

GEOM90029 Spatial Visualisation on Line

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2013.
Time Commitment:	Contact Hours: Online subject; individual contact with the academic coordinator Total Time Commitment: 144 hours
Prerequisites:	The prerequisites for this subject are: 451610 Foundations of Spatial Information or equivalent subject
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students cannot enrol in and gain credit for this subject and: 451611 Spatial Visualisation
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>
Contact:	Melbourne School of Engineering Ground Floor, Old Engineering (Building 173) Current students: Email: 13MELB@unimelb.edu.au (mailto:13MELB@unimelb.edu.au) Phone: 13MELB (13 6352) +61 3 9035 5511
Subject Overview:	The subject introduces the theory and application of both abstract and realistic spatial visualisation options in two, three and four dimensions. These options range from mapping, especially webmapping, to virtual reality, and other forms of spatial communication. Specific topics include: colour theory; communication theory; spatial and temporal visualisation; environmental visualisation; real-time exploration of virtual worlds and augmented reality. Also included are: technical aspects of webmapping, mobile mapping, computer graphics including image manipulation; three-dimensional modelling and transformations; perspective; hidden surface algorithms; illumination models; texture mapping; ray tracing; animation and the use of game engines. Applications of scientific and environmental visualisation for planning and management in built and natural environments are the topic of student seminar presentations.
Objectives:	On completion of this subject students will have the ability to: <ul style="list-style-type: none"> # Identify and describe the principles and techniques associated with computerised mapping and spatial visualisation # Discuss a range of applications in support of communication and decision making in natural and built environments.
Assessment:	The equivalent of 3000-words of written assignments and reports on practical work equally spread over the semester (45%) An oral presentation (15%) 2-hour end of semester examination (40%)

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:	<p>On completion of this subject students should have developed:</p> <ul style="list-style-type: none"> # Ability to apply knowledge of science and engineering fundamentals # Ability to undertake problem identification, formulation, and solution # Ability to communicate effectively, with the engineering team and with the community at large # Capacity for creativity and innovation # Understanding of professional and ethical responsibilities, and commitment to them
Notes:	<p>Note: Students must have access to Windows-based Personal Computer (Pentium 4 or equivalent, 512 M RAM, Graphics card) and Internet facilities.</p> <p>The subject is available online, covering the same content as 451-611 Spatial Visualisation. Feedback mechanisms are:</p> <ul style="list-style-type: none"> # Marking and comments on assignment reports # Offline contact with the academic coordinator, via LMS or email # Offline contact with demonstrators for 451-611
Related Course(s):	Postgraduate Certificate in Engineering