Metal Chemistry, P Collman and L.S.Hegeudus, 1980, (Lib.ref: QD411 Col)

#### 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)
Lectures	Scheduled	22
Workshops	Scheduled	6
Total		28

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	28	18.7
Placement	0	0
Independent Study	122	81.3
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	Assessment Type	KIS Category	Duration/Length	Percentage Weighting	Final element of assessment	Qualifying Mark
Examination	Exam	Exam	2.5 Hours	90%	Yes	
Coursework	Written assignment	Coursework		10%	No	

**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 Examination	Examination	2 Hours and 30 Minutes