

MODULE DESCRIPTOR

Module Title

Fundamentals of Organic Chemistry

Reference	PL2604	Version	1
Created	October 2023	SCQF Level	SCQF 8
Approved	May 2011	SCQF Points	15
Amended	September 2023	ECTS Points	7.5

Aims of Module

To develop students understanding of the various classes of drugs, their origin or synthetic pathway, and introduce their pharmacology in a forensic context.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Report on the chemical composition, origin and synthesis of certain pharmaceutical and illicit drugs, including their uses and effects.
- 2 Report on the processes involved in the movement of a drug through the body's biological system, namely absorption, distribution, metabolism and elimination.
- 3 Show a basic knowledge of Nuclear Magnetic Resonance by characterising simple drug molecules from spectra.
- 4 Show a knowledge of procedures used, problem solving, interpretation of experimental results and reporting of data in practical organic chemistry.

Indicative Module Content

Review of functional groups and functional group interconversions involved in the synthesis of pharmaceutical drugs and drugs of abuse. Detail certain synthetic routes utilised in the their production. Introduction to absorption, distribution, metabolism and excretion of drugs, their uses, biological action, effects and toxicology in a forensic context. Introduction to proton and carbon Nuclear Magnetic Resonance and its application to identifying drugs. This module aligns with United Nations Sustainable Development Goal 3: Good Health and Well-being. Students learn analytical skills in the analysis and identification of substances including drugs and toxins, and the impact of these substances on the human body.

Module Delivery

This is a lecture/tutorial based module supplemented with laboratory exercises and guided reading.

Indicative Student Workload

Full Time Part Time

Contact Hours

40

N/A

Non-Contact Hours

110

N/A

Placement/Work-Based Learning Experience [Notional] Hours

N/A

N/A

TOTAL

150

N/A

*Actual Placement hours for professional, statutory or regulatory body***ASSESSMENT PLAN***If a major/minor model is used and box is ticked, % weightings below are indicative only.***Component 1**

Type: Coursework Weighting: 100% Outcomes Assessed: 1, 2, 3, 4

Description: Portfolio comprising a Lab report plus short essays/problem solving on set topics.

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

Component 1 (Portfolio) comprises 100%. A minimum of a Grade D is required to pass the module.

Module Grade

Minimum Requirements to achieve Module Grade:

A

A

B

B

C

C

D

D

E

E

F

F

NS

Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module

Successful completion of Stage 1 Forensic and Analytical Science or equivalent.

Corequisites for module

None.

Precluded Modules

None.

INDICATIVE BIBLIOGRAPHY

- 1 McMURRY, J. *Organic Chemistry*. Current Edition. Brooks/Cole
- 2 BROWN, W.H., FOOTE, C.S., IVERSON, B.L. and ANSLYN, E.V. *Organic Chemistry*. Current Edition. Brooks/Cole.
- 3 LOUDON, G. M. *Organic Chemistry*. Current Edition. Oxford University Press.
- 4 PATRICK, G. *Introduction to Medicinal Chemistry*. Current Edition. Oxford University Press.