

GEOM20013 Applications of GIS

Credit Points:	12.5
Level:	2 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 48 hours (Lectures: 2 hours per week; Tutorials: 2 hours per week) Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<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>
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Subject Overview:	<p>AIMS</p> <p>Geographic Information Systems (GIS) are a blend of computer mapping and database technologies used to store, manage, analyse and display geographic data. This subject introduces students to this exciting technology and provides them with the skills and knowledge to solve everyday problems facing our built and natural environments. Students who complete this subject will have developed knowledge that is immediately applicable in the workplace. The subject also lays the foundations for more advanced studies in the field of geomatics and spatial information systems.</p> <p>INDICATIVE CONTENT</p> <p>Application areas of GIS, and related data sets and operations, are presented. In parallel, students train in computer labs the use of GIS for data integration, analysis and mapping, inspired by the applications presented.</p>
Learning Outcomes:	<p>INTENDED LEARNING OUTCOMES (ILO)</p> <p>On completion of this subject the student is expected to:</p> <ol style="list-style-type: none"> 1 Explain the basic principles and procedures associated with GIS 2 Demonstrate practical skills such as understanding data format, data collection, data entry and modification, projection systems, basic spatial and 3D analysis and finally concept of visualization in the use of GIS software 3 Describe how GIS can be applied in a range of situations, such as urban planning, site selection, environmental management, facilities and network management, and many more 4 Explain the particular role that GIS plays in decision making for problem solving purposes 5 Use GIS software for spatial analysis in a range of applications such as emergency management, urban development, land administration.

Assessment:	An individual assignment addressing an application of GIS (requiring 15 hours of work), due week 4 of semester (15%); A group literature review (requiring 15 hours work for each team member), on an application of GIS which will provide the foundation for the final group assignment, due mid-semester (15%); A group major assignment on the application of GIS researched by the group during the literature review (requiring each team member committing 40 hours of work), due end of teaching period (40%) 2-hour examination, held in the end of semester examination period (30%). Hurdle requirement: Students must pass the end of semester examination.
Prescribed Texts:	Lecture notes will be available for purchase from the University bookroom. The students have free access to ESRI ArcGIS via a campus licence. Lectures are recorded (voice and slides).
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/2016/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2016/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/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 the completion of this subject students will have:</p> <ul style="list-style-type: none"> # The ability to apply knowledge of basic science fundamentals # The ability to communicate effectively, not only with other scientists but also with the community at large # The ability to undertake problem identification, formulation and solution # The 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 # An expectation of the need to undertake lifelong learning and the capacity to do so # The capacity for independent critical thought, rational inquiry and self-directed learning # Openness to new ideas and unconventional critiques of received wisdom.
Notes:	<p>LEARNING AND TEACHING METHODS</p> <p>The subject consists of introductory lectures and a number of guest speakers presenting applications of GIS from industry practice. In parallel students are exposed in computer labs to their first encounter with GIS.</p> <p>INDICATIVE KEY LEARNING RESOURCES</p> <p>The students have free access to ESRI ArcGIS via a campus licence. Lectures are recorded (voice and slides).</p> <p>CAREERS / INDUSTRY LINKS</p> <p>A number of industry representatives across a variety of GIS applications present guest lectures during the semester.</p>
Related Majors/Minors/ Specialisations:	<p>Civil (Engineering) Systems major Engineering Systems Environmental Engineering Systems major Environments Discipline subjects Geomatics (Geomatic Engineering) major Landscape Ecosystem Management major Master of Engineering (Spatial) Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED Spatial Systems</p>
Related Breadth Track(s):	Understanding Location