CHEM20024 Organic and Inorganic Chemistry 2

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	This subject is not offered in 2012. Lectures, tutorials and practical classes.
Time Commitment:	Contact Hours: Three 1-hour lectures per week for 8 weeks (semester 1, usually weeks 1-4 and 9-12); one 1-hour tutorial per week for 7 weeks (semester 1, usually weeks 1-4 and 10-12); one 3-hour practical class per week for eight weeks (semester 2, weeks 1-8); two 3-hour practical class per week for two weeks (semester 2, weeks 9-10). Total 67 hours. Total Time Commitment: Estimated total time commitment of 120 hours
Prerequisites:	One of # 610-210 Light, Matter & Chemical Change A (prior to 2009) # 610-211 Light, Matter & Chemical Change B (prior to 2009)
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students may not enrol in this subject and either CHEM20018 Reactions and Synthesis or CHEM20019 Practical Chemistry. Students who have completed any one of the following may not gain credit for this subject # 610-220 Organic Chemistry (prior to 2009) # 610-221 Organic & Bio-organic Chemistry (prior to 2009) # 610-240 Inorganic and Bio-inorganic Chemistry A (prior to 2009) # 610-241 Inorganic and Bio-inorganic Chemistry B (prior to 2009) # CHEM20014 Organic & Physical Chemistry 2 # CHEM20025 Physical & Inorganic Chemistry # CHEM20021 Physical Chemistry 2 # CHEM20022 Organic Chemistry 2 # CHEM20023 Inorganic Chemistry 2
Core Participation Requirements:	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/
Contact:	**Email: second-year-director@chemistry.unimelb.edu.au (mailto:second-year-director@chemistry.unimelb.edu.au)**
Subject Overview:	The subject includes lecture and practical components. The lectures provide coverage of the synthesis and some reactions of simple polyfunctional organic molecules and cover the reactions and properties of s-, p- and d- block elements. The practical component will include the synthesis of different classes of organic and inorganic compounds, characterization of chemical compounds using modern analytical techniques; analysis of samples with single and multiple components; determination of the kinetic and thermodynamic properties of molecules; measurement and interpretation of the spectroscopic and magnetic properties of inorganic and organic compounds. This subject, together with prior completion of a second year level subject in Physical Chemistry (610-210 or 610-211), will provide the skills needed to permit enrolment in *Structure and Properties* and thereby provide a path to a Chemistry major.

Objectives:	Upon completion of this subject students should;
	# consolidate their understanding of molecular properties and energetics and be able to apply these concepts to the synthesis of organic and inorganic compounds; # know approaches to the synthesis and some reactions of simple polyfunctional organic compounds; # be able to distinguish between kinetically and thermodynamically controlled reactions and to apply these concepts to rationalise synthetic transformations; # have a knowledge of the main factors controlling the substitution and redox reactions of main group and transition metal elements; # acquire skills needed to conduct chemical synthesis; # develop the skills needed to perform a range of techniques used for chemical analysis; # be able to interpret and report the results of spectroscopic or analytical measurements; # apply procedures that allow the safe handling of chemicals and conduct of chemical reactions.
Assessment:	Three to five short tests of approximately 1 hour duration conducted online using the learning management system (LMS) for a total of 15%, Ongoing assessment of practical work (of technical competence, reporting and interpretative skills) in the form of approximately 8 short reports (three to four pages) and one long report (five to six pages) due during the semester (35%) and a two-hour end of semester examination (50%)
Prescribed Texts:	J. McMurry, Organic Chemistry, 8th Ed, Thomson Brooks/Cole, 2012/ Shriver and Atkins' Inorganic Chemistry, Oxford University Press 2010.
Recommended Texts:	None.
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:	This subject will provide students with opportunities to develop the following generic skills:
	# the ability to comprehend complex concepts and effectively communicate this understanding to the scientific community and in a manner accessible to the wider community; # the ability to analyse and solve abstract technical problems; # the ability to connect and apply the learnt concepts to a broad range of scientific problems beyond the scope of this subject; # an awareness of advanced technologies; # the ability to use conceptual models to rationalise observations; # the ability to think and reason logically; # the ability to think critically and independently; # data recording and interpretation of scientific observations; # ability to search databases and the literature; # be able to apply procedures for data and error analysis.
Notes:	This subject is available for science credit to students enrolled in the BSc (pre-2008 degree), BASc or a combined BSc course. A laboratory coat and safety glasses are required for laboratory activities. Subject materials will be disseminated via the learning management system (LMS). Students will be expected to be able to access the LMS for tests conducted through the semester.
Related Majors/Minors/ Specialisations:	Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses