

Introductory Microbiology

Module Code:	BIS4013-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Chemistry and Biosciences
Subject Area:	Biomedical Science
FHEQ Level:	FHEQ Level 4

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	27
Tutorials	6
Laboratory	12
Directed Study	155

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Semester 2 (Feb - May)

Module Aims

To provide students who may have little or no background in Microbiology with an introduction to the nature of microbes and the microbial world. To provide students with practical experience of basic microbiological procedures including aseptic technique and key tests for bacterial identification.

Outline Syllabus

This module will provide an overview of the microbial world, including discussion of the structure and function of prokaryotes, nutritional and physiological requirements and environmental factors affecting growth. The nature and structure of viruses including

bacteriophage will be covered. The interactions between microbes and humans will be studied including: the role of human commensal flora; bacterial, fungal and viral diseases and their prevention. Life cycles, epidemiology, pathological effects and control of protozoa and other parasites responsible for important diseases of humans will also be discussed. Industrial uses of micro-organisms, food microbiology, nutrient recycling and the importance of microbes in biodegradation of wastes and pollutants will be studied. The module also introduces bacterial genetics, including: structure and replication of prokaryotic DNA; transcription; translation; mutations and transfer of genetic information between bacteria.

The isolation, growth and identification of microbes will also be covered. There will be a practical introduction to the isolation/identification of bacteria and fungi by biochemical and staining techniques; aseptic culture transfer and enumeration techniques. The effect of temperature on bacterial growth and survival will also be studied.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Show evidence of some breadth and depth of understanding of the fundamental concepts of microbiology (HCPC standard 13).
- 2 Show evidence of understanding the structure and function of the human body, relevant to microbiology, and explain the relationship between health, disease, disorder and dysfunction (HCPC standard 13).
- 3 Conduct basic microbiological experiments in a safe and effective manner, following clear instructions and accurately record data using appropriate scientific conventions (HCPC standards 3, 15).
- 4 Demonstrate personal responsibility for self-directed learning, including self-management of workload and resources (HCPC standards 1, 3)

Learning, Teaching and Assessment Strategy

Information outlining the knowledge and understanding required for this module is delivered in lectures and workshops. Information is reinforced by laboratory sessions. Feedback is given orally both in interactive workshops and in the practical sessions. The laboratory sessions also provide the opportunity to gain experience in basic microbiological techniques and involve working in small groups, recording and interpreting data, working to deadlines and employing communication skills. A coursework test is used to assess the theory behind the practical lab sessions and the laboratory skills are assessed in a practical laboratory based assessment. The formal exam will assess the wider theoretical knowledge outlined in the module descriptor

Reassessment of failed elements will be as per the initial method of assessment. Where reassessment of the practical element is required, students will be given a data set or an opportunity to complete the practical on an alternative occasion, whichever is more appropriate.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - practical/lab oratory	Practical class comprising assessed practical skills and theoretical knowledge (LO3)	2 hours	20%	No
Summative	Examination - closed book	Examination comprising MCQ & short answer questions (LO1, 2, 4)	1.5 hours	60%	Yes
Summative	Classroom test	MCQ theory test based on practical classes (LO1, 2, 4)	45 minutes	20%	No

Legacy Code (if applicable)

BM-2108D

Reading List

To view Reading List, please go to [rebus:list](#).