Module Specification

Module Title	Biomolecules of Life					Module Code	BMD123
Credit Value	15	Level	4	Mode of Delivery	On Campus		Semester B

Pre-requisite modules	Co-requisite modules	Overlapping modules

1) Content Description

Provide a description of the module, as it will appear in the Module Directory and on the Student Information System (approx. 70-80 words).

The module will cover amino acids, the fundamentals of protein structure, simple and complex sugars, lipids, and membrane structures. The basics of enzyme catalysis and kinetics with specific case studies. Ion transport, and other transport proteins. The utilisation of proteins and soluble cofactors to generate and store metabolic energy. The basics of metabolism in glycolysis and the citric acid cycle. ATP synthesis and membrane bound electron transfer in mitochondria. Vitamins and their functional role in the body. Molecular motors, such as muscles that consume metabolic energy.

2) Module Aims

Specify the aims of the module, i.e. the broad educational purposes for offering this module.

The aims of the module are to:

- Give Biomedical Sciences students a basic understanding of the key chemical reactions that underpin healthy and diseased states.
- Providing a fundamental understanding of biomolecule structure, the link between structure and function and how complex molecules and organisms are made of simple components.
- Explain how chemical reactions are catalysed and regulated in biological systems.
- Detail the role of these biomolecules in the generation, utilisation, storage, and regulation of metabolic energy.

3) Learning Outcomes

Identify the learning outcomes for this module, i.e. knowledge, skills and attributes to be developed through completion of this module. Outcomes should be referenced to the relevant QAA benchmark statements and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008). The SEEC Credit Level Descriptors for Further and Higher Education 2003 and Queen Mary Statement of Graduate Attributes should also be used as a guiding framework for curriculum design.

Academic Content:	
A 1	Explain how many processes in living organisms have a chemical basis
A 2	Describe the structures of biopolymers and other complex molecules and explain how these are formed from smaller subunits
A 3	Describe the need for key biomolecules in the body and their utilisation within the body and importance to living organisms
A 4	Describe the enzyme catalysis of reactions and enzyme kinetics
A 5	I Understand how chemical reactions enable cellular metabolism to occur and be regulated

Disciplinary skills - able to:	
B1	Apply subject knowledge and understanding to address problems and make evidence-based decisions.
B2	Identify, collate, process, analyse, interpret and present data generated locally or published globally.
B3	Handle information, conducting independent study and extract information from the scientific literature through extra reading

Attributes:	
C1	Demonstrate skills for self-managed and lifelong learning, including working independently, adaptive working, time management, organisation and motivational skills.

4) Reading List

Provide an indicative reading list for the module. This should include key texts and/or journals but should not be an exhaustive list of materials.

Berg, Tymoczko & Stryer, Biochemistry (9th edition) W.H.Freeman & Company (2019).

5) Teaching and Learning Profile

Provide details of the method of delivery (lectures, seminars, fieldwork, practical classes, etc.) used to enable the achievement of learning outcomes and an indicative number of hours for each activity to give an overall picture of the workload a student taking the module would be expected to undertake. This information will form the Key Information Set for each undergraduate programme and will be used to populate the KIS widget found on the QMUL programme information pages. More information can be found online about KIS. You may also wish to refer to the QAA guidance on contact hours when completing this section.

Activity Type	KIS Category	Time Spent (in hours)
Lecture	Scheduled	22
Laboratory	Scheduled	9
	Total	31

Specify the total module notional study hours. This should be a total of the hours given for each activity. The notional study hours for each academic credit point is 10. A 15 credit point module therefore represents 150 notional study hours.

Activity Type	Total Time Spent (in hours)	Percentage of Time Spent
Scheduled learning and teaching	25.5	17
Placement	0	0
Independent Study	124.5	83
Total	150	100

Use the information provided in the box above to specify the total time spent and the percentage time spent in each category of teaching and learning activity.

6) Assessment Profile

Provide details of the assessment methods used to assess the achievement of learning outcomes.

Description of Assessment	Assessment Type	KIS Category	Duration/Length	Percentage Weighting	Final element of assessment	Qualifying Mark
Examination	Exam	Coursework	1 Hours and 30	50%	Yes	

			Minutes			
Practical report 1	Written Assessment	Coursework	1h	25%	No	
Practical report 2	Written Assessment	Coursework	1h	25%	No	

Final element of assessment: The assessment that takes place last. There should normally be only one element of assessment marked as final unless two assessment or submission dates occur on the same day.

Qualifying mark: A specified minimum mark that must be obtained in one or more elements of assessment in order to pass a module. This is in addition to, and distinct from, the requirement to achieve a pass in the module mark to pass the module.

Reassessment

Provide details of the reassessment methods used, specifying whether reassessment is either standard reassessment or synoptic reassessment.

○ Standard Reassessment ◉ Synoptic Reassessment

Synoptic reassessment details (if you have indicated synoptic reassessment above, please give details)		
Brief Description of Assessment	Assessment Type	Duration/Length of Examination/ Coursework
Examination	Exam	1 Hours and 30 Minutes