UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title:	Introductory Microbiology
Module Code:	BIS4013-B
Academic Year:	2019-20
Credit Rating:	20
School:	School of Chemistry and Biosciences
Subject Area:	Biomedical Science
FHEQ Level:	FHEQ Level 4
Pre-requisites:	
Co-requisites:	Developing Professional Skills 1 2019-20, Independent Study for Forensic Scientists 2019-20

Contact Hours	
Type	**Hours**
Lectures	27
Tutorials	6
Laboratory	12
Directed Study	155

Availability	
Occurrence	**Location / Period**
BDA	University of Bradford / Academic Year (Sept - 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.

Learning Outcomes

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
Summative	Examination - practical/laboratory	Practical class comprising assessed practical skills and	2 hours	20%

		theoretical knowledge (LO3)		
Summative	Examination - closed book	Examination comprising MCQ & short answer questions (LO1, 2, 4)	1.5 hours	60%
Summative	Classroom test	MCQ theory test based on practical classes (LO1, 2, 4)	45 minutes	20%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html.

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.