

Liverpool John Moores University

Title: BIOCHEMISTRY
Status: Definitive
Code: **5004BCBMOL** (101437)
Version Start Date: 01-08-2011

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Andrew Powell	Y
David Billington	

Academic Level: FHEQ5 **Credit Value:** 12.00 **Total Delivered Hours:** 29.50
Total Learning Hours: 120 **Private Study:** 90

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	19.000
Seminar	3.000
Workshop	6.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1		70.0	1.50
Essay	AS2		30.0	

Aims

To develop a deeper understanding of structural and functional aspects of biochemical interactions in mammalian, plant and microbial systems and to provide experience of the principles of protein purification and practice in biochemical calculations

Learning Outcomes

After completing the module the student should be able to:

- 1 Describe the major mechanisms by which protein and enzyme function is regulated
- 2 Understand how living systems obtain and interconvert energy
- 3 Describe the components of membranes in relation to their function
- 4 Understand the principles of protein purification and how this is monitored
- 5 Utilise a range of scientific skills.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

EXAM	1	2	3
Essay	4	5	

Outline Syllabus

Protein structure and function: Regulation of protein structure and function.

Cooperativity and allosteric control.

Membranes: Classification of membrane lipids and proteins. Mammalian membrane structure, asymmetry and fluidity. Bacterial membranes; membranes as targets for antibiotics.

Bioenergetics

Protein purification: Principles, techniques and calculations

Learning Activities

Lectures, seminars and workshops

References

Course Material	Book
Author	Berg, J.M., Tymoczko, J.L., Stryer, L.
Publishing Year	2006
Title	Biochemistry
Subtitle	
Edition	6th Ed.
Publisher	Freeman
ISBN	071676766x

Course Material	Book
Author	Nelson, D.L., Cox, .M.M.
Publishing Year	2005

Title	Principles of Biochemistry
Subtitle	
Edition	5th Ed.
Publisher	Freeman
ISBN	0716743396.

Course Material	Book
Author	Voet ,D. and Voet, J.
Publishing Year	2004
Title	Biochemistry
Subtitle	
Edition	3rd Ed.
Publisher	Wiley
ISBN	047119350x

Course Material	Book
Author	Alberts et al
Publishing Year	2008
Title	Molecular Biology of the Cell
Subtitle	
Edition	5th Ed.
Publisher	Garland
ISBN	9780815341062

Course Material	Book
Author	Moorthy K
Publishing Year	2008
Title	Fundamentals of Biochemical Calculations
Subtitle	
Edition	2nd Ed.
Publisher	Ed Taylor & Francis
ISBN	9781420053579.

Course Material	Book
Author	Whitford
Publishing Year	2005
Title	Proteins: Structure and Function
Subtitle	
Edition	
Publisher	Wiley
ISBN	0471498947

Notes

This module will build on the concepts introduced in Level 1 Biochemistry focussing on a number of topics central to biochemistry. It will also develop analytical and

essay writing skills.