

Liverpool John Moores University

Title: BIOMEDICAL RESEARCH METHODS
Status: Definitive
Code: **5101BMBMOL** (122379)
Version Start Date: 01-08-2021

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

Team	Leader
Nick Bryan	
Darren Sexton	
Jo Foulkes	
Laura Randle	
Kenneth Ritchie	
Helen Burrell	
Mark Murphy	
Gordon Lowe	
Janice Harland	
Steven Crosby	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 55
Total Learning Hours: 200 **Private Study:** 145

Delivery Options

Course typically offered: Semester 1 and Summer

Component	Contact Hours
Lecture	35
Tutorial	5
Workshop	15

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Presentation	ASS1	Group Presentation	40	
Report	ASS2	Research Proposal linked to tutorials and workshops	60	

Aims

The aim of this module is to equip biomedical science students with essential research skills and knowledge of methods and techniques that are routinely applied in biomedical research.

Learning Outcomes

After completing the module the student should be able to:

- 1 Develop and display an understanding of the fundamental biomedical research methods and techniques that are routinely used in a laboratory setting.
- 2 Apply knowledge of fundamental methods and techniques that are routinely used in biomedical research to help design, plan and develop a biomedical research proposal.
- 3 Develop and apply scientific writing, presentation and team-working skills.
- 4 Demonstrate engagement with interpretation and analysis of scientific results/data including the use of appropriate statistical analysis.

Learning Outcomes of Assessments

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

Group Presentation	3	1	
Research Proposal	2	3	4

Outline Syllabus

The module will introduce biomedical research and introduce the principles and applications of the main laboratory-based techniques and methods commonly used in biomedical research (e.g. antibody-based techniques, high performance liquid chromatograph, mass spectrometry, flow cytometry, microscopy) as well as new technological advances in biomedical research. Genomic, transcriptomic and proteomic methods will be introduced.

The module will also introduce research specific methods and techniques including; research planning, experimental design, measurement and instrumentation, data summarisation/presentation and statistical analysis.

Learning Activities

Material will be delivered through lectures, workshops and tutorials. The lectures will be designed to introduce the routine laboratory-based methods and techniques currently used in biomedical research. Workshops will be delivered to enable the students to develop their analytical/data handling/statistical skills. Tutorials will be

linked to assessment tasks and are designed to facilitate student development and learning.

Notes

Through a range of teaching and learning activities this module will provide opportunities for the students to learn, develop and demonstrate a range of key biomedical research skills/knowledge, thus enabling them to become independent researchers while preparing them for level 6 study.

No specific benchmarks are available for this module, but the learning outcomes at least meet, if not exceed, those stipulated in the relevant qualification descriptors for a higher education qualification at level 5 as defined by QAA, Sept 2015. The module has also been informed by the benchmark statement for Biomedical Science June 2015.

Intake is every September.

The criteria for admission to the module require that candidates meet the criteria for admission to the BSc Biomedical Science programme (32805).

The final award is Certificate of Professional Development in Biomedical Research Methods, 20 credits at Level 5.

The students have access to a module Blackboard site and the University's other range of electronic support such as access to the electronic library facilities. The module content is regularly updated on the Blackboard site including contemporary reading lists and links to journal articles. Students have access to the community site for Biomedical Science. All students have access to the module leader through phone contact and email. Module and CPD guides are also provided, which provide a range of information.

The programme is assessed and run in line with the Academic Framework
<http://www.ljmu.ac.uk/eaqs/121984.htm>

The module is accredited by The Institute for Biomedical Science (Sept 2016- Aug 2021). The module forms part of the BSc Biomedical Science programme (32805) which was reviewed in April 2016.

The methods for improving the quality and standards of learning are as follows:

- Annual monitoring Review;
- Liaison and feedback from the students;
- Reports from External Examiner;
- Programme team ensuring the module reflects the values of the current teaching and learning strategy;
- Module leader updating knowledge and skills to ensure these remain current and relevant.

The module is included in the programme specification for the BSc Biomedical Science programme (32805). The module is aligned with the same BSc Biomedical Science module for annual monitoring and external examining purposes.