

## 451-332 Imaging in the Geosciences

<b>Credit Points:</b>	12.50
<b>Level:</b>	3 (Undergraduate)
<b>Dates &amp; Locations:</b>	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: Twenty-four hours of lectures and 24 hours of practical classes. Total Time Commitment: Not available
<b>Prerequisites:</b>	620-161 Introductory Mathematics
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt;         &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>
<b>Coordinator:</b>	Prof Clive Simpson Fraser
<b>Subject Overview:</b>	<p>Upon completion of this subject students should have an understanding of the techniques and applications of imaging systems in the geosciences, geomatics, and planetary and natural sciences, and an introductory knowledge of photogrammetry.</p> <p>Content includes imaging requirements for topographic mapping, meteorology, planetary mapping, remote sensing, oceanography and the earth sciences; digital imaging systems; data visualisation; applications and case studies; geometry of a metric image, sensor interior orientation, perspective distortion and imaging scale; introduction to rectification and orthorectification; and the concept of parallax, stereo restitution, digital mapping, project planning and film scanners.</p>
<b>Assessment:</b>	One 3-hour written examination at the end of semester (60%), image interpretation component - practical assessment comprising 2 exercises due at the end of week 2 and at the end of the component (5% and 15%), image measurement component - practical assessment comprising 3 exercises (20%).
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	Information Not Available
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<ul style="list-style-type: none"> <li># ability to apply knowledge of basic science and engineering fundamentals</li> <li># ability to communicate effectively, not only with engineers but also with the community at large</li> </ul>

	<ul style="list-style-type: none"> <li># ability to undertake problem identification, formulation and solution</li> <li># ability to utilise a systems approach to design and operational performance</li> <li># 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</li> <li># understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development</li> <li># capacity for independent critical thought, rational inquiry and self-directed learning</li> <li># intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity</li> <li># openness to new ideas and unconventional critiques of received wisdom</li> <li># profound respect for truth and intellectual integrity, and for the ethics of scholarship</li> </ul>
<b>Related Course(s):</b>	<p>           Bachelor of Geomatic Engineering            Bachelor of Geomatic Engineering &amp; Bach of Planning &amp; Design(Prop&amp;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 Diploma in Geomatics Science         </p>