

CHEM10008 Foundation Studies in Chemistry

Credit Points:	12.5
Level:	1 (Undergraduate)
Dates & Locations:	2016, Dookie This subject commences in the following study period/s: Semester 1, Dookie - Taught on campus.
Time Commitment:	Contact Hours: 36 hours of lectures, 12 hours of tutorials, 18 hours of practicals, 18 hours of computer-aided learning/online discussion Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>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.</p> <p>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: http://services.unimelb.edu.au/disability</p></p>
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Subject Overview:	<p>This unit is designed for students with little or no background in chemistry who wish to gain an understanding of basic chemistry. Topics covered include the nature of matter, solutions and gases, the chemical change related to equilibrium, energy and kinetics, and the nature of redox processes; and structures and functional groups of inorganic molecules. In introducing the nature of matter and the chemical elements, an elementary discussion of atomic structure and the bonding of elements to form compounds is given. Further development requires a discussion of the mole concept. This leads to a study of chemical reactions, with discussions on oxidation and reduction, acids and bases, energy changes in reactions, reaction rates and chemical equilibrium, and an introduction to organic chemistry.</p>
Learning Outcomes:	<p>This aim of this subject is to provide students with an understanding of:</p> <ul style="list-style-type: none"> # Nature of matter: elements, atoms, ion and molecules # Electronic structure of atoms and ions # Bond formation including covalent, ionic metallic, hydrogen bonding, van der Waal's # Solubility and solution state; ions and hydration # The behaviour of gases # The mole concept, concentrations and stoichiometry # Acids, bases neutralisation reactions and salt formation # Acid/base strength and the pH scale # Energy and chemical systems # Rates and reaction and reaction order # Catalysis and enzymes

	<ul style="list-style-type: none"> # Chemical equilibrium; the equilibrium, constant, K_a K_b stability constants and solubility products # Redox reactions and redox potentials # Organic molecules: structure nomenclature and functional groups # Hydrophobicity and hydrophilicity # Biologically significant macromolecules
Assessment:	Six practical reports each up to 500 words due throughout the semester worth 20% Three 45-minute feedback tests taken throughout the semester worth 30% A three-hour exam to be held during the end-of-semester exam period worth 50% Satisfactory completion of practical work is necessary to pass the subject. Independent Learning Tasks need to be completed in order to pass the subject.
Prescribed Texts:	S.J. Zumdahl Chemical Principles 7 th edition, Brooks/Cole, Cengage Learning 2012
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>This subject encompasses particular generic skills so that on completion of the subject students should have developed skills relating to:</p> <ul style="list-style-type: none"> # The organisation of work schedules that permit appropriate preparation time for tutorials practical classes and examinations # The use of electronic forms of communication # The utilisation of computer-aided learning activities to enhance understanding # The performance of basic manipulations with laboratory equipment # The recording of observations, the analysis of information and the interpretation of data within a laboratory setting # Accessing information from the library via both electronic and traditional means # Working collaboratively with other students # Problem solving and critical thinking
Related Course(s):	Diploma in General Studies