

# Chemistry

<b>Year and Campus:</b>	2016			
<b>Coordinator:</b>	Associate Professor Uta Wille			
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<b>Overview:</b>	Chemistry major students will develop the capacity to view the world from a molecular perspective and to solve complex problems that span the breadth of chemistry and other sciences. Pathways for chemistry majors will include careers in research (through further study including MSc and PhD programs in chemistry and allied areas), teaching, government and professional positions.			
<b>Learning Outcomes:</b>	<p><i>Chemistry Major Graduates should demonstrate:</i></p> <p><b>Understanding of ways of scientific thinking by:</b></p> <ul style="list-style-type: none"> <li># recognising the creative endeavour involved in acquiring knowledge, and the testable and contestable nature of the principles of chemistry;</li> <li># recognising that chemistry plays an essential role in society and underpins many industrial, technological and medical advances;</li> <li># understanding and being able to articulate aspects of the place and importance of chemistry in the local and global community.</li> </ul> <p><b>Depth and breadth of chemistry knowledge by:</b></p> <ul style="list-style-type: none"> <li># demonstrating a knowledge of, and applying the principles and concepts of chemistry;</li> <li># recognising that chemistry is a broad discipline that impacts on, and is influenced by, other scientific fields.</li> </ul> <p><b>Expertise in the investigation and solution of qualitative and quantitative problems in the chemical sciences, both individually and in teams, by:</b></p> <ul style="list-style-type: none"> <li># synthesising and evaluating information from a range of sources, including traditional and emerging information technologies and methods;</li> <li># formulating hypotheses, proposals and predictions and designing and undertaking experiments in a safe and responsible manner;</li> <li># applying recognised methods and appropriate practical techniques and tools, and being able to adapt these techniques when necessary;</li> <li># collecting, recording and interpreting data and incorporating qualitative and quantitative evidence into scientifically defensible arguments.</li> </ul> <p><b>Skills in communication of chemical knowledge by:</b></p> <ul style="list-style-type: none"> <li># Presenting information, articulating arguments and conclusions, in a variety of modes, to diverse audiences, and for a range of purposes;</li> <li># Appropriately documenting the essential details of procedures undertaken, key observations, results and conclusions.</li> </ul> <p><b>Capacity to take personal, professional and social responsibility by:</b></p> <ul style="list-style-type: none"> <li># demonstrating a capacity for self-directed learning;</li> <li># demonstrating a capacity for working responsibly and safely;</li> <li># recognising the relevant and required ethical conduct and behaviour within which chemistry is practised.</li> </ul>			
<b>Structure &amp; Available Subjects:</b>	Completion of 50 points of study at third year level			
<b>Majors/Minors/Specialisations</b>	<p>There are two specialisations within the Chemistry major.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #cccccc;">Major/Minor/Specialisation</th> </tr> </thead> <tbody> <tr> <td>Chemistry</td> </tr> <tr> <td>Medicinal Chemistry</td> </tr> </tbody> </table>	Major/Minor/Specialisation	Chemistry	Medicinal Chemistry
Major/Minor/Specialisation				
Chemistry				
Medicinal Chemistry				

<b>Notes:</b>	It is recommended that students who plan to major in Chemistry to also have completed the following: <ul style="list-style-type: none"><li># Mathematics and Statistics - two semesters of first year mathematics, for example MAST10005 Calculus 1, MAST10006 Calculus 2 and/or MAST10007 Linear Algebra.</li><li># Physics - VCE Units 3/4 12 Physics or equivalent, for example PHYC10005 Physics 1: Fundamentals</li></ul>
<b>Related Course(s):</b>	Bachelor of Science