CVEN90035 Design in Steel & Other Materials

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 2 hours lecture/week. 24 hours workshop/semester. Total 48 hours. Total Time Commitment: 120 hours for the semester
Prerequisites:	# **421-317 Structural Engineering 2 (/view/2009/421-317)** or # 421-503 Structural Theory and Design 2 available from 2011 or # Admission to Master of Engineering Structures
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Credit will not be given for the following subject if enrolled in this subject

Subject	Study Period Commencement:	Credit Points:
CVEN40007 Steel & Concrete Design	Semester 2	12.50

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:	The major objective of this unit is to develop an understanding of the procedures and processes involved in the design of structures made of structural steel, cold-formed steel, composites, timber or masonry, and be able to produce effective and economical design solutions through correct integration of these materials.
Objectives:	At the end of this subject students should be able to # Estimate design parameters for conceptual design including gravity, operational and environmental loads # Analyse structures using approximate methods and validate detailed computer analyses for member actions # Design steel members and their connections using relevant design standards # Describe factors affecting brittle fracture and fatigue of structural steel components

	# Recognise behaviour of cold formed steel and design for local buckling # Design simply-supported composite beams and design # Identify basic properties of timber and factors affecting its behaviour # Design timber elements and connections to resist tension, bending and compression # Describe strength properties of masonry construction and parameters affecting compressive, tensile, bending and shear strength # Design masonry walls with different boundary conditions to resist compressive forces, shear forces and out-of-plane bending # Apply design knowledge and skills in a simulated design office during Design Week
Assessment:	Three-hour end of semester examination (60%)A 2000 word group report due towards the end of semester (10%)One 6000 word group design report (4 students per group) to be performed in an intensive mode (Steel Design Week - Week 4 of semester) (30%)
Prescribed Texts:	Handbook HB48 Structures Design Handbook (Pham, L., Boxhall, P., and Mansell, D.) Standards Australia 1999Handbook HB2.2 Australian Standards for Civil Engineering Students – Part 2: Structural Design Standards Australia 2003Steel Designers Handbook (Gorenc, B., Tinyou,R., and Syam, A.) UNSW Press 2005
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 function effectively as an individual and in multidisciplinary and multicultural teams, as a team leader or manager as well as an effective team member
Related Course(s):	Graduate Certificate in Engineering (Environmental Engineering) Master of Engineering Structures Master of Engineering Structures Postgraduate Certificate in Engineering