



**CORPORATE AND ACADEMIC SERVICES**

**MODULE SPECIFICATION**

Part 1: Basic Data					
Module Title	Medical Microbiology				
Module Code	USSJN5-30-M	Level	M	Version	2
Owning Faculty	Health and Life Sciences	Field	Applied Sciences		
Contributes towards	MSc Biomedical Science Compulsory for MSc Biomedical Science (Medical Microbiology)				
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard
Pre-requisites			Co- requisites		
Excluded Combinations			Module Entry requirements		
Valid From	Sept 2012		Valid to	September 2018	
CAP Approval Date	30 <sup>th</sup> May 2012				

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"> <li>demonstrate their knowledge of the theory and techniques of classical and modern microbial taxonomy, and discuss the controversies that exist in the field (exam A1 and/or coursework B1)</li> <li>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 A1 and/or coursework B1)</li> <li>evaluate the methods available for the detection of infectious agents and diagnosis of infections (exam A1 and/or coursework B1)</li> <li>critically discuss the strategies available to control and treat microbial &amp; viral infections (exam A1 and/or coursework B1)</li> <li>apply theoretical knowledge of identification &amp; classification, epidemiology, pathogenicity &amp; virulence, treatment &amp; control of pathogens to selected examples of infectious diseases (exam A1 and/or coursework B1)</li> <li>evaluate the importance of health and safety and good laboratory practice in microbiology (exam A1 and/or coursework B1)</li> <li>review and evaluate the literature relevant to the area of medical microbiology, and appreciate the limitations of this literature (exam A1 and/or coursework B1)</li> </ul>
Syllabus Outline	<ul style="list-style-type: none"> <li>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.</li> <li>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</li> </ul>

	<p>classify microbes</p> <ul style="list-style-type: none"> <li>• Epidemiology: students will develop knowledge of the principles and techniques used in epidemiology of infectious diseases</li> <li>• 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 &amp; 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</li> <li>• 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</li> <li>• 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</li> </ul>
<p>Contact Hours/Scheduled Hours</p>	<p>Formal lectures – 3 hours per week during teaching weeks  M level tutorials – 1 hours per week for 15 weeks  Conference week sessions – to be finalised, approximately 15 hours</p>
<p>Teaching and Learning Methods</p>	<p>Teaching will comprise a mix of formal lecture, group discussion, tutorials and data interpretation exercises.</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.</p>
<p>Reading Strategy</p>	<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, in the Research Methods and Practical Skills module 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</p>

	<p>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><b>Selected Texts – Current Editions of:</b></p> <ul style="list-style-type: none"> <li>• “Medical Microbiology.” Greenwood D., Slack J.C.B. Peutherer J.F. &amp; Barer M.R (Churchill Livingstone/Elsevier) (course recommended text)</li> <li>• “Schechter’s Mechanisms of Microbial Disease.” Engleberg N.C., DiRita V.J. &amp; Dermody T. (Lippincott, Williams &amp; Wilkins).</li> <li>• “Jawetz, Melnick &amp; Adelberg’s Medical Microbiology.” Brooks G., Carrol K.C., Butel J, Morse S. &amp; Mietzner T. (McGraw Hill/Lange)</li> <li>• “Topley and Wilson’s Microbiology and Microbial Infection.” (Text and CD ROM version) – a five volume reference text available in the library.</li> </ul> <p><b>Microbiology Journals</b></p> <ul style="list-style-type: none"> <li>• Microbiology</li> <li>• Trends in Microbiology</li> <li>• Current Opinion in Microbiology</li> <li>• Microbiology and Molecular Biology Reviews</li> <li>• Antimicrobial Agents and Chemotherapy</li> <li>• Journal of Bacteriology</li> </ul> <ul style="list-style-type: none"> <li>• Plus other relevant journals in Biological and Biomedical Sciences as guided by the module team</li> </ul> <p><b>Internet Web Sites</b> e.g. Eurosurveillance Weekly and Monthly, Eurotb.org, Health Protection Agency, WHO, CDC – guidance will be given over the reliability of different online resources</p>

Part 3: Assessment		
Assessment Strategy	All specialist subject modules on the MSc BMS programme have a 50:50 weighting of course work to final exam. Coursework as decided by the module leader in line with the programme assessment strategy.	
Identify final assessment component and element	<b>Examination</b>	
% weighting between components A and B (Standard modules only)	<b>A:</b>	<b>B:</b>
	<b>50</b>	<b>50</b>
<b>First Sit</b>		
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> <b>(as % of component)</b>	
1. Examination (3 hours) – final assessment	100	
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> <b>(as % of component)</b>	
1. Extended Essay (5000 words)	100	

<b>Resit (further attendance at taught classes is not required)</b>	
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>
1. Examination (3 hours)	100
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>
1. Extended Essay (5000 words)	100
<p>If a student is permitted an <b>EXCEPTIONAL RETAKE</b> of the module the assessment will be that indicated by the Module Description at the time that retake commences.</p>	