610-681 Advanced Spectroscopy

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Total Time Commitment: Not available
Prerequisites:	None
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. 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 Craig Hutton
Subject Overview:	Students enrolling in this subject must choose two of the following three 12-lecture modules: **Advanced Structural Elucidation** This module explores the fundamentals of structure determination as applied to organic and biological molecules, focussing on methods such as NMR and mass spectrometry. The combination of background theory and range of examples will enhance students' ability to acquire and analyse experimental data. **Chemical Applications of Synchrotron Radiation** This module will discuss the principles, instrumentation and applications of synchrotron radiation, particularly in the X-ray region of the electromagnetic spectrum. Examples will be drawn from chemical and biochemical systems, and applications to advanced materials and processes. **Electronic Structure and Spectra** This module will explore the application of symmetry to the interpretation of various spectroscopic techniques (absorption, emission, vibronic structure, CD, MCD), in order to determine the structure of, for example, metal complexes.
Objectives:	The objectives of this subject are to provide students with an increased knowledge and understanding of advanced chemical principles, with emphasis on: · background spectroscopic theory · the use of instrumentation · analysis of experimental spectroscopic data Such knowledge will facilitate insights into the structure and properties of matter and the nature of chemical transformations.
Assessment:	Two 1.5-hour end-of-semester examinations (worth 50% each).
Prescribed 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:	At the completion of this subject, students will gain skills in: • advanced problem-solving and critical thinking skills • an ability to evaluate the professional literature • an understanding of the changing knowledge base • a capacity to apply concepts developed in one area to a different context • the ability to use conceptual models to rationalize experimental observations.
Related Majors/Minors/ Specialisations:	R05 RC Master of Science - Chemistry