451-236 Spatial Visualisation

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: 2 hour lecture, 2 hour practical per week. Total Time Commitment: Not available
Prerequisites:	451-105 Introduction to GIS and Remote Sensing or an equivalent subject.
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 Ian Bishop
Subject Overview:	The subject introduces the theory and application of both abstract and realistic visualisation options in two, three and four dimensions. Specific topics include colour theory, communication theory; cartography; map animation; hypermapping, environmental visualisation, and augmented reality. Also included are technical aspects of computer graphics including image manipulation, three-dimensional modelling and transformations, perspective, hidden surface algorithms, illumination models, texture mapping, ray tracing and animation. Applications of scientific and environmental visualisation for planning and management in built and natural environments are reviewed.
Assessment:	One 3-hour written examination at the end of semester (50%) Approximately 5 assignments, 2 weeks apart 600 words each. (50%).
Prescribed Texts:	None
Recommended Texts:	Information Not Available
Breadth Options:	This subject is a level 2 or level 3 subject and is not available to new generation degree students as a breadth option in 2008. This subject or an equivalent will be available as breadth in the future. Breadth subjects are currently being developed and these existing subject details can be used as guide to the type of options that might be available. 2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# ability to apply computer techniques for communication of complex information # in-depth technical competence in at least one engineering discipline

	# ability to undertake problem identification, formulation and solution
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 Diploma in Geographic Information Systems