421-207 Introduction to Design

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: Forty-eight hours of lectures and tutorials Total Time Commitment: Not available
Prerequisites:	421-107 Environmental Engineering Introduction or 421-101 Civil Engineering Introduction
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:	Emad Gad
Subject Overview:	The subject content is as follows: techniques for problem definition; nature of infrastructure systems and their sub-systems; conceptual modelling of systems; conceptual design and creative thinking; planning methodology; function; and performance, failure and reliability, communication by reports and plans. Topics include: infrastructure and natural systems; economy and life cycles costs; planning and designing; design objectives: function, aesthetics, costs, serviceability, safety; analysis and synthesis; conceptual design; uncertainties: variably, inaccuracy, mistakes; standardisation of materials, load calculations and procedures; government and other regulation; philosophies of design: allowable stress design, limit states design; and detailing and documentation: computations and iterative design, drawing Â-conventions.
Assessment:	One 3-hour end of semester exam (60%). Three in-class conceptual design group reports over the first 8 weeks of smid-semesteremester (10%). Three 600 word reports spread over the semester (15%) and one 2000 (per student) word group end-of-semester report (15%).
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:	# ability to communicate effectively with engineers and the community as large # ability to undertake problem identification, formulation and solution # ability to utilise a systems approach to design and operational performance # 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 leader

	# understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development # understanding of the principles of sustainable design and development # capacity for independent critical thought, rational inquiry and self-directed learning # profound respect for truth and intellectual integrity, and for the ethics of scholarship
Related Course(s):	Bachelor of Engineering (Civil Engineering) Bachelor of Engineering (Civil) and Bachelor of Arts Bachelor of Engineering (Civil) and Bachelor of Commerce Bachelor of Engineering (Civil) and Bachelor of Laws Bachelor of Engineering (Civil) and Bachelor of Science Bachelor of Engineering (EngineeringManagement) Civil