

Liverpool John Moores University

Title: Chemistry 1
Status: Definitive
Code: **3516IFESG** (124188)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Study Group

Team	Leader
Jack Mullett	Y

Academic Level: FHEQ3
Credit Value: 10
Total Delivered Hours: 40.5
Total Learning Hours: 100
Private Study: 59.5

Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	21
Seminar	12
Workshop	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	100	1.5

Aims

To provide students with an understanding of the core concepts of chemistry. This will include physical, inorganic and organic chemistry, with an overview of contemporary science.

Learning Outcomes

After completing the module the student should be able to:

- 1 Explain atomic structure and interactions between molecules.
- 2 Solve quantitative problems (stoichiometric) involving chemical formulas and equations.
- 3 Present chemical data in a clear manner.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Examination	1	2	3
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Outline Syllabus

Atomic structure and bonding – elements, atoms, electrons, bonding (covalent, coordinate, polar, ionic), shapes of molecules, periodicity.

Numbers – moles and molarity, molecular mass, units, dilutions, percent composition.

Introduction to organic chemistry – carbon, nomenclature, stereochemistry, basic functional group chemistry and Isomerism - optical, geometric.

Kinetics – rate equations, reaction mechanisms, rate limiting step, activation energy, equilibrium, free energy.

Learning Activities

A mix of lectures, seminars and workshops with in-class testing and homework to support independent learning. In each session the theory session is followed by a number of worked examples which are typical of, and lead to individual exercises for each unit. By listening to the theory and reading through the worked examples, the student should be able to make considerable progress with the exercise that follows.

Notes

This module introduces the core concepts of inorganic, organic and physical chemistry.