

Liverpool John Moores University

Title: FUNDAMENTALS OF ORGANIC CHEMISTRY
Status: Definitive
Code: **3456FNDSCI** (125827)
Version Start Date: 01-08-2021

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Raymond Fox	Y
Steve Enoch	
Fyaz Ismail	
Ian Bradshaw	

Academic Level: FHEQ3 **Credit Value:** 20 **Total Delivered Hours:** 60
Total Learning Hours: 200 **Private Study:** 140

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	34
Practical	12
Workshop	12

Grading Basis: Pass/Not Pass

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	exam	Examination: multiple choice and short answer questions	60	2
Report	Rpt	Coursework: Practical reports	40	

Aims

The module is intended to introduce the structure and bonding of simple organic molecules. The properties, preparation, reactivity and reaction mechanisms will be

explored for a number of functional groups. The relevance of organic chemistry to everyday life and biological processes will be developed.

Learning Outcomes

After completing the module the student should be able to:

- 1 Recall the structure and nomenclature of organic compounds
- 2 Describe the bonding and shape of organic molecules
- 3 Recall the principles of the reactivity of organic molecules
- 4 Recall the properties, preparation and reactions of a range of organic functional groups
- 5 Describe the reaction mechanisms of a range of organic molecule types
- 6 Apply knowledge of the properties and reactions of organic compounds

Learning Outcomes of Assessments

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

Exam	1	2	3	4	5	6
Report	4	6				

Outline Syllabus

Nomenclature and Isomerism: Empirical formula, homologous series and functional group. Application of IUPAC rules to nomenclature of simple organic compounds. Constitutional Isomers, geometric isomers, chirality and optical isomers. Hydrocarbons. Alkanes, mixtures of alkanes found in petroleum, industrial processes, properties, combustion, economic and environmental effects. Characteristic Organic Reactions. Functional groups, homolytic and heterolytic fission, bond making/breaking, Free radicals, nucleophiles and electrophiles, ionic mechanisms, types of organic reactions, Simple types of organic mechanism, addition, elimination, substitution. Preparation and reactions of simple organic functional groups such as alkenes, alkynes, halides, alcohols, ethers, carbonyl compounds, carboxylic acids and derivatives. Oxidation and reduction reactions. Simple functional group interconversions. Structure and reactions of benzene. Preparation of monosubstituted derivatives. Preparation and properties of polymers

Learning Activities

Lectures supported by workshops, on-line material and practical work.

Notes

This module is intended to give students a basic introduction to pre-degree chemistry that is built upon in other foundation level chemistry modules

To be awarded a 'pass' in this module, a mark of least 55% must be achieved in each assessment component.