

Module Specification

Module Title Module Code
Credit Value Level Mode of Delivery Semester

Pre-requisite modules	Co-requisite modules	Overlapping modules
SBS017 Basic Biochemistry		

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).

This module reviews the pathways involved in carbohydrate, lipid and nitrogen metabolism in a normal generalised cell, their regulation in the normal cell and pathway adaptations that occur in specialised cells and tissues of the human body. Metabolic disease states caused by dysfunction of these pathways are used to illustrate their working and importance in central metabolism. The practical components of the module cover the use of UV & light spectroscopy and enzyme assay techniques to measure the functioning and inhibition of metabolic enzymes.

2) Module Aims

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

This module provides an intermediate level knowledge of the chemical energetic principles applying to metabolic reactions. This is achieved by description of the individual molecular reactions constituting the pathways involved in central intermediary metabolism in a generalised cell. Building on this knowledge, the module then builds knowledge of the interdependence and integration of these pathways and the molecular events involved in their regulation. Progressing from the generalised cell, this then allows understanding of how these pathways are adapted in specialised cells and tissues within the human body. The importance and relevance of this knowledge is promoted by illustration of the pathways with metabolic diseases. Through the knowledge-base provided the students should be able to understand why disease is caused by pathway dysfunction and how treatments of these diseases work.

The experimental work will develop skills in UV & light spectroscopy, understanding how enzymes work and the practical skills required to construct & perform enzyme assays and analyse the experimental data produced.

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	Knowledge of energetic and chemical principles common to the operation of metabolic pathways
A2	Knowledge of individual reactions constituting central intermediary metabolic pathways

A3	Knowledge of integration and regulation of central intermediary metabolism
A4	Knowledge of pathways operating in specialised cells and tissues
A5	Knowledge of health consequences of metabolic pathways dysfunction

Disciplinary skills - able to:	
B1	Able to obtain and assimilate and reproduce knowledge relation the important role at the molecular level
B2	Able to appreciate the relationship of metabolism to human physiology in regard to maintenance of homeostasis in cells and tissues
B3	Able to appreciate the health consequences of aberrant metabolism

Attributes:	
C1	Improved biological knowledge acquisition and dissemination
C2	Practical sessions will enhance the students teamwork 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.

J.M. Berg, J.L. Tymoczko & L. Stryer, 2006. Biochemistry (Freeman) (6th Edition)
D. Voet & J.G. Voet, 2004. Biochemistry (Wiley). (3rd Edition)
J.M. Berg, J.L. Tymoczko & L. Stryer, Biochemistry (Freeman) (5th Edition)
Horton at al. Principles of Biochemistry (Pearson) (4th Edition)

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
Practical Workshops	Scheduled	16
Total		38

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	38	25.3
Placement	0	0
Independent Study	112	74.7
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
Written Examination	Examination	Written Exam	2 Hours and 30 Minutes	75%	Yes	
Coursework	Practical	Coursework		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
Resit Examination	Written Exam	2 Hours and 30 Minutes