

## Liverpool John Moores University

Title: ADVANCED BIOCHEMISTRY  
Status: Definitive  
Code: **6006BCBMOL** (101450)  
Version Start Date: 01-08-2011

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

Team	Leader
Andrew Powell	Y
Jari Louhelainen	
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Patricia Burke	

**Academic Level:** FHEQ6      **Credit Value:** 24.00      **Total Delivered Hours:** 39.00  
**Total Learning Hours:** 240      **Private Study:** 201

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	20.000
Seminar	4.000
Tutorial	6.000
Workshop	6.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Dissertation	AS1		40.0	
Exam	AS2		60.0	3.00

### Aims

*To provide students with a state of the art knowledge of central aspects of molecular biology and biochemistry, to provide an introduction to bioinformatics, and to encourage the development of analytical skills.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss molecular biology, structural biochemistry, metabolism and proteins at an advanced level and have a basic knowledge of bioinformatics.
- 2 Read, interpret and discuss scientific literature.

## Learning Outcomes of Assessments

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

Literature review	1	2
EXAM	1	2

## Outline Syllabus

*Molecular biology: Properties of nucleic acids. Genome organisation. Gene families. Eukaryotic gene expression and its control.*

*Glycoproteins: Structural diversity and biosynthesis. Analysis of glycans. Carbohydrate function and binding.*

*Proteins: principles of investigation, investigating/exploiting interactions, omics.*

*Bioinformatics: Scope of bioinformatics, general sequencing methods, sequencing errors, sequence homology searches, identify and similarity, global and local alignment algorithms, databases.*

## Learning Activities

Lectures, workshops, tutorials, seminars and discussions with review supervisor.

## References

<b>Course Material</b>	Book
<b>Author</b>	Berg, J.M., Tymoczko, J.L. and Stryer, L.
<b>Publishing Year</b>	2006
<b>Title</b>	Biochemistry
<b>Subtitle</b>	
<b>Edition</b>	6th ed.
<b>Publisher</b>	Freeman & Co New York
<b>ISBN</b>	0716787245

<b>Course Material</b>	Book
<b>Author</b>	Whitford, D

<b>Publishing Year</b>	2005
<b>Title</b>	Proteins: Structure and Function
<b>Subtitle</b>	
<b>Edition</b>	
<b>Publisher</b>	Wiley
<b>ISBN</b>	0471498947

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

<b>Course Material</b>	Book
<b>Author</b>	Voet, D and Voet, J. G.
<b>Publishing Year</b>	2004
<b>Title</b>	Biochemistry
<b>Subtitle</b>	
<b>Edition</b>	3rd
<b>Publisher</b>	Wiley
<b>ISBN</b>	0-471-19350 X

<b>Course Material</b>	Book
<b>Author</b>	Taylor, M.E. and Drickamer, K.
<b>Publishing Year</b>	2006
<b>Title</b>	Introduction to Glycobiology
<b>Subtitle</b>	
<b>Edition</b>	2nd
<b>Publisher</b>	OUP
<b>ISBN</b>	0-199-282781

<b>Course Material</b>	Book
<b>Author</b>	Varki, A et al
<b>Publishing Year</b>	1999
<b>Title</b>	Essentials of Glycobiology
<b>Subtitle</b>	
<b>Edition</b>	2nd
<b>Publisher</b>	Cold Spring Harbour Laboratory Press
<b>ISBN</b>	0-87969-559-5

<b>Course Material</b>	Book
<b>Author</b>	Tyman, R.M.
<b>Publishing Year</b>	2004
<b>Title</b>	Principles of Proteomics

<b>Subtitle</b>	
<b>Edition</b>	
<b>Publisher</b>	Bios Scientific
<b>ISBN</b>	1859962734

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### **Notes**

This module will provide students with a state of the art knowledge of central aspects of molecular biology and biochemistry, an introduction to bioinformatics, and will encourage the development of analytical skills.