451-447 Photogrammetry

Credit Points:	12.50
Level:	4 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Twenty-four hours of lectures and 24 hours of tutorials and practical exercises. Total Time Commitment: Not available
Prerequisites:	451-332 Imaging in the Geosciences and 451-206 Least Squares Estimation and Network Analysis
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	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. 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
Coordinator:	Prof Clive Simpson Fraser
Subject Overview:	Upon completion of this subject students should have a thorough understanding of the principles of modern photogrammetry, both topographic and non-topographic. Topics cover the mathematical foundations of multi-image photogrammetry; bundle adjustment and sensor self-calibration; feature extraction and image matching; digital photogrammetric workstations; orthorectification, automated restitution and DTM extraction in aerial photogrammetry; GPS aerial triangulation; mathematical models, imaging characteristics and mapping products from high-resolution satellite imagery; close-range digital photogrammetry; and industrial and engineering applications of vision metrology.
Assessment:	One 2-hour written examination at the end of semester (50%). One 1-hour mid-term test (20%). Six 4 page bi-weekly assignments (30%).
Prescribed Texts:	None
Recommended Texts:	Information Not Available
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:	# ability to apply knowledge of basic science and engineering fundamentals # ability to communicate effectively, not only with engineers but also with the community at large # in-depth technical competence in at least one engineering discipline

	# ability to undertake problem identification, formulation and solution # ability to utilise a systems approach to design and operational performance # ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member # understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development # capacity for independent critical thought, rational inquiry and self-directed learning # intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity # openness to new ideas and unconventional critiques of received wisdom # profound respect for truth and intellectual integrity, and for the ethics of scholarship # international awareness and openness to the world, based on understanding and appreciation of social and cultural diversity and respect for individual human rights and dignity
Related Course(s):	Bachelor of Geomatic Engineering Bachelor of Geomatic Engineering & Bach of Planning & Design(Prop&Const) Bachelor of Geomatic Engineering and Bachelor of Arts Bachelor of Geomatic Engineering and Bachelor of Information Systems Bachelor of Geomatic Engineering and Bachelor of Science Graduate Certificate in Geographic Information Systems Graduate Diploma in Geographic Information Systems Graduate Diploma in Geomatics Science