

# CHEM10003 Chemistry 1

<b>Credit Points:</b>	12.50												
<b>Level:</b>	1 (Undergraduate)												
<b>Dates &amp; Locations:</b>	2012, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. Semester 2, Parkville - Taught on campus. Lectures, practicals, tutorials/workshops, independent learning tasks, computer-aided learning.												
<b>Time Commitment:</b>	Contact Hours: 3 x one hour lectures per week, 6 x three hours of practical activities during semester, 1 x one hour tutorial/workshop session per week, 6 hours of computer aided learning during semester, 8 hours of independent learning tasks during semester. Total Time Commitment: Estimated total time commitment of 120 hours												
<b>Prerequisites:</b>	<p>Chemistry</p> <p>One of:</p> <ul style="list-style-type: none"> <li># VCE Units 3/4 Chemistry, or equivalent</li> </ul> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CHEM10007 Fundamentals of Chemistry</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>Plus Mathematics</p> <p>One of:</p> <ul style="list-style-type: none"> <li># VCE Units 3/4 Mathematical Methods</li> <li># VCE Units 3/4 Further Mathematics</li> <li># Admission into the Bachelor of Science course</li> <li># Admission into the Bachelor of Commerce course.</li> </ul> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MAST10012 Introduction to Mathematics</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	CHEM10007 Fundamentals of Chemistry	Semester 1	12.50	Subject	Study Period Commencement:	Credit Points:	MAST10012 Introduction to Mathematics	Semester 1	12.50
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CHEM10007 Fundamentals of Chemistry	Semester 1	12.50											
Subject	Study Period Commencement:	Credit Points:											
MAST10012 Introduction to Mathematics	Semester 1	12.50											
<b>Corequisites:</b>	None												
<b>Recommended Background Knowledge:</b>	None												
<b>Non Allowed Subjects:</b>	None												
<b>Core Participation Requirements:</b>	For the purposes of considering applications for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005) and Students Experiencing Academic Disadvantage Policy, this subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the Subject Coordinator and the Disability Liaison Unit. Hhttp://www.services.unimelb.edu.au/disability/												
<b>Coordinator:</b>	Dr Stephen Best, Prof Muthupandian Ashokkumar												
<b>Contact:</b>	Email: first-year-director@chemistry.unimelb.edu.au												
<b>Subject Overview:</b>	The subject provides an introduction to stoichiometry; gases; energy and thermochemistry; chemical equilibrium; acid-base chemistry; properties of solutions, aspects of main group chemistry: structure and bonding in elements and compounds of groups 14-18; solutions and pH equilibria; physical properties of solution. intermolecular forces and extended solid state												

	structures; structure and bonding of alkanes, alkenes and alkynes; benzene and its derivatives; functional groups; and spectroscopy and determination of structure.
<b>Objectives:</b>	<p>The aim of the subject is to provide students with an understanding of the place of chemistry in biology, technology and the physical environment; the nature of gases; basic energy concepts; the nature of chemical equilibria; the structure and bonding of inorganic molecules; the nature of the solid state; the structures of hydrocarbon and main group molecules; the important functional groups; the nature of techniques of measurement; and the evolution of current theories.</p> <p>In the practical component, students should develop basic laboratory skills (observation, analytical techniques, report writing); oral communication skills; independent learning skills; and an appreciation of the health and safety issues associated with the safe handling and disposal of laboratory chemicals.</p>
<b>Assessment:</b>	A 30-minute on-line mid-semester test (5%); ongoing assessment of practical work (20%); a 3-hour written examination in the examination period (75%). Satisfactory completion of practical work is necessary to pass the subject. Independent learning tasks need to be completed in order to pass the subject.
<b>Prescribed Texts:</b>	S S Zumdahl, Chemical Principles 6th Ed, Houghton Mifflin, 2008. J McMurry, Organic Chemistry 8th Ed, Brooks/Cole, Cengage Learning 2012.
<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/2012/B-ARTS">https://handbook.unimelb.edu.au/view/2012/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-COM">https://handbook.unimelb.edu.au/view/2012/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-ENVS">https://handbook.unimelb.edu.au/view/2012/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-MUS">https://handbook.unimelb.edu.au/view/2012/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>	<p>This subject encompasses particular generic skills so that on completion of this subject students should have developed skills relating to:</p> <ul style="list-style-type: none"> <li># the organization of work schedules that permit appropriate preparation time for tutorials, practical classes and examinations;</li> <li># the use of electronic forms of communication;</li> <li># the utilisation of computer-aided learning activities to enhance understanding;</li> <li># the performance of basic manipulations with laboratory equipment;</li> <li># the recording of observations, the analysis of information and the interpretation of data within a laboratory setting;</li> <li># accessing information from the library employing both electronic and traditional means.</li> <li># working collaboratively with other students;</li> <li># the use of conceptual models;</li> <li># problem solving; and</li> <li># critical thinking.</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>A laboratory coat and safety glasses are required for laboratory activities.</p> <p>It is recommended that students have access to a molecular model kit.</p>
<b>Related Course(s):</b>	Bachelor of Biomedicine
<b>Related Majors/Minors/Specialisations:</b>	B-ENG Chemical Engineering stream B-ENG Chemical and Biomolecular Engineering stream

	Master of Engineering (Biomedical) Science credit subjects* for pre-2008 BSc, BAsC and combined degree science courses Science-credited subjects - new generation B-SCI and B-ENG. Core selective subjects for B-BMED.
<b>Related Breadth Track(s):</b>	Biochemistry Environmental Chemistry Chemical Engineering