610-360 Analytical & Environmental Chemistry

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus. Lectures and practical work
Time Commitment:	Contact Hours: 18 lectures and 32 hours of practical (project) work Total Time Commitment: 120 hours total time commitment.
Prerequisites:	One of # 610-260 (prior to 2009) # *Environmental Chemistry*
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
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:	Assoc Prof Spas Dimitrov Kolev
Subject Overview:	This subject covers the main sources and types of environmental contaminants in the biosphere (water, soil and air) with a focus on water contaminants and their effect on water quality. The most frequently used analytical techniques in environmental and industrial monitoring and analysis will be outlined in the context of achieving desirable environmental outcomes. These techniques include volumetric analysis, gravimetric analysis, optical techniques such as inductively coupled plasma optical emission spectrometry, and electroanalytical techniques such as potentiometry (ion-selective electrodes, potentiometric stripping analysis) and voltammetry (polarography, anodic stripping voltammetry).
Objectives:	Upon completion of the subject, students should have acquired an in-depth understanding of the origin, distribution and role of environmental contaminants, and be able to select suitable methods for monitoring them. Students will also learn to apply analytical and problem-solving skills to the consideration of treatment options for industrial effluents. From the practical component, students should acquire enhanced laboratory skills and competence in using modern laboratory techniques.
Assessment:	Ongoing assessment of practical work in the form of short laboratory reports due during the semester (50%); a 45-minute written test held mid-semester (10%); a 2-hour written examination in the examination period (40%). Satisfactory completion of both theory and practical work is necessary to pass the subject.
Prescribed Texts:	None
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/2009/D09)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)**

	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
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):	Bachelor of Biomedical Science
Related Majors/Minors/ Specialisations:	Chemistry Environmental Science Environmental Science Marine Biology R05 PE Master of Science (Environmental Science)