421-307 Structural Engineering 1

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lectures, eighteen hours of tutorial design sessions. Total Time Commitment: Not available
Prerequisites:	421-208 Mechanics of Solids or equivalent
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:	Assoc Prof Nelson Lam
Contact:	Assoc.Professor Nelson Lam Dept. of Civil and Environmental Engineering Tel: +61 3 83447554 Email: ntkl@unimelb.edu.au
Subject Overview:	Topics covered include elements of structural behaviour; basic modes of structural action; analysis of statically determinate systems and stability using a variety of approaches; flexural strength theory of structural concrete members with passive and/or active reinforcement, shear, deflection, anchorage and stress development; strength theory of reinforced concrete columns, including the use of interaction diagrams and loading lines to deal with slenderness effects; and concrete design project.
Objectives:	At the conclusion of this subject students should be able to analyse for internal actions and deformations in simple truss and frame structure members arising from a variety of loading states. In addition, students will be able to carry out designs of reinforced concrete frames consisting of beams and columns.
Assessment:	One 3-hour examination (80%), and practical work consisting of one assignment of up to 750 words, and a design project of up to 3000 words, to be held throughout the semester (20%).
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 apply knowledge of basic science and engineering fundamentals

	# in-depth technical competence in at least one engineering discipline # ability to utilise a systems approach to design and operational performance # ability to undertake problem identification, formulation and solution
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