

GEOM20015 Surveying and Mapping

Credit Points:	12.5
Level:	2 (Undergraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 60 hours, comprising of two 1-hour lectures and one three-hour practical per week Total Time Commitment: 170 hours
Prerequisites:	VCE mathematics or equivalent
Corequisites:	None
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>
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Subject Overview:	<p>AIMS</p> <p>This subject will introduce students to the technologies and field procedures used in surveying and mapping. Students will understand the fundamental principles of plane surveying and acquire skills to undertake all the measurements and computations necessary for mapping small areas. There will be several outdoor practical assignments that combine to produce a detail and contour plan of an area of interest. This unit provides the foundation surveying skills needed for the Spatial Systems major. Students who develop proficiency in the practice of this subject will be able to apply this knowledge in the workplace under the supervision of a licensed surveyor.</p> <p>INDICATIVE CONTENT</p> <p>The theory and practice of surveying on a plane, including the associated computations. Levelling, traversing, detail and contour observations with automated instruments, plan preparation and incorporation of field surveys into geographic information systems. An introduction to advanced measurement techniques including 3d laser scanning and GPS.</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 Be competent in acquiring field survey measurements using modern surveying instruments 2 Be able to process survey measurements to produce plans showing features and contours 3 Be able to incorporate these data into geographical information systems

	<p>4 Be cognisant with the requirements for plans of survey according to the needs of a variety of clients</p> <p>5 Take leadership roles within the survey teams</p> <p>6 Understand the processes involved in representing the contiguous real world in a metric abstracted form.</p>
Assessment:	<p>One 2 hour end-of-semester examination (50%). Addresses Intended Learning Outcomes (ILOs) 2, 3, 4 and 6</p> <p>Three group reports (500 words equivalent per report) showing progress through the field survey tasks, 8% each, requiring approximately 25 hours of work per student in total. Addresses ILOs 1, 2 and 5</p> <p>One group report (1500 words equivalent) containing the detail plan of survey, 18%, requiring approximately 20 hours of work per student. Addresses ILOs 2, 4 and 6</p> <p>One individual submission (1000 words equivalent) of a GIS database containing the layered feature data resulting from the field survey 8%, requiring approximately 10 hours of work. Addresses ILOs 3, 6.</p>
Prescribed Texts:	None
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2015/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2015/B-COM) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2015/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2015/B-MUS) <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>On completion of this subject; students should have the:</p> <ul style="list-style-type: none"> # 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 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 # Capacity for independent critical thought, rational inquiry and self-directed learning # Profound respect for truth and intellectual integrity, and for the ethics of scholarship.
Notes:	<p>This subject is available for science credit to students enrolled in the B-SCI Bachelor of Science</p> <p>LEARNING AND TEACHING METHODS</p> <p>This unit takes a Project Based Learning approach where the theory is reinforced through application in field surveying projects.</p> <p>INDICATIVE KEY LEARNING RESOURCES</p> <p>www.ie.unimelb.edu.au/451237 (http://www.ie.unimelb.edu.au/451237)</p> <p>CAREERS / INDUSTRY LINKS</p> <p>Presenters from industry and government contribute to the lecture series in the unit, giving both applied and economic perspectives to the process of surveying and mapping. The survey tasks are undertaken according to the legislative requirements contained in the relevant Victorian Acts of Parliament.</p>
Related Majors/Minors/Specialisations:	<p>Civil (Engineering) Systems major</p> <p>Engineering Systems</p> <p>Environmental Engineering Systems major</p> <p>Environments Discipline subjects</p> <p>Geomatics (Geomatic Engineering) major</p> <p>Master of Engineering (Spatial)</p>

	Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED Spatial Systems
Related Breadth Track(s):	Understanding Location