

MODULE DESCRIPTOR

Module Title

Pharmaceutical Chemistry

Reference	PL1001	Version	3
Created	February 2024	SCQF Level	SCQF 7
Approved	July 2022	SCQF Points	30
Amended	April 2024	ECTS Points	15

Aims of Module

To provide an introduction to medicinal chemistry appropriate for the study and understanding of structures, properties and behaviours of molecules as applied to and in the context of pharmaceutical sciences.

Learning Outcomes for Module

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

- 1 Demonstrate a knowledge of selected aspects of medicinal chemistry.
- 2 Demonstrate an understanding of the origins, structures, properties and behaviours of molecules within the context of pharmaceutical sciences, including drugs, excipients and receptors at a molecular level.
- 3 Demonstrate a knowledge of procedures used, problem solving and reporting of data in practical medicinal chemistry.

Indicative Module Content

This module focuses on the structure of molecules: electron configuration, orbitals, bonding, hybridisation, intermolecular forces, stereochemistry. Properties of solids, liquids & gases. Functional Groups: aliphatic, aromatic, heteroaromatic; reaction types. Drug structure, function, action, Lipinski's Rules. Basic laboratory skills in practical medicinal and pharmaceutical chemistry are introduced while being cognisant of how the subject feeds into the UNSDGs 3, 4 and 12. The module highlights the need for ensuring health and well-being (SGD 3 good health and well-being), while making conscious decisions about the use and disposal of resources required to provide a quality learning experience with minimal environmental impact (SDG 12 responsible consumption and production).

Module Delivery

Lectures and coursework sessions (consisting of practical exercises including laboratory work, data interpretation, computer-based exercises and tutorials). Directed study (consisting of paper and electronic based materials often incorporating self-assessment and directed reading).

Indicative Student Workload

	Full Time	Part Time
Contact Hours	80	N/A
Non-Contact Hours	220	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Examination	Weighting:	100%	Outcomes Assessed:	1, 2, 3
Description:	Closed book written examination				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

Component 1 (Examination) 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	None, in addition to course requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 BARBER, J. and ROSTON, C., 2021. *Pharmaceutical Chemistry*. Second Edition. Oxford: Oxford University Press.
- 2 PATRICK, G., 2017. *An Introduction to Medicinal Chemistry*. Sixth Edition. Oxford: Oxford University Press.
- 3 KOTZ, J.C., TREICHEL, P.M., TOWNSEND, J. AND TREICHEL, D., 2015. *Chemistry and Chemical Reactivity*. Ninth Edition. Australia: Cengage Learning.
- 4 CAIRNS, D., 2012. *Essentials of Pharmaceutical Chemistry*. Fourth Edition. London: Pharmaceutical Press.
- 5 LOUDON, G.M., 2016. *Organic Chemistry*. Sixth Edition. Oxford: Oxford University Press.