

Liverpool John Moores University

Title: LABORATORY METHODS FOR BIOSCIENCES
Status: Definitive
Code: **5002BCBMOL** (101433)
Version Start Date: 01-08-2011

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

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Academic Level: FHEQ5 **Credit Value:** 12.00 **Total Delivered Hours:** 31.00

Total Learning Hours: 120 **Private Study:** 89

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	6.000
Practical	15.000
Tutorial	4.000
Workshop	6.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	laboratory reports	40.0	
Test	AS2	Open Book test	60.0	3.00

Aims

To extend a basic knowledge of laboratory skills and techniques to include modern

instrumental methods suitable for advanced practical work and research.

Learning Outcomes

After completing the module the student should be able to:

- 1 Appreciate the methodology of experimental design and to understand the importance of sampling, choice of analytical method and quality control.
- 2 Critically evaluate qualitative and quantitative data and choose and apply appropriate non-parametric or parametric statistics as necessary.
- 3 Demonstrate knowledge of the basic principles of a range of non-instrumental and instrumental analytical techniques and to appreciate their applicability and limitations. (Techniques to include a selection from: spectrophotometry, chromatography, electrophoresis, radiochemical methods, centrifugation and microscopy).

Learning Outcomes of Assessments

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

Practical Reports	1	2	3
Open Book Test	1	2	3

Outline Syllabus

General principle of experimental design. Sampling, choice of method and interpretation of results. Graphical and tabular presentation of results. Parametric and non-parametric statistics. Standards and quality control.

Introduction to instrumental methods of analysis. Pitfalls of the 'black-box' approach.

Modern methods and applications. Selected examples from: chromatography, electrophoresis, centrifugation, spectrophotometry, microscopy, electrochemical and radiochemical methods - a review of the principles of instrumentation and some applications.

Learning Activities

Part delivery by open learning as available.

References

Course Material	Book
Author	Wilson, K. and Walker, T
Publishing Year	2000
Title	Principles and Techniques in Practical Biochemistry
Subtitle	
Edition	5th ed
Publisher	Cambridge University Press.
ISBN	0521-42809-2

Course Material	Book
Author	R. Reed, D. Holmes, J.Weyers and A. Jones
Publishing Year	2003
Title	Practical Skills in Biomolecular Sciences
Subtitle	
Edition	2nd ed.
Publisher	Longman
ISBN	0 582 29826 1

Notes

This module aims to equip students to work competently with the range of modern analytical procedures, suitable for advanced practical work and research projects. It will allow them to understand the acquisition and interpretation of data.