



MODULE SPECIFICATION

Part 1: Information			
Module Title	Medical Microbiology		
Module Code	USSJN5-30-M	Level	Level 7
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Health & Applied Sciences	Field	Applied Sciences
Department	HAS Dept of Applied Sciences		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Features: Module entry requirements: Students must have studied microbiology at undergraduate degree level.</p> <p>Educational Aims: See Learning Outcomes</p> <p>Outline Syllabus: Detection of microbes: Students will develop knowledge of the methods used in clinical laboratories to detect and diagnose infectious diseases. This includes standard culture and microscopy based methods, immunological diagnoses, infection control screening, the move towards automation and the increasing use of molecular technologies. Students will also develop an understanding of the importance of health and safety in the microbiology laboratory.</p> <p>Taxonomy and classification: Students will develop knowledge of the principles behind classification, the techniques used to classify microbes (bacteria, viruses, fungi and other parasites) and controversies that remain when attempting to classify microbes.</p> <p>Epidemiology: Students will develop knowledge of the principles and techniques used in epidemiology of</p>

STUDENT AND ACADEMIC SERVICES

infectious diseases.

The host-microbe balance:

Students will develop knowledge of the relationship between host and microbes (bacteria, viruses, fungi and other parasites) in both health and disease. This includes a knowledge of the principles and pathogenicity; the human immune response and microbial strategies for subverting the response; the concept of the normal microbiota; microbial virulence factors, including the routes by which microbes acquire these factors, and the genetic mechanisms by which they control expression of the factors; biofilms and their role in microbial infections.

The control of infectious diseases in human populations:

Students will develop knowledge of antimicrobial drugs; vaccination; environmental control of diseases, vectors and reservoirs; disinfection and sterilisation.

Infectious diseases of key body systems:

Students will develop a deeper knowledge of infections of selected body systems such as the neurological system, genital tract, the respiratory tract and the gastrointestinal tract: covering the epidemiology of infections that are associated with the system; pathogenic and virulence traits of the infecting microbes; prevention and treatment of infections of the system; i.e. the host-microbe balance aspects of different infections will be developed. Examples covered will be chosen to illustrate other fundamental microbiological principles such as zoonoses, nosocomial infections, opportunistic pathogens, environmentally acquired infections and endogenous infections.

Teaching and Learning Methods: Formal lectures – 2 hours per week during teaching weeks (two semesters)

M level tutorials – 1 hour per week for 20 weeks

Teaching will comprise a mix of formal lecture, group discussion, tutorials and data interpretation exercises. For each hour of scheduled study students are advised to undertake 9 hours of independent study - as this is an M level module the amount of guidance on activities will be reduced as the year progresses so that students develop independent learning skills, and gain the chance to study topics from within the module in alignment with their areas of interest. The interactive nature of the M level tutorials will mean that students will need to spend time each week preparing for the next session. The students will be advised to allow at least 50 hours of the independent study time working on the coursework for the module (which contributes 50% of the module mark).

Students on the module will also be required to attend a conference week at an appropriate time in the year (dependent on changes to the academic calendar). During this week a range of visiting lecturers will be brought in to give keynote lectures (for example based on their clinical practice) or research focused lectures that map to the syllabus content. The conference week will also give students an experience of what it is like to attend a scientific conference, with an intensive schedule of talks across the week to be attended. Engagement with the conference week will be assessed as part of USSJYR-15-M (Advanced Topics in Biomedical Science) but the lecture content of conference week will augment this module as well.

Part 3: Assessment

The MSc BMS Programme has a programme level assessment strategy (see Programme Specification appendix 1), and all modules have their assessments designed to relate to that document. For parity across all routes the specialist subject modules on the MSc BMS programme have a 50:50 weighting of course work to final exam – this module is one of the specialist modules. Therefore the coursework has been designed in line with the programme assessment strategy.

Specialist module coursework is designed to test the ability of students to express their chosen specialist discipline in both written form and in oral form.

The coursework essay is similar in style to a review article in a journal, and the presentation is designed to replicate those given at conferences. Both are highly relevant assessments for higher level science graduates to have undertaken, preparing them for future academic style writing and presentation in their professional lives.

STUDENT AND ACADEMIC SERVICES

<p>The assessments are marked to the BBAS standard PG marking criteria, and students are fully briefed on the assessment both in writing and through a tutorial session. Students also develop several transferable skills during this assessment including negotiation (they are allowed to pick their own title and refine it), critiquing of published literature, scientific writing etiquette, and editing documents to a high editorial standard.</p> <p>The exam enables students to demonstrate a breadth of knowledge that it would be reasonable for future employers to see in a Masters graduate in relation to their chosen specialism. This will be an online exam with a 24 hour window for completion and a 3000 word limit.</p>			
First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		30 %	Essay (3000 words)
Presentation - Component B		20 %	Poster Presentation (20 minutes including defence)
Examination (Online) - Component A	✓	50 %	Assessment examination (24 hours)
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		30 %	Essay (3000 words)
Presentation - Component B		20 %	Presentation Report and Annotated Slides
Examination (Online) - Component A	✓	50 %	Online examination (24 hours)

Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:																	
	<table border="1"> <thead> <tr> <th>Module Learning Outcomes</th> <th>Reference</th> </tr> </thead> <tbody> <tr> <td>Demonstrate their knowledge of the theory and techniques of classical and modern microbial taxonomy, and discuss the controversies that exist in the field</td> <td>MO1</td> </tr> <tr> <td>Critically discuss the virulence and pathogenicity of infectious agents (bacteria, viruses, fungi and other parasites); centred on the concept of the host – microbe balance; using indicative case studies</td> <td>MO2</td> </tr> <tr> <td>Evaluate the methods available for the detection of infectious agents and diagnosis of infections</td> <td>MO3</td> </tr> <tr> <td>Critically discuss the strategies available to control and treat microbial and viral infections</td> <td>MO4</td> </tr> <tr> <td>Apply theoretical knowledge of identification and classification, epidemiology, pathogenicity and virulence, treatment and control of pathogens to selected examples of infectious diseases</td> <td>MO5</td> </tr> <tr> <td>Evaluate the importance of health and safety and good laboratory practice in microbiology</td> <td>MO6</td> </tr> <tr> <td>Review and evaluate the literature relevant to the area of medical microbiology, and appreciate the limitations of this literature</td> <td>MO7</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Demonstrate their knowledge of the theory and techniques of classical and modern microbial taxonomy, and discuss the controversies that exist in the field	MO1	Critically discuss the virulence and pathogenicity of infectious agents (bacteria, viruses, fungi and other parasites); centred on the concept of the host – microbe balance; using indicative case studies	MO2	Evaluate the methods available for the detection of infectious agents and diagnosis of infections	MO3	Critically discuss the strategies available to control and treat microbial and viral infections	MO4	Apply theoretical knowledge of identification and classification, epidemiology, pathogenicity and virulence, treatment and control of pathogens to selected examples of infectious diseases	MO5	Evaluate the importance of health and safety and good laboratory practice in microbiology	MO6	Review and evaluate the literature relevant to the area of medical microbiology, and appreciate the limitations of this literature	MO7	
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Contact Hours	Independent Study Hours:																	

STUDENT AND ACADEMIC SERVICES

	Independent study/self-guided study	234
	Total Independent Study Hours:	234
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	66
	Total Scheduled Learning and Teaching Hours:	66
	Hours to be allocated	300
	Allocated Hours	300
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ussjn5-30-m.html</p>	

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Biomedical Science (Medical Microbiology) [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science [Sep][FT][Frenchay][1yr] MSc 2020-21