Master of Engineering (Structural)

Year and Campus:	2016
Coordinator:	Assoc Prof Nelson LamEmail: ntkl@unimelb.edu.au
Contact:	**Melbourne School of Engineering** Current students: # General information: **https://ask.unimelb.edu.au (https://ask.unimelb.edu.au/)** # **Contact Stop 1 (http://students.unimelb.edu.au/stop1)** Future students: # Further information: **Degree Structure (http://www.eng.unimelb.edu.au/study/degrees/master-engineering-structural/overview)** # Email: **Enquiry Form**
Overview:	Structural engineers apply mathematical and scientific principles to the design, development and evaluation of materials and systems used in building load-bearing structures like roads, buildings, rail lines, dams and offshore platforms. It is the objective of this course that graduates have acquired a sound fundamental understanding of the scientific principles underlying a number of sub-disciplines that are associated with structural engineering. Great emphasis is also placed on the development of generic skills with management, communication, problem-solving and design and innovation in structural engineering. Students in this specialisation learn from high quality researchers recognised internationally for their expertise in high-rise structures, and wind, waves, earthquake, impact and blast resistant technologies. Design seminars, field work and workshops provide students with opportunities to work with industry professionals in their final year. Career opportunities exist in a variety of roles related to the design of structures, their longevity, and their ability to withstand extremes such as earthquake, high winds, blast or fire. The Master of Engineering (Structural) has full accreditation with Engineers Australia and EUR-ACE®.
Learning Outcomes:	To produce graduates who have acquired the educational and professional standards of Engineers Australia, with which the course is accredited, are both skilled in structural engineering principles and have the ability to apply them to complex, open-ended engineering tasks and problems.
Structure & Available Subjects:	The Master of Engineering (Structural) consists of 300 points of study - 225 points core (compulsory), 12.5 points selective plus 62.5 points elective subjects as listed below. Advanced standing will be awarded for equivalent subjects taken in prior study to applicants on the following basis: # A maximum of 100 points for applicants with a 4 year Bachelor of Engineering or equivalent # A maximum of 100 points for applicants with a 3 year undergraduate degree. Students entering with a three year bachelor degree must complete at least 200 points of study within the Masters of Engineering. In cases where applicants have completed the equivalent of more than 100 points of core masters subjects, discipline specific electives must be taken to fulfil the 200 minimum masters study requirement Note: applicants from the University of Melbourne with: # An appropriate “Engineering System” major will receive 100 points of advanced standing. Applicants who have completed more than 100 points of core subjects in their undergraduate degree will obtain exemption for the cores taken but will need to replace the points in excess of 100 points with elective subjects # Engineering breadth sequences (including those in the Bachelor of Commerce) will receive advanced standing to a maximum of 100 points
Subject Options:	Total 300 points Students must complete all 300 points of subjects, including all core subjects, or have advanced standing or exemption Students must complete the following in the Master of Engineering (Structural): # 225 credit points of core subjects

12.5 credit points of selective subjects
62.5 credit points of structural engineering electives according to the lists below

The order of subjects below is one way of progressing through the course - students who meet subject requisites may tailor their individual study plan to take into account advanced standing and their study load. Students plan their study online, however Melbourne School of Engineering course advisors are available to assist students with individual study plans

Suggested first 100 points:

100 points Core as listed below

Please note: In 2013 ENGR30001 Fluid Mechanics & Thermodynamics was replaced with ENGR30002 Fluid Mechanics. Students who have completed ENGR30001 are not required to complete ENGR30002.

Students who completed CVEN30008 Risk Analysis or equivalent. Please consult with a course advisor to discuss your course structure.

Subject	Study Period Commencement:	Credit Points:
CVEN30008 Engineering Risk Analysis	Semester 1	12.50
ENGR20004 Engineering Mechanics	Summer Term, Semester 1, Semester 2	12.50
ENGR30002 Fluid Mechanics	Semester 1, Semester 2	12.50
ENGR90021 Engineering Practice and Communication	Semester 1, Semester 2	12.50
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50
CVEN30009 Structural Theory and Design	Semester 2	12.50
ENEN20002 Earth Processes for Engineering	Semester 2	12.50
ENGR20003 Engineering Materials	Semester 2	12.50

Suggested second 100 points:

75 points Core
25 points Structural Engineering electives from the list below

Core (75 points)

Subject	Study Period Commencement:	Credit Points:
CVEN90043 Sustainable Infrastructure Engineering	Semester 1	12.50
CVEN90044 Engineering Site Characterisation	Semester 1	12.50
CVEN90049 Structural Theory and Design 2	Semester 1	12.50
CVEN90045 Engineering Project Implementation	Semester 2	12.50
CVEN90035 Structural Theory and Design 3	Semester 2	12.50
CVEN30010 Systems Modelling and Design	Semester 2	12.50

Suggested third 100 points:

25 points Core
12.5 points Structural Engineering Selectives
25 points from the Research Component (core) listed below
37.5 points from the Structural Engineering Electives listed below

Core (25 points)

Subject	Study Period Commencement:	Credit Points:
CVEN90050 Geotechnical Engineering	Semester 1	12.50
CVEN90058 Construction Engineering	Semester 2	12.50

Structural Engineering Selectives: 12.5 points. Students must choose **one** of the subjects below

Subject	Study Period Commencement:	Credit Points:
CVEN90059 Integrated Design - Infrastructure	Semester 1	12.50
CVEN90060 Integrated Design - Civil	Semester 2	12.50

Research Component (25 points)

Students must choose only one of the subjects listed below:

Note: CVEN90022 IE Research Project 1 is of year-long duration, students may commence in either Semester 1 or Semester 2 and continue in the consecutive semester. CVEN90047 IE Research Project 2 is completed over one semester only and is the preferred way of completing the project

Subject	Study Period Commencement:	Credit Points:
CVEN90022 IE Research Project 1	Semester 1, Semester 2	12.50
CVEN90047 IE Research Project 2	Semester 1, Semester 2	25

Structural Engineering Electives

Total 62.5 points

Students are strongly advised to include CVEN90016 Concrete Design and Technology and ENEN90014 Sustainable Buildings

Students may also choose one Infrastructure Engineering elective subject not on the list below.

Subject	Study Period Commencement:	Credit Points:
CVEN90017 Earthquake Resistant Design of Buildings	Semester 1	12.50
CVEN90024 High Rise Structures	Semester 1	12.50
CVEN90026 Extreme Loading of Structures	Semester 1	12.50
CVEN90016 Concrete Design and Technology	Semester 2	12.50
CVEN90018 Structural Dynamics and Modelling	Semester 2	12.50
CVEN90027 Geotechnical Applications	Semester 2	12.50
CVEN90051 Civil Hydraulics	Semester 2	12.50
CVEN90062 Building Information Modeling	Semester 2	12.5
ENEN90014 Sustainable Buildings	September	12.50
ENGR90033 Internship	January, Semester 1, Semester 2	25
CVEN90063 Transport System Modelling	Not offered 2016	12.5

Links to further information:	http://www.eng.unimelb.edu.au/Postgrad/MEng/me_structural.html

Related Course(s):	Master of Engineering