640-616 Imaging Nanostructures

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2009.
Time Commitment:	Contact Hours: 36 hours comprising 2 one-hour lectures per week and 1 one-hour tutorial per week. 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. 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.
Subject Overview:	The regime of nanotechnology takes us well down below 100nm. At these dimensions traditional techniques such as standard optical microscopy are simply not adequate to resolve the components or probe the physical, chemical and biological processes that occur. Instead, tools such as atomic force microscopy, high resolution scanning electron microscopy and emerging advanced methods of optical microscopy must be used. The course will provide an introduction to the various methods that can be used to characterise materials at the nanoscale. The principles behind the techniques and the advantages and practical limitations of these methods will be discussed with reference to current problems and applications. Practical sessions will include demonstrations of the use of such techniques and instruments.
Objectives:	The objectives of this subject are to: • increase students' knowledge and understanding of the imaging techniques used in nanotechnology; • provide the theoretical and practical background to permit judicious choice of appropriate imaging technology and analysis; • encourage the development of individual investigative skills, critical thought and the ability to evaluate information and to analyse experimental imaging data.
Assessment:	One assignment totalling 4,000 words due towards the end of semester and contributing 50% to the final mark for the subject, plus one two-hour written examination at the end of the semester contributing 50% to the final mark.
Prescribed Texts:	None.
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:	At the completion of this subject, students should gain: • problem-solving skills including engaging with unfamiliar problems and identifying relevant strategies; • analytical skills including the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of the analysis;

	• the ability to work in a team, through interactions with other students.
Notes:	This subject will not be available in 2009. Students undertaking this subject will be expected to regularly access an internet-enabled computer.
Related Majors/Minors/ Specialisations:	R05 PN Master of Science (Nanotechnology)