

MIIM30011 Molecular and Medical Microbiology

Credit Points:	12.50																													
Level:	3 (Undergraduate)																													
Dates & Locations:	This subject is not offered in 2011.																													
Time Commitment:	Contact Hours: 3 x one hour lectures per week (total contact hours: 36) Total Time Commitment: 120 hours																													
Prerequisites:	B. Science students: <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>MIIM20001 Principles of Microbiology & Immunology</td><td>Semester 1</td><td>12.50</td></tr><tr><td>MIIM20003 Experimental Microbiology</td><td>Semester 1, Semester 2</td><td>12.50</td></tr></table> B. Biomedicine students (2009 on): <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>BIOM20001 Molecular and Cellular Biomedicine</td><td>Semester 1</td><td>25</td></tr><tr><td>MIIM20002 Microbes, Infections and Responses</td><td>Semester 2</td><td>12.50</td></tr></table> B. Biomed. Sci. students (pre 2009): <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>MIIM20001 Principles of Microbiology & Immunology</td><td>Semester 1</td><td>12.50</td></tr><tr><td>MIIM20002 Microbes, Infections and Responses</td><td>Semester 2</td><td>12.50</td></tr></table>			Subject	Study Period Commencement:	Credit Points:	MIIM20001 Principles of Microbiology & Immunology	Semester 1	12.50	MIIM20003 Experimental Microbiology	Semester 1, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25	MIIM20002 Microbes, Infections and Responses	Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	MIIM20001 Principles of Microbiology & Immunology	Semester 1	12.50	MIIM20002 Microbes, Infections and Responses	Semester 2	12.50
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Corequisites:	None																													
Recommended Background Knowledge:	The prerequisite subjects should have provided a solid background in Microbiology and Immunology. An understanding of the molecules, genes and biology of the cell would be useful.																													
Non Allowed Subjects:	Pre 2010: <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>526-313 Medical Microbiology: Cellular Pathogens</td><td>Not offered 2010</td><td></td></tr></table>			Subject	Study Period Commencement:	Credit Points:	526-313 Medical Microbiology: Cellular Pathogens	Not offered 2010																						
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Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/																													
Contact:	Dr Karena Waller klwaller@unimelb.edu.au (mailto:klwaller@unimelb.edu.au) Prof Roy Robins-Browne: r.browne@unimelb.edu.au (mailto:r.browne@unimelb.edu.au) Administive Coordinator: Ms Corliss Chan																													

Subject Overview:	This subject describes how bacteria have evolved specialized structures and proteins that allow them to adapt and survive in a range of environments. In particular this subject will examine the contribution of processes such as protein secretion and gene regulation to bacterial survival during infection of humans (pathogenesis). From an understanding of the molecular basis of host-pathogen interactions, students will be able to understand the diverse mechanisms bacteria use to cause disease, and how infectious diseases are spread. A range of medically important bacteria will be discussed, with an emphasis on their ecology, pathogenesis and the pathobiology of the disease. The subject will also describe techniques and strategies such as mutant construction and molecular cloning that are used to dissect microbial function , and cover applied aspects of medical microbiology, such as the diagnosis of infections and the mechanisms of the antibacterial action of and resistance to antimicrobial agents. Students should be able to apply this knowledge to the determination of strategies for prevention, control and recognition of disease, including the design of vaccines and other therapeutics.
Objectives:	Upon completion of this subject, students should be able to: # describe the fundamental concepts of the transfer of proteins across the bacterial cell wall and the regulation of protein expression # explain the ways in which microbes interact with their hosts, the environment and each other # describe some of the ways in which bacteria cause disease and how infectious diseases caused by bacteria are spread, diagnoses, treated and/or prevented # apply relevant knowledge of bacterial pathogenesis, immunity and epidemiology to the determination of appropriate strategies for developing new diagnostic protocols, treatments or vaccines
Assessment:	10 on-line quizzes (1 per week) (10%)A 1 hour written examination held mid-semester (20%)A 2 hour written examination held in the examination period (70%)
Prescribed Texts:	None
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2011/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2011/B-COM) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2011/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2011/B-MUS) You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject, students should have developed the following generic skills: # the capacity to integrate knowledge across disciplines # the ability to comprehend a question, evaluate the relevant information and communicate an answer # the ability to interpret scientific literature and interpret data from electronic databases
Notes:	This subject is available to students enrolled in the: Pre-2008 B. Sc Pre-2008 B. Biomed. Sc. (Stream 7). NG B. Sc. NG B. Biomed
Related Course(s):	Bachelor of Science
Related Majors/Minors/Specialisations:	Biomedical Biotechnology (specialisation of Biotechnology major) Genetics Immunology (pre-2008 Bachelor of Science) Microbiology (pre-2008 Bachelor of Science) Microbiology, Infection and Immunology

	Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses
Related Breadth Track(s):	Microbiology and immunology