610-260 Analysis in Chemical and Life Sciences

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: 20 lectures (two per week for 10 weeks), nine tutorials and 42 hours of practical work Total Time Commitment: 120 hours
Prerequisites:	One of Chemistry 610-141, 610-121 or 610-051 plus one of 610-142, 610-122 or 610-052.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Credit cannot be gained for this subject and 610-285.
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. 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.
Coordinator:	Professor F Separovic
Subject Overview:	This subject will cover analytical methods used in research and industry for identification and determination of the elements and molecular species present in a sample, as well as physical methods used in determination of the structure of organic compounds. Methods covered will centre on atomic absorption spectrometry (AAS), infrared, ultraviolet/visible, nuclear magnetic resonance spectroscopy, and mass spectrometry. Separation and analysis methods may include liquid chromatography (HPLC), ion chromatography (IC), gas chromatography (GC and GLC) and gel electrophoresis. The practical component of this subject should allow students to develop laboratory skills through hands-on experience with a variety of spectroscopic and analytical instruments (NMR, HPLC, GC, AAS). They will also develop skills in the interpretation of experimental data. Upon completion of this subject, students should have acquired knowledge of analytical methods and critical thinking skills applicable across the chemical and life sciences. In particular, emphasis will be placed upon the choice and application of techniques for separation and analysis of chemical and biological materials and the development of problem-solving skills in the spectroscopic determination of molecular structure. This subject will provide the student with the opportunity to establish and develop the following generic skills: problem-solving and critical thinking skills, the ability to use conceptual models to rationalise observations, an understanding of the changing knowledge base, a capacity to articulate knowledge and understanding in written presentation, and a capacity to manage competing demands on time including self-directed work.
Assessment:	Ongoing assessment of practical work in the form of short laboratory reports due during the semester (40%); a 2-hour written examination in the examination period (60%). Satisfactory completion of both theory and practical work is necessary to pass the subject.
Prescribed Texts:	None
Breadth Options:	This subject is a level 2 or level 3 subject and is not available to new generation degree students as a breadth option in 2008. This subject or an equivalent will be available as breadth in the future. Breadth subjects are currently being developed and these existing subject details can be used as guide to the type of options that might be available.

	2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Notes:	Students enrolled in the BSc (pre-2008 BSc), BASc or a combined BSc course will receive science credit for the completion of this subject.
Related Course(s):	Graduate Diploma in Biotechnology