



ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Medical Microbiology				
Module Code	USSJN5-30-M	Level	M	Version	2.1
UWE Credit Rating	30	ECTS Credit Rating	15	WBL module?	No
Owning Faculty	Health and Applied Sciences	Field	Applied Sciences		
Department	Biological Biomedical and Analytical Sciences	Module Type	Standard		
Contributes towards	MSc Biomedical Science				
Pre-requisites	Study of microbiology in undergraduate degree	Co- requisites	None		
Excluded Combinations	None	Module Entry requirements	Study of microbiology at undergraduate degree level		
First CAP Approval Date	30 th May 2012	Valid from	September 2012		
Revision CAP Approval Date	2 nd February 2016	Revised with effect from	September 2016		

Review Date	~ 5 years post approval for PSRB requirements
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Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> demonstrate their knowledge of the theory and techniques of classical and modern microbial taxonomy, and discuss the controversies that exist in the field (exam and/or coursework) 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 (exam and/or coursework) evaluate the methods available for the detection of infectious agents and diagnosis of infections (exam and/or coursework) critically discuss the strategies available to control and treat microbial & viral infections (exam and/or coursework) apply theoretical knowledge of identification & classification, epidemiology, pathogenicity & virulence, treatment & control of pathogens to selected examples of infectious diseases (exam and/or coursework) evaluate the importance of health and safety and good laboratory practice in microbiology (exam and/or coursework) review and evaluate the literature relevant to the area of medical microbiology, and appreciate the limitations of this literature (exam and/or coursework)
Syllabus Outline	<ul style="list-style-type: none"> Detection of microbes: students will develop knowledge of the methods used in

	<p>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> <ul style="list-style-type: none"> • 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 • Epidemiology: students will develop knowledge of the principles and techniques used in epidemiology of 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 & 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, noscomial infections, opportunistic pathogens, environmentally acquired infections and endogenous infections
Contact Hours	<p>Formal lectures – 2 hours per week during teaching weeks (two semesters) M level tutorials – 1 hour per week for 20 weeks</p>
Teaching and Learning Methods	<p>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).</p> <p>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.</p>
Key Information	<p>Not applicable for level M programmes/modules</p>

Sets Information	
Reading Strategy	<p>At Masters level students are expected to demonstrate the ability to find information, assess its relevance and utilise it in their studies in an independent manner; however the programme team recognise that students entering the programme may be at different levels of the development of the skills required to undertake this successfully. Therefore module leaders will provide you with a starting point in terms of core readings and the lecture material will also give you a strong starting point. However it is in the area of further reading that you need to show the independence of skills and of knowledge development, so you will need to find the further readings yourself. However, the skills required to do this are covered during the early stages of the course, during induction week you will have a library induction session, and in the Research and Diagnostic Methodologies module (USSJYT-30-M) that you take during the first semester we will cover how to undertake a literature search and how to assess and use the material you find appropriately. The programme tutorials will provide opportunities for you to further develop these skills and to ask any questions that you have. Further support and guidance is available through the library which runs workshops that you can sign up to, and also has advice in its website.</p> <p>Module leaders will give you a clear indication of any essential reading, and point you towards the appropriate textbooks and journals for their discipline. This will usually be in the form of a reading list in the module guide; the indicative list on this module specification is as it states indicative as the relevant available books and journals can change regularly – and the module specification is a document written only once when a module is modified and can last for many years. So it is important that you refer to the reading list for your specific year group as the definitive document.</p> <p>All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be accessed remotely. .</p>
Indicative Reading List	<p>Selected Texts – Current Editions of:</p> <ul style="list-style-type: none"> • Greenwood, D., Slack, J.C.B. Peutherer, J.F. and Barer M.R. (2007) <i>Medical Microbiology</i>. 16th ed. Edinburgh: Churchill Livingstone/Elsevier (course recommended text) • Engleberg, N.C., DiRita, V.J. and Dermody, T. (2013) <i>Schaechter's Mechanisms of Microbial Disease</i>. 5th ed. Philadelphia: Lippincott, Williams & Wilkins. • Brooks, G., Carrol, K.C., Butel, J, Morse, S. and Mietzner, T. (2010) <i>Jawetz, Melnick & Adelberg's Medical Microbiology</i>. 25th ed. New York: McGraw Hill • Topley, W.W.C., Wilson, G.S., Kaufman, S.H.E. and Steward, M.W. (2005) <i>Topley and Wilson's Microbiology and Microbial Infection</i>. 10th ed. London: Hodder Arnold. – a five volume reference text available in the library. <p>Microbiology Journals</p> <ul style="list-style-type: none"> • Microbiology • Trends in Microbiology • Current Opinion in Microbiology • Microbiology and Molecular Biology Reviews • Antimicrobial Agents and Chemotherapy • Journal of Bacteriology

- Plus other relevant journals in Biological and Biomedical Sciences as guided by the module team

Internet Web Sites

e.g. Eurosurveillance Weekly and Monthly, Public Health England, WHO, CDC – guidance will be given over the reliability of different online resources

Part 3: Assessment

Assessment Strategy	<p>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.</p> <p>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.</p> <p>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.</p> <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.</p>
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Identify final assessment component and element	A1	
% weighting between components A and B (Standard modules only)	A:	B:
	50	50
First Sit		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Examination (3 hours)	100	
2.(etc)		
Component B Description of each element	Element weighting (as % of component)	
1. Essay (3000 words)	60	
2. Poster Presentation (20 minutes including defence)	40	

Resit (further attendance at taught classes is not required)

Component A (controlled conditions) Description of each element	Element weighting (as % of component)
1. Examination (3 hours)	100
2.(etc)	
Component B Description of each element	Element weighting (as % of component)
1. Essay (3000 words)	60
2. Presentation Report and Slides	40
<p>If a student is permitted a retake of the module under the University Regulations and Procedures, the assessment will be that indicated by the Module Description at the time that retake commences.</p>	