

## MODULE DESCRIPTOR

### Module Title

Biomolecular Science

Reference	PL1026	Version	2
Created	February 2023	SCQF Level	SCQF 7
Approved	June 2022	SCQF Points	15
Amended	June 2023	ECTS Points	7.5

### Aims of Module

To provide students with an understanding of the basic principles of biochemistry, and the structure and chemical properties of the main biomolecules.

### Learning Outcomes for Module

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

- 1 Demonstrate knowledge of the structures and functions of the main biomolecules.
- 2 Demonstrate knowledge of the mechanism of action of enzymes and factors which affect their activity.
- 3 Demonstrate understanding of the role of enzymes in metabolic pathways and how these can be controlled.
- 4 Demonstrate the ability to handle data and maintain an accurate record of laboratory work.

### Indicative Module Content

Biomolecules: lipids, carbohydrates, proteins, nucleic acids and their structures, properties and functions within living organisms. Stereochemistry. The role of enzymes in catalysis, the active site, enzyme specificity, factors affecting enzymic activity. Measurement of enzymic activity. Enzymes within cells, compartmentalisation. Control of enzymic activity, allosteric enzymes, zymogens and covalent modification. Consequences of enzymic deficiency. Bioenergetics. Catabolism and anabolism.

### Module Delivery

This is a lecture based module supplemented by tutorials, practical laboratory classes, on-line support material 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: Examination Weighting: 100% Outcomes Assessed: 1, 2, 3, 4

Description: Closed book examination

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

Component 1 (examination, EX1) comprises 100% of the module grade. A minimum of Module 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 BERG, J.M., et al. (2012) *Biochemistry*. Freeman.
- 2 BETTELHEIM, F.A., et al. (2016) *Introduction to general, organic and biochemistry*. Brooks/Cole, Cengage Learning.
- 3 ENGEL, P. (2010) *Pain-free biochemistry: an essential guide for the health sciences*. Wiley-Blackwell.
- 4 RAYMOND, K.W. (2014) *General, organic and biological chemistry: an integrated approach*. Oxford: Wiley.