

# MIIM20001 Principles of Microbiology & Immunology

<b>Credit Points:</b>	12.5									
<b>Level:</b>	2 (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: 36 lectures (three per week); 12 computer based tutorials (one per week); 2 x 1.5 hrs practical sessions located in weeks 11 and 12 Total Time Commitment: 170 hours									
<b>Prerequisites:</b>	Pre-requisites are: <table border="1" data-bbox="386 571 1484 775"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOL10004 Biology of Cells and Organisms</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>BIOL10005 Genetics &amp; The Evolution of Life</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	BIOL10004 Biology of Cells and Organisms	Semester 1	12.50	BIOL10005 Genetics & The Evolution of Life	Semester 2	12.50
Subject	Study Period Commencement:	Credit Points:								
BIOL10004 Biology of Cells and Organisms	Semester 1	12.50								
BIOL10005 Genetics & The Evolution of Life	Semester 2	12.50								
<b>Corequisites:</b>	None									
<b>Recommended Background Knowledge:</b>	The prerequisite subjects should have provided an appropriate background for this subject.									
<b>Non Allowed Subjects:</b>	None									
<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 Equity and Disability Support: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>									
<b>Coordinator:</b>	Assoc Prof Jason Mackenzie, Dr Karena Waller									
<b>Contact:</b>	Subject Coordinators Dr Karena Waller <a href="mailto:klwaller@unimelb.edu.au">klwaller@unimelb.edu.au</a> ( <a href="mailto:klwaller@unimelb.edu.au">mailto:klwaller@unimelb.edu.au</a> ) Associate Professor Jason Mackenzie <a href="mailto:jason.mackenzie@unimelb.edu.au">jason.mackenzie@unimelb.edu.au</a> ( <a href="mailto:jason.mackenzie@unimelb.edu.au">mailto:jason.mackenzie@unimelb.edu.au</a> ) Administrative Coordinator <a href="mailto:BiomedSci-AcademicServices@unimelb.edu.au">BiomedSci-AcademicServices@unimelb.edu.au</a> ( <a href="mailto:BiomedSci-AcademicServices@unimelb.edu.au">mailto:BiomedSci-AcademicServices@unimelb.edu.au</a> )									
<b>Subject Overview:</b>	This subject introduces students to the excitingly diverse world of microbes and discusses the roles they play not only in causing infectious disease but also in both creating and maintaining life as we know it. Various types of microbes and their basic life processes are described, with the focus mainly on bacteria and viruses. Cell biology principles and roles of organelles in protein trafficking will be discussed. Bacterial genetics and metabolism are explored, with the emphasis on how these areas determine observed behaviours and activities. The components of the immune system are outlined and their interactions and functions described.									

	<p>A central part of this subject is outlining some of the strategies used by microbes to cause disease, and the counter strategies employed by the immune system to prevent disease. Other ways of controlling microbes, including antibiotics and vaccines are also discussed. The key roles played by microbes and the immune system in medical and biotechnological research is described. This subject provides students intending to specialize in the biological sciences with an understanding of the basic concepts in the disciplines of both Microbiology and Immunology.</p>
<b>Learning Outcomes:</b>	<p>Upon completion of this subject, students should:</p> <ul style="list-style-type: none"> <li># be familiar with the terminology used by microbiologists and immunologists and have acquired a broad foundation for future subjects in microbiology and immunology;</li> <li># appreciate the importance of microbiology and immunology in the fields of medicine, genetics and biotechnology;</li> <li># have insight into the type of investigations fundamental to the development of basic microbiological concepts;</li> <li># be able to describe simple microbial life processes; and understand how these processes are involved in infectious disease and interactions with hosts' immune systems, adaptation and survival of microorganisms and the promotion or control of microbial growth;</li> <li># understand the different properties of Bacteria, Archaea and eukaryotic microbial cells and viruses and the significance of all these microorganisms in the environment;</li> <li># be able to describe the basic principles of the microbial life cycle (both bacterial and viral), identifying the key steps and proteins (both microbial and host) utilised during this process.</li> </ul>
<b>Assessment:</b>	<p>A 45 minute multiple choice examination held mid-semester (20%); A 2 hour written examination in the end of semester exam period (68%); On-going computer based assessment during semester (10%); Computer based assessment of practical in weeks 11 and 12 (2%)</p>
<b>Prescribed Texts:</b>	<p>Prescott's Microbiology by Willey J, Sherwood L, Woolverton C. 9th edn, 2014 Molecular Biology of the Cell, Alberts et al, 6th edn, 2014</p>
<b>Recommended Texts:</b>	
<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <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>	<p>Subject EFTSL, Level, Discipline &amp; Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a></p>
<b>Generic Skills:</b>	<p>Upon completion of this subject, students should have developed the following generic skills:</p> <ul style="list-style-type: none"> <li># An enhanced ability to seek information from textbooks and computer based sources;</li> <li># The ability to comprehend a question, evaluate the relevant information and communicate an answer in writing; and</li> <li># The ability to manage time effectively to ensure attendance at lectures and examinations.</li> </ul>
<b>Notes:</b>	<p>This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BAsC or a combined BSc course.</p> <p>This subject is not available to students enrolled in the Bachelor of Biomedicine.</p> <p>Where appropriate:</p> <ul style="list-style-type: none"> <li># whilst students will not be involved in the manipulation and handling of animals, tissues and other products obtained from appropriately euthanased animals will be used in some experiments.</li> <li># These experiments will be approved by the University of Melbourne Animal Welfare Committee.</li> <li># Experiments contained in this unit will also be approved by the Biosafety and Gene Technology Committee.</li> </ul>

<b>Related Majors/Minors/ Specialisations:</b>	Science-credited subjects - new generation B-SCI and B-ENG.
<b>Related Breadth Track(s):</b>	Microbiology and immunology