CHEM10009 Advanced Chemistry for BioSciences

Credit Points:	12.5
Level:	1 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 3 x one-hour lectures per week, 1 x one-hour tutorial per week (11 weeks, starting from week 2), 6 x three-hour lab/workshop during the semester, 6 hours of computer-aided learning during the semester, 8 hours of independent learning tasks during the semester. Total Time Commitment: 170 hours
Prerequisites:	1. Chemistry # A study score of at least 35 in VCE Units 3/4 Chemistry, or equivalent 2. Mathematics One of: # A study score of at least 32 in VCE Units 3/4 Mathematical Methods, or equivalent A study score of at least 29 in VCE Units 3/4 Specialist Mathematics
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	

Subject	Study Period Commencement:	Credit Points:
CHEM10003 Chemistry 1	Semester 1, Semester 2	12.5
CHEM10006 Chemistry for Biomedicine	Semester 1	12.5

Core Participation Requirements:	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. 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
Coordinator:	Prof Carl Schiesser, Prof Mark Rizzacasa
Contact:	Dr Sonia Horvat **shorvat@unimelb.edu.au (mailto:shorvat@unimelb.edu.au)**
Subject Overview:	This subject focuses on the chemistry that is important to understanding the atomic and molecular foundations of the biological sciences. It provides an introduction to molecular structure and bonding; structure of hydrocarbons; functional groups; energy and thermochemistry; chemical equilibrium; acid-base chemistry; redox reactions; transition metal chemistry; electrophilic and nucleophilic reactions; chemical kinetics; spectroscopy of organic compounds.

Learning Outcomes:	At the completion of this subject students should be able to demonstrate an understanding of: # the place of chemistry in the biosciences; # the structure and bonding of organic and inorganic molecules; # important functional groups and bio-polymers; # basic energy concepts; the nature of chemical equilibria; # redox reactions; transition metals in biomolecules. 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.
Assessment:	3 equally weighted 30 minute online tests held early-semester, mid-semester and late-semester (6%) Ongoing assessment of practical work throughout the semester (20%) One 3-hour written examination during the examination period (74%) Hurdle requirement: students must pass the practical assessment work and online tests to pass the subject
Prescribed Texts:	Blackman, S. Bottle, S. Schmid, M. Mocerino and U. Wille, Chemistry 3rd edition, Wiley, 2015.
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2016/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2016/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	This subject encompasses particular generic skills so that on completion students should have developed skills relating to: # the organization 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 data within a laboratory setting; # accessing information from the library employing both electronic and traditional means; # working collaboratively with other students; # the use of conceptual models; # problem solving; # critical thinking.
Related Majors/Minors/ Specialisations:	Science-credited subjects - new generation B-SCI and B-ENG.