

## Liverpool John Moores University

Title: Introduction to Microbiology  
Status: Definitive  
Code: **4017MBBMOL** (117390)  
Version Start Date: 01-08-2014

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

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**Academic Level:** FHEQ4      **Credit Value:** 24.00      **Total Delivered Hours:** 72.00  
**Total Learning Hours:** 240      **Private Study:** 168

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	40.000
Practical	27.000
Workshop	4.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	All questions in section A must be answered. Section B is composed of essay style questions.	60.0	1.00
Practice	AS2	Practical assessment requires demonstration of a range of microbiological techniques to answer set questions.	20.0	

Category	Short Description	Description	Weighting (%)	Exam Duration
Practice	AS3	Practical assessment linked to lectures and practical skills involving examination of a range of microorganisms.	20.0	

## 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:

- MIC0 1 Discuss the important morphological features of the major types of microorganisms; bacteria, fungi, protists and viruses.
- MIC0 2 Understand the basic methods for cultivation, observation, enumeration and identification of microorganisms, including aseptic techniques.
- MIC0 3 Discuss the physical and chemical requirements for growth and understand how to assess microbial growth.
- MIC0 4 Understand the impact of microorganisms in the environment, both advantageous and detrimental.
- MIC0 5 Appreciate the importance and future potential of microorganisms in industrial processes.
- MIC0 6 Recognise the role of microorganisms as causative agents of disease in man, animals and plants.

## Learning Outcomes of Assessments

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

Exam	MI C0 1	MI C0 2	MI C0 3	MI C0 4	MI C0 5	MI C0 6
Practical 1	MI C0 1	MI C0 2	MI C0 3			
Practical 2	MI C0 1	MI C0 2	MI C0 3			

## 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.*

*Microbial growth: Assessment of growth, cell and population growth, growth curve for bacteria.*

*Microbiological methods: Microscopy, aseptic technique, sterilization and disinfection.*

*Selective isolation, use of selective media, enrichment culture, identification.*

*Microbial pathogens and processes.*

*Virology: Virus diseases of man including cancer, modes of virus transmission, virus replication, virus infection cycle.*

*Microorganisms of industrial importance.*

*Microorganisms and environmental processes.*

## 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.

MCQ examples: on blackboard to help with exam revision.

## References

<b>Course Material</b>	Book
<b>Author</b>	Cappuccino, J.G., Sherman, N.
<b>Publishing Year</b>	2010
<b>Title</b>	Microbiology A Laboratory Manual
<b>Subtitle</b>	
<b>Edition</b>	9th edition
<b>Publisher</b>	Benjamin Cummings
<b>ISBN</b>	9780321673879

<b>Course Material</b>	Book
<b>Author</b>	Madigan, M.T., Brock, T.D., Parker, J., Martinko, J.M.
<b>Publishing Year</b>	2008
<b>Title</b>	Brock: Biology of Microorganisms
<b>Subtitle</b>	
<b>Edition</b>	12th edition
<b>Publisher</b>	Benjamin Cummings
<b>ISBN</b>	9780321536150

<b>Course Material</b>	Book
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<b>Author</b>	Willey, J., Sherwood, L., Woolverton, C.
<b>Publishing Year</b>	2010
<b>Title</b>	Prescott's Microbiology
<b>Subtitle</b>	
<b>Edition</b>	8th edition
<b>Publisher</b>	McGraw-Hill Publishers
<b>ISBN</b>	9780077350130

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## Notes

The module will be delivered through a series of lectures, practicals and workshops. There will be two pieces of coursework, both will be compulsory laboratory practical assessments. 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.