Module Specification

Module Title	Basic Biochemistry	Module Code	BIO161

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, isolation and purification of proteins, modification of proteins, and methods of determining protein conformation. 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. Chloroplasts in plants and algae. 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 Biochemistry students an introduction to their programme of study, and a basic understanding of Biochemistry to students requiring this knowledge for many other degree module programmes throughout the School. The module design provides a fundamental understanding of protein structure, and the link between structure and function. Proteins as enzymes catalysts, in ion transport in energy, metabolism and as the molecular motors of life will be described.

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:	
A1	Recognise amino acids, describe protein structure, and review methods of studying protein conformation
A2	Describe the enzyme catalysis of reactions and methods used to study both catalysis and enzyme kinetics
A3	Describe the link between membrane-bound electron transfer and ATP synthesis and other energy requiring processes
A4	Identify the role of proteins in examples of active ion transport and selected molecular motors

Disciplinary skills - able to:	
B 1	Understand how many processes in living organisms have a simple chemical basis
B 2	Understand biochemical processes some knowledge of protein structure can often be important and that they will gain a basic understanding of techniques used to obtain this information

Attributes:	
C1	Enhance students general scientific understanding and knowledge of experimental techniques
C2	Handling information and conducting independent study
C3	Extract information from the scientific literature

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 (**7th edition**) W.H.Freeman & Company (2012).

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
Workshops	Scheduled	3.5
	Total	25.5

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
Coursework	Mini Reports	Coursework		25%	No	
Examination	Written Exam	Written	1 Hours and 30 Minutes	75%	Yes	

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
Resit Examination	Written Exam	1 Hours and 30 Minutes