451-665 Spatial Visualisation on line

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Summer Term, - Taught on campus. Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Estimated total time commitment (including non-contact time): 144 hours. Total Time Commitment: Not available
Prerequisites:	451-610 Fundamentals of GIS 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 D. 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. Seminars will cover research uses of visualisation and also ethical issues in application.
Assessment:	Two hours of written examination (40% of subject marks), the equivalent of 3,000 words of written assignments, short tests and reports on practical work during the semester (60% of subject marks)
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:	Upon completion of this subject students should have developed: # an understanding of the principles and techniques associated with computerised mapping and visualisation. # an ability to apply computer techniques for communication of complex information # an in-depth technical competence in at least one engineering discipline # an ability to undertake problem identification, formulation and solution

Notes:	Note: Students must have access to Windows-based Personal Computer (Pentium 4 or equivalent, 512 M RAM, Graphics card) and Internet facilities.
Related Course(s):	Graduate Certificate in Geographic Information Systems Graduate Diploma in Geographic Information Systems Master of Applied Science (Geographic Information Systems) Master of Geographic Information Technology