

Module Information

2022.01, Approved

Summary Information

Module Code	3408FNDSCI
Formal Module Title	Fundamentals of Organic Chemistry
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 3
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

Learning Methods

Learning Method Type	Hours
Lecture	34
Practical	12
Workshop	12

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

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.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Recall the structure and nomenclature of organic compounds
MLO2	2	Describe the bonding and shape of organic molecules
MLO3	3	Recall the principles of the reactivity of organic molecules
MLO4	4	Recall the properties, preparation and reactions of a range of organic functional groups
MLO5	5	Describe the reaction mechanisms of a range of organic molecule types
MLO6	6	Apply knowledge of the properties and reactions of organic compounds

Module Content

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
Module Overview	This 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 also be developed.
Additional Information	This module is intended to give students a basic introduction to pre-degree chemistry that is built upon in other foundation level chemistry modules

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Exam	60	2	MLO1, MLO2, MLO3, MLO4, MLO5, MLO6
Dissertation	Report	40	0	MLO4, MLO6

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Raymond Fox	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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