UNIVERSITY of BRADFORD

Module Descriptor

Research Topics 1 in Medical Microbiology

Module Code:	BIS6008-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Chemistry and Biosciences
Subject Area:	Biomedical Science
FHEQ Level:	FHEQ Level 6
Module Leader:	Dr Anna Snelling

Additional Tutors:
Dr Jonathan Fletcher, Dr Dean Harrington, Dr Chien-Yi Chang

Pre-requisites:	Medical Microbiology 2017-18
Co-requisites:	

Contact Hours

Type	Hours
Lectures	27
Tutorials	15
Laboratory	9
Directed Study	149

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims

To develop an appreciation of 1) the work of the National Health Service, Public Health England, supporting agencies, and commercial microbiology laboratories in dealing with infectious disease; 2) the principles and practice of diagnostic microbiology, epidemiology and control of infectious disease. To extend knowledge of antimicrobial chemotherapy, the causes and consequences of bacterial resistance, and the molecular basis of pathogenicity

of selected bacteria and viruses.

Also, to understand how these topics relate to, and inform strategies for preventing and controlling infectious disease. To develop oral and written communication skills. To develop a critical appreciation of relevant laboratory methodologies.

Outline Syllabus

Introduction to UK infrastructure of the National Health Service, Public Health England and supporting agencies including microbiology diagnostic laboratories. Key and emerging methods used in diagnostic bacteriology. Application of molecular biology / rapid methods to diagnostics. Overview of chemistry, development, mode of action, applications/limitations of key classes of antibiotic (beta-lactams, aminoglycosides, tetracyclines, macrolides, fluoroquinolones). Antimicrobial sensitivity testing. Molecular mechanisms and drivers of antibiotic resistance including case studies of current issues. National / International response to problems of resistance. Infection Control within the Hospital. Investigation and control of outbreaks of infectious disease, emerging infectious diseases. National and International vaccination strategies. Microbial virulence factors (including toxins and adhesins) and their relevance to development of new therapeutic strategies and diagnostic tests.

Module Learning Outcomes

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

1 Discuss the role and nature of work performed in clinical, public health and diagnostic microbiology laboratories and evaluate key methods used in detecting / identifying pathogens (HCPC standard 13).

2 Critically discuss the epidemiology and pathogenesis of selected infectious diseases and the role of antimicrobial chemotherapy and vaccination in the treatment and prevention of infectious disease at national and international levels. (HCPC standards 5, 13, 14).

3 Discuss current trends and modern techniques and their impact on microbiological practices in different countries. Critically appraise current microbiology research literature, conduct laboratory investigations, analyse data & write concise reports (HCPC standards 5, 13, 14).

4 Report, interpret and present scientific data, including evaluation of experimental design, using the correct scientific terminology (HCPC standards 3, 14, 10, 15).

5 Critically analyse and evaluate experimental data presented in the primary scientific literature to select and explain key complex aspects, which are at the forefront of the discipline (HCPC standards 1, 8, 13, 14).

6 Demonstrate knowledge and understanding of a range of appropriate research methodologies (HCPC standard 15).

7 Demonstrate an effective self-management of workload, time and resources to prepare and deliver concise oral reports, (HCPC standards 1, 3, 8, 10, 14).

Learning, Teaching and Assessment Strategy

The core knowledge for this module is delivered in a series of lectures and interactive workshops, supplemented by reference to current published scientific literature and policies, which requires extensive further reading and autonomous learning by the students. Specific laboratory skills are developed in a series of practical classes and data analysis and interpretation skills are assessed by a practical report in the style of a short research paper. The ability to source, then explain scientific information clearly and concisely is assessed by an individual oral presentation. During directed study hours, students are expected to undertake reading to consolidate and expand on the content of formal taught sessions; research and prepare for assessments; revise material from formal taught sessions; and undertake specific elements of reading as directed.
Private study will be facilitated and supported via the use of the VLE which will provide materials and links to on-line microbiology resources.
Reassessment of failed elements will be as per the initial method of assessment. Where reassessment of the laboratory practical element is required, students will be set an essay to write that covers the applications of similar investigative techniques.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Formative	Presentation	Students have a formative presentation session which involves presenting and peer observation (LO 4-7)	15 minutes	%	No
Summative	Presentation	Oral presentation (LO 4-7)	15 minutes	20%	No
Summative	Examination - closed book	One 2-hour examination comprising two from a choice of five essays (LO 1-3).	2 hours	60%	Yes
Summative	Coursework	Laboratory report (Essay if resitting) on the practical class material (LO 4-6)	0-1000 words	20%	No

Legacy Code (if applicable)

BM-3119D

Reading List

To view Reading List, please go to **rebus:list**.