

<b>Course Outline</b>	
Course Description	This course is both for students majoring in microbiology and also those who wish to develop their knowledge and skills in microbiology. The course covers Introductory Microbiology including cell structure, function, physiology, and diversity. The course then focuses on specific areas of microbiology: Environmental Microbiology, Food Microbiology, Medical Microbiology, Microbes in Biotechnology, Virology, and Eukaryotic Microbiology.
Course Aims	Microbiology 1 aims to introduce you to microbes, their process, interactions and the techniques scientists use to study them.
Student Learning Outcomes	By the completion of this course students should know: <ul style="list-style-type: none"> <li>- the characteristics of Bacteria, Eukarya, Archaea and Viruses;</li> <li>- the fundamental processes carried out by microbes;</li> <li>- the types of interactions that occur between microbial populations;</li> <li>- how microbial growth can be controlled</li> <li>- standard microbiological laboratory techniques and safe, efficient work practices;</li> <li>- how to conduct effective literature and experimental research;</li> <li>- how to communicate clearly and work constructively as a team.</li> </ul>
Teaching Strategies	<p>Lectures are used to introduce the concepts of microbiology and laboratory sessions are used to both complement the lecture material and provide practice in standard microbiological techniques. Laboratories sessions encourage teamwork. Online tutorials are additionally designed to support concepts presented in lectures and practiced in the laboratory, and support students in their research projects.</p> <p>The laboratory research project forms an essential element of the students' scientific training. The research project, as integrated with the other components of the course, have been designed in accordance with the UNSW Guidelines on Learning that Inform Teaching (<a href="http://www.guidelinesonlearning.unsw.edu.au">www.guidelinesonlearning.unsw.edu.au</a>) to:</p> <ul style="list-style-type: none"> <li>- teach students the process of scientific inquiry through progressive cycles of critical analysis of their research and their own thinking;</li> <li>- facilitate multidisciplinary thinking to reflect current research and professional practice in the sciences;</li> <li>- reinforce deep learning and promote collaborative inquiry;</li> <li>- integrate students' disciplinary understanding and research practice with the development of their communication skills, teamwork, and information literacy skills.</li> </ul>
Major Topics (Syllabus Outline)	<ul style="list-style-type: none"> <li>○ Microbial Cell Structure and Function</li> <li>○ Evolution of Microbes and Microbial Diversity</li> <li>○ Introduction to Archaea</li> <li>○ Environmental Microbiology</li> <li>○ Microbial Processes and Interactions</li> <li>○ Medical Microbiology</li> <li>○ Food Microbiology</li> <li>○ Virology</li> <li>○ Microbes in Biotechnology and Synthetic Biology</li> <li>○ Eukaryotic Microbiology</li> </ul>