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## MODULE DESCRIPTOR

### Module Title

Pharmaceutical Chemistry

Reference	PH1135	Version	2
Created	September 2018	SCQF Level	SCQF 7
Approved	July 2017	SCQF Points	45
Amended	September 2018	ECTS Points	22.5

### 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 which would include 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.
- 2 Demonstrate a knowledge of procedures used, problem solving and reporting of data in practical medicinal chemistry.

### Indicative Module Content

Structure of molecules: electron configuration, orbitals, bonding, hybridisation, intermolecular forces, stereochemistry. Properties of solids, liquids & gases. Functional Groups: aliphatic, aromatic, heteroaromatic; reaction types. Bio Macromolecules: nucleic acids, proteins, carbohydrates, lipids. Origin of drugs: pharmacognosy, natural products. Drug structure, function, action, Lipinski's Rules. Basic laboratory skills in practical medicinal and pharmaceutical chemistry.

### Module Delivery

This is a lecture based module supplemented with formative quizzes, tutorials, practical laboratory classes and guided reading.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	107	N/A
Non-Contact Hours	343	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	450	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:	70%	Outcomes Assessed:	1
Description:	Closed book written examination				

**Component 2**

Type:	Coursework	Weighting:	30%	Outcomes Assessed:	2
Description:	An individual written laboratory report				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

To pass this module, the student MUST achieve a module Grade of Grade D or better and a minimum mark of 40% in C1 and C2.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	When 70% of the mark for C1 added to 30% of the mark for C2 is 70% or more.
<b>B</b>	When 70% of the mark for C1 added to 30% of the mark for C2 is 60-69%.
<b>C</b>	When 70% of the mark for C1 added to 30% of the mark for C2 is 50-59%.
<b>D</b>	When 70% of the mark for C1 added to 30% of the mark for C2 is 40-49%.
<b>E</b>	When 70% of the mark for C1 added to 30% of the mark for C2 is 35% or more but less than 40% in C1 and/or C2.
<b>F</b>	When 70% of the mark for C1 added to 30% of the mark for C2 is less than 35%.
<b>NS</b>	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. *Pharmaceutical Chemistry*. Current Edition. Oxford University Press.
- 2 PATRICK, G. *An Introduction to Medicinal Chemistry*. Current Edition. Oxford University Press.
- 3 KOTZ, J.C., TREICHEL, P.M., TOWNSEND, J. AND TREICHEL, D. *Chemistry and Chemical Reactivity*. Current Edition, Thomson-Brookes/Cole.
- 4 CAIRNS, D. *Essentials of Pharmaceutical Chemistry*. Current Edition. Pharmaceutical Press.
- 5 LOUDON, G.M., 2016. *Organic Chemistry*. Sixth Edition. Oxford: Oxford University Press.
- 6 LOUDON, G.M. *Organic Chemistry*. Current Edition. Oxford University Press.