

Liverpool John Moores University

Title: INTRODUCTION TO MICROBIOLOGY AND BIOTECHNOLOGY
Status: Definitive
Code: **4106BCBMOL** (122486)
Version Start Date: 01-08-2021

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

Team	Leader
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Academic Level: FHEQ4 **Credit Value:** 20 **Total Delivered Hours:** 57
Total Learning Hours: 200 **Private Study:** 143

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	23
Practical	27
Workshop	5

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	The exam will require students to answer MCQs (section A) and essay style questions (section B).	60	2
Report	AS2	Assessment linked to lectures and practical skills involving	40	

Category	Short Description	Description	Weighting (%)	Exam Duration
		examination of a range of microorganisms.		

Aims

This course aims to: provide a broad spectrum of knowledge about microorganisms and their activities which will provide a foundation for microbiology modules at Levels 5 and 6.

Learning Outcomes

After completing the module the student should be able to:

- 1 Recognise the diversity of microorganisms in natural environments, and important morphological features.
- 2 Describe the basic methods for cultivation, observation, enumeration and identification of microorganisms, including factors which influence growth.
- 3 Describe the impact of microorganisms in the environment, and their role in health and disease.
- 4 Recognise the importance and future potential of microorganisms in industrial processes.

Learning Outcomes of Assessments

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

Exam	1	2	3	4
Report	1	2	3	4

Outline Syllabus

Position of microorganisms in the natural world with emphasis on bacteria, fungi and viruses.

Structural characteristics and growth requirements of the major microbial groups.

Practical methods to study microorganisms: cultivation of bacteria; principles of bacterial identification; assessment of cell growth.

Microbial signalling and communication.

Biofilms.

Microorganisms as agents of disease, modes of infectious disease transmission and the methods used to prevent and treat infections.

Antibiotics and antimicrobial resistance.

Microorganisms of industrial importance.

Microorganisms and environmental processes.

The biology of plasmids and bacteriophages.

Learning Activities

Lectures: will cover most of the learning outcomes.

Practicals: to develop some basic microbiological skills required to observe and study microorganisms.

Workshop: to build upon student understanding of various aspects of process biotechnology and aid revision.

Notes

The module will be delivered through a series of lectures, practicals and workshops. There will be one piece of coursework involving a laboratory practical assessment. The final assessment component will be a written examination. The first part of the written examination will comprise a series of multiple choice style questions, followed by essay style questions. Students will be required to do some independent learning and reading around the topics.