421-317 Structural Engineering 2

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lectures, fifteen hours of practice classes and four hours of laboratory work. Total Time Commitment: Not available
Prerequisites:	421-307 Structural Engineering 1
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 Nicholas Haritos
Contact:	Assoc Prof Nicholas Haritos Department of Civil and Environmental Engineering Phone:+61 3 8344 6829 Email: nharitos@unimelb.edu.au
Subject Overview:	Topics covered include an introduction to computer analysis of determinate and indeterminate truss and frame structures using matrix methods; introduction to the finite element technique; modelling of the basic modes of structural action; and behaviour (first order and second order) of ties, columns, beams, beam-columns, simple frames, bolts, welds and fasteners groups including yielding, fracture, buckling and warping.
Objectives:	At the conclusion of this subject students should be able to analyse for internal actions and deformations in both determinate and indeterminate truss and frame structure members arising from a variety of loading states. On completion of the design component students will be able to apply techniques previously introduced to the design of members and connections for a variety of steel structures.
Assessment:	A 3-hour end-of-semester examination (80%), and practical work consisting of two computer laboratory assignments, each up to 750 words, and a design project 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 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 member # understanding of the principles of sustainable design and development # expectation of the need to undertake lifelong learning, capacity to do so # capacity for independent critical thought, rational inquiry and self-directed learning
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