CVEN90024 Design of High Rise Structures

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 28 hours of lectures, 20 hours of workshops per semester. Total 48 hours Total Time Commitment: 120 hours for the semester
Prerequisites:	Admission to Master of Engineering Structures OR

Subject	Study Period Commencement:	Credit Points:
CVEN30009 Structural Theory and Design	Semester 2	12.50

OR

Subject	Study Period Commencement:	Credit Points:
421-317 Structural Engineering 2	Not offered 2010	

Corequisites:	None
Recommended Background Knowledge:	421-503 Structural Theory and Design 2 commences in 2011
Non Allowed Subjects:	421-496 High Rise Structures
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
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Subject Overview:	This subject introduces students to the special requirements necessary for the successful design of high rise buildings. Topics covered include: structural floor, framing and foundation systems, environmental actions from thermal and wind including wind tunnel testing; analysis techniques including computer-aided analysis, vertical movements and second order effects, facade design, construction methods, and a review of case study buildings.
Objectives:	On successful completion, students should be able to # Describe the multi-disciplinary nature of designing a tall building and the role of a structural engineer in the design of tall buildings # Describe the design criteria and loading conditions for buildings

	# Develop conceptual designs of floors using different floor systems # Develop conceptual designs of lateral load resisting systems for buildings # Calculate dynamic wind loads on tall buildings using the dynamic response factor approach # Interpret wind tunnel test results to obtain equivalent wind loads # Calculate the serviceability acceleration levels in tall buildings responding to wind loading # Develop approximate models for analysing structural systems in buildings # Develop computer models for analysing structural systems in buildings # Develop conceptual designs of foundation systems for different buildings and soil types # Identify different facade systems commonly used in building structures # Identify and analyse different structural systems using case study buildings
Assessment:	A three-hour end of semester examination (70%)Two 1000 word assignments one due in week 6 of the semester the other towards the end of the semester (15% each)
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 science and engineering fundamentals # Ability to undertake problem identification, formulation, and solution # Ability to utilise a systems approach to complex problems and to design and operational performance # Proficiency in engineering design # Ability to conduct an engineering project # Ability to communicate effectively, with the engineering team and with the community at large # Ability to manage information and documentation # Capacity for creativity and innovation # Understanding of professional and ethical responsibilities, and commitment to them # Ability to function effectively as an individual and in multidisciplinary and multicultural teams, as a team leader or manager as well as an effective team member # Capacity for lifelong learning and professional development
Notes:	This subject replaces 421-496 High Rise Structures
Related Course(s):	Graduate Certificate in Engineering (Environmental Engineering) Master of Engineering Structures Master of Engineering Structures Master of Water Resource Management Master of Water Resource Management Postgraduate Certificate in Engineering