MODULE DESCRIPTOR

Module Title

Chemical And Biomolecular Science

Reference	PL1802	Version	1
Created	October 2022	SCQF Level	SCQF 7
Approved	June 2023	SCQF Points	30
Amended		ECTS Points	15

Aims of Module

To provide students with the knowledge and understanding of the basic principles of general chemistry, biochemistry, and biomolecules.

Learning Outcomes for Module

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

1	Demonstrate knowledge of the basic concepts and principles of atomic structure, bonding, chemical equations, the electromagnetic spectrum, and ionic equilibria.
2	Demonstrate knowledge of the structure, function, and typical reactions of various classes of organic molecules and biomolecules.
3	Demonstrate knowledge of the structure, function and role of biomolecules.

Indicative Module Content

Atoms, compounds and chemical bonding. Electromagnetic spectrum. Molecular interactions. Moles, concentrations and dilutions. Hydrocarbons. Functional groups. Molecular shape and structure. Stereochemistry. Biological macromolecules. Chemical reactions, oxidation and reduction. Reaction mechanisms. Energy. Equilibria. Kinetics. Acids, bases and buffer solutions. Enzyme structure, activity, control, and modifications. Bioenergetics, catabolism and anabolism.

Module Delivery

Theoretical material will be delivered by lectures and supported by tutorials, online support material and guided reading.

Module Ref:	PL1802 v1

Indicative Student Workload	Full Time	Part Time
Contact Hours	70	N/A
Non-Contact Hours	230	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	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:	Examination	Weighting:	100%	Outcomes Assessed:	1, 2, 3
Description:	Closed book examination				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

Component 1 (EX1) comprises 100% of the module grade. 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 entry requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	STRYER, L., et al. 2019. Biochemistry. 9th Edition. Freeman.
2	BRUICE, P.Y. et al. 2016. Organic Chemistry. 8th Edition. Pearson
3	ENGEL, P. 2009. Pain-free biochemistry: an essential guide for the health sciences. 1st Edition. Wiley.
4	KOTZ, J.C., TREICHEL, P. and TOWNSEND, JR. 2018. Chemistry & Chemical Reactivity. 1st Edition. Brookes/Cole.
5	RAYMOND, K.W. 2013. General, organic and biological chemistry: an integrated approach. 1st Edition. Wiley.
6	CROWE J. and BRADSHAW T. 2021. Chemistry for the Biosciences: The Essential Concepts. 2nd Edition. OUP.