

GEOM90038 Advanced Imaging

Credit Points:	12.5						
Level:	9 (Graduate/Postgraduate)						
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.						
Time Commitment:	Contact Hours: 24 hours lectures, 24 hours labs and assignments. Total Time Commitment: 200 hours						
Prerequisites:	Successful completion of the following subject is required: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Subject</th> <th style="width: 20%;">Study Period Commencement:</th> <th style="width: 20%;">Credit Points:</th> </tr> </thead> <tbody> <tr> <td>GEOM30009 Imaging the Environment</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	GEOM30009 Imaging the Environment	Semester 1	12.50
Subject	Study Period Commencement:	Credit Points:					
GEOM30009 Imaging the Environment	Semester 1	12.50					
Corequisites:	N/A						
Recommended Background Knowledge:	None						
Non Allowed Subjects:	None						
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p> </p>						
Coordinator:	Dr Ida Jazayeri						
Contact:	Dr Ida Jazayeri jazayeri@unimelb.edu.au (mailto:jazayeri@unimelb.edu.au)						
Subject Overview:	<p>AIMS</p> <p>To introduce students to advanced and esoteric imaging technologies and the methods for extracting quantitative information from multi-source imagery. This subject builds on the knowledge of subjects such as imaging the environment, by considering multi-source images of the target to provide additional information such as the distance from the target to object from which a three dimensional representation can be constructed. It also considers imaging of targets where illumination is provided by the instrument rather than natural light reflection or radiation from the target. Students who successfully complete this subject may find work in a variety of remote sensing or specialist consultancies or agencies. The techniques learnt may also be applied to other industries such as quality control in manufacturing or recording of archaeological sites.</p> <p>INDICATIVE CONTENT</p> <p>The subject covers the use and characteristics of specialised imaging techniques and instruments including hyper-spectral imagery, synthetic aperture RADAR, LIDAR, geophysical survey, acoustic imaging, photogrammetry, and high resolution satellite imagery, consideration of the uses, inherent errors and limitations of each of these techniques.</p>						

Learning Outcomes:	<p>INTENDED LEARNING OUTCOMES (ILO)</p> <p>Having completed this unit the student is expected to:</p> <ol style="list-style-type: none"> 1 Describe the acquisition and characteristics of specialized image data 2 Identify the appropriate combination of imaging techniques to meet a particular need 3 Apply image processing to solve extract quantitative information from imagery.
Assessment:	<p>One 3 hour written examination at the end of semester (50%). Addresses Intended Learning Outcomes (ILOs) 1 and 2 Five fortnightly written assignments, each of a workload of 10 hours and partly completed in laboratory classes, total worth (40%). Addresses ILOs 1-3 One 1 hour mid-semester class test (10%). Addresses ILO 2. Hurdle requirement: Students must pass the written examination at the end of the semester in order to pass the subject.</p>
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:	<ul style="list-style-type: none"> # Ability to apply knowledge of science and engineering fundamentals # Ability to undertake problem identification, formulation and solutions # Ability to communicate effectively, with the engineering team and with the community at large # Ability to manage information and documentation.
Notes:	<p>LEARNING AND TEACHING METHODS</p> <p>Lectures and guided practical assignments.</p> <p>INDICATIVE KEY LEARNING RESOURCES</p> <p>Online interactive tutorials.</p> <p>CAREERS / INDUSTRY LINKS</p> <p>Practical context and industry links are provided in the problem-based learning exercises.</p>
Related Course(s):	<p>Master of Philosophy - Engineering</p> <p>Ph.D.- Engineering</p>
Related Majors/Minors/Specialisations:	Master of Engineering (Spatial)