

## Liverpool John Moores University

Title: MICROBIAL ECOLOGY  
Status: Definitive  
Code: **5002MBBMOL** (101565)  
Version Start Date: 01-08-2011

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

Team	Leader
George Sharples	Y
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**Academic Level:** FHEQ5      **Credit Value:** 12.00      **Total Delivered Hours:** 31.50  
**Total Learning Hours:** 120      **Private Study:** 88

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	17.000
Practical	12.000
Workshop	1.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Exam	60.0	1.50
Practice	AS2	1 Assessed practical	40.0	

### Aims

*To provide a general introduction to the ecology of microorganisms in a variety of habitats, with particular reference to soil.*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Show how microorganisms are adapted for life in different habitats.
- 2 Relate the complexity of soil to the problems encountered when studying the ecology of the microflora inhabiting such an environment.
- 3 Assess the effects of bacteria and fungi on soil fertility.
- 4 Describe the ways in which microorganisms can be used in the treatment of waste-water and sewage.

### Learning Outcomes of Assessments

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

EXAM	1	2	3	4
CW	1	2		

### Outline Syllabus

*Natural environments for microorganisms; qualitative and quantitative features of microbial populations inhabiting such environments.*

*Effects of physico-chemical conditions on microbial activity: pH, temperature, aeration, water potential, nutrient availability; extreme environments.*

*Methods used for the study of microorganisms in their natural environments: isolation methods; microbial biomass and activity determinations.*

*Microbial activities of ecological importance: carbon, nitrogen, sulphur and phosphorus cycles; degradation of man-made compounds; waste-water and sewage treatment.*

*Interactions: microbe-microbe interactions; plant-microbe interactions.*

### Learning Activities

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### References

<b>Course Material</b>	Book
<b>Author</b>	Atlas R M, Bartha R
<b>Publishing Year</b>	1998
<b>Title</b>	Microbial Ecology - Fundamentals and Applications
<b>Subtitle</b>	
<b>Edition</b>	
<b>Publisher</b>	Benjamin Cummings
<b>ISBN</b>	0-8053-0655-2

## **Notes**

This module is designed to develop an understanding of the nature and behaviour of microorganisms populating various habitats with emphasis on their responses to particular physical and chemical conditions.