

# MIIM30011 Medical Microbiology: Bacteriology

<b>Credit Points:</b>	12.5																											
<b>Level:</b>	3 (Undergraduate)																											
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.																											
<b>Time Commitment:</b>	Contact Hours: 3 x one hour lectures per week (total contact hours: 36) Total Time Commitment: 170 hours																											
<b>Prerequisites:</b>	<p><b>B. Science students (pre 2013)</b> Prerequisite subjects are both:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MIIM20001 Principles of Microbiology &amp; Immunology</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>MIIM20003 Experimental Microbiology</td> <td>Not offered 2016</td> <td>12.50</td> </tr> </tbody> </table> <p>B. Sc. students who have taken MIIM20001, Principles in Microbiology and Immunology BUT NOT MIIM20003, Experimental Microbiology MAY be admitted to this subject after discussion with and specific permission from the subject coordinators.</p> <p><b>B. Science students (2013 on)</b> Prerequisite subjects are both:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MIIM20001 Principles of Microbiology &amp; 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> </tbody> </table> <p><b>B. Biomedicine students (2009 on)</b> Prerequisite subjects are both:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <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> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	MIIM20001 Principles of Microbiology & Immunology	Semester 1	12.50	MIIM20003 Experimental Microbiology	Not offered 2016	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	Subject	Study Period Commencement:	Credit Points:	BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25	MIIM20002 Microbes, Infections and Responses	Semester 2	12.50
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<b>Corequisites:</b>	None																											
<b>Recommended Background Knowledge:</b>	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.																											
<b>Non Allowed Subjects:</b>	526-313 Medical Microbiology: Cellular Pathogens (pre 2010) 526-330 Molecular and Medical Microbiology (pre 2010) MIIM30011 Molecular and Medical Microbiology (pre 2011)																											
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.&lt;/p&gt; &lt;p&gt;It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student</p>																											

	Equity and Disability Support: <a href="http://services.unimelb.edu.au/disability">http://services.unimelb.edu.au/disability</a></p>
<b>Coordinator:</b>	Dr Odilia Wijburg, Prof Roy Robins-Browne
<b>Contact:</b>	Subject Coordinators Dr Odilia Wijburg <b><a href="mailto:odilia@unimelb.edu.au">odilia@unimelb.edu.au</a> (mailto:odilia@unimelb.edu.au)</b> Prof Roy Robins-Browne: <b><a href="mailto:r.browne@unimelb.edu.au">r.browne@unimelb.edu.au</a> (mailto:r.browne@unimelb.edu.au)</b> Administive Coordinator: <b><a href="mailto:BiomedSci-AcademicServices@unimelb.edu.au">BiomedSci-AcademicServices@unimelb.edu.au</a> (mailto:BiomedSci-AcademicServices@unimelb.edu.au)</b>
<b>Subject Overview:</b>	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.
<b>Learning Outcomes:</b>	Upon completion of this subject, students should be able to: <ul style="list-style-type: none"> <li># explain the ways in which microbes interact with their hosts, the environment and each other</li> <li># describe some of the ways in which bacteria cause disease and how infectious diseases caused by bacteria are spread, diagnosed, treated and/or prevented</li> <li># describe the fundamental concepts of the transfer of proteins across the bacterial cell wall and the regulation of protein expression</li> <li># apply relevant knowledge of bacterial pathogenesis, immunity and epidemiology to the determination of appropriate strategies for developing new diagnostic protocols, treatments or vaccines</li> </ul>
<b>Assessment:</b>	10 on-line quizzes (1 per week) (5%) 2 45 minute written examination held around week 5 and 10 (2 x 20%) A 2 hour written examination held in the examination period (55%)
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	Wilson, Salyers, Whitt, and Winkler, Bacterial Pathogenesis: a Molecular Approach, (3rd Edition), ASM Press USA.
<b>Breadth Options:</b>	This subject potentially can be taken as a breadth subject component for the following courses: <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-ARTS">https://handbook.unimelb.edu.au/view/2016/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-COM">https://handbook.unimelb.edu.au/view/2016/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-ENVS">https://handbook.unimelb.edu.au/view/2016/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-MUS">https://handbook.unimelb.edu.au/view/2016/B-MUS</a>)</li> </ul> <p>You should visit <b>learn more about breadth subjects</b> (<a href="http://breadth.unimelb.edu.au/breadth/info/index.html">http://breadth.unimelb.edu.au/breadth/info/index.html</a>) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>

<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	On completion of this subject, students should have developed the following generic skills: <ul style="list-style-type: none"> <li># the capacity to integrate knowledge across disciplines</li> <li># the ability to comprehend a question, evaluate the relevant information and communicate an answer</li> <li># the ability to interpret scientific literature and interpret data from electronic databases</li> </ul>
<b>Notes:</b>	This subject is available to students enrolled in the: <ul style="list-style-type: none"> <li>NG B. Sc.</li> <li>NG B. Biomed</li> </ul>
<b>Related Majors/Minors/ Specialisations:</b>	Biomedical Biotechnology (specialisation of Biotechnology major) <ul style="list-style-type: none"> <li>Genetics</li> <li>Genetics</li> <li>Genetics</li> <li>Genetics</li> <li>Genetics</li> <li>Immunology</li> <li>Immunology (pre-2008 Bachelor of Science)</li> <li>Infection and Immunity</li> <li>Microbiology</li> <li>Microbiology (pre-2008 Bachelor of Science)</li> <li>Science-credited subjects - new generation B-SCI and B-ENG.</li> <li>Selective subjects for B-BMED</li> </ul>
<b>Related Breadth Track(s):</b>	Microbiology and immunology