

Master of Engineering (Civil)

Year and Campus:	2016
Coordinator:	Assoc Prof Nelson Lam Email: ntkl@unimelb.edu.au
Contact:	<p>Melbourne School of Engineering</p> <p>Current students:</p> <ul style="list-style-type: none"> # General information: https://ask.unimelb.edu.au (https://ask.unimelb.edu.au/) # Contact Stop 1 (http://students.unimelb.edu.au/stop1) <p>Future students:</p> <ul style="list-style-type: none"> # Further information: Degree Overview (http://www.eng.unimelb.edu.au/study/degrees/master-engineering-civil/overview) # Email: Enquiry Form
Overview:	<p>Civil engineers design and create many different kinds of infrastructure to support our society. This specialisation offers considerable scope. 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 including sustainability, environmental processes, structural engineering, geo-technical and hydraulic engineering, transport, and project management. Great emphasis is also placed on the development of generic skills with management, communication, problem-solving and design and innovation in civil engineering. Interaction with industry professionals is available through guest lectures, field and project work. Career opportunities abound in government, construction, property, infrastructure, consulting, mining, land, water, and waste. The Master of Engineering (Civil) has full accreditation with Engineers Australia and EUR-ACE®.</p>
Learning Outcomes:	<p>On the successful completion of the Master of Engineering (Civil) students should have:</p> <ol style="list-style-type: none"> a) Gained advanced knowledge of the principles of civil engineering underpinning the provision of infrastructure b) Had the opportunity to develop research principles and methods in the field of civil engineering c) Cognitive skills to demonstrate mastery of theoretical knowledge and to reflect critically on theory and professional practice of civil engineering d) Cognitive, technical and creative skills to investigate, analyse and synthesise complex information, problems, concepts and theories and to apply established theories to different bodies of knowledge of civil engineering e) Communication and technical research skills to justify and interpret theoretical propositions, methodologies, conclusions, to professional engineering and non-engineering audiences f) Technical and communication skills to design, evaluate, implement, analyse, theorise about developments that contribute to professional practice or scholarship in the field of civil engineering <p>Graduates of Master of Engineering (Civil) will demonstrate the application of knowledge & skills in the fields of infrastructure engineering with specific opportunity to study some sub-disciplines (structural, geotechnical, water) of civil engineering in greater depth:</p> <ol style="list-style-type: none"> g) With creativity and initiative to new situations in professional practice and/or for further learning h) With high level personal autonomy and accountability i) To plan and execute a substantial piece of scholarship
Structure & Available Subjects:	<p>The Master of Engineering (Civil) consists of 300 points of study - 237.5 points core, 12.5 points selective and 50 points elective subjects as detailed below</p> <p>Advanced standing will be awarded for equivalent subjects taken in prior study to applicants on the following basis:</p> <ul style="list-style-type: none"> # 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 fulfill 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 - consisting of 237.5 points core (compulsory), 12.5 points selective and 50 points elective subjects from the lists below. Students must complete all 300 points of subjects, including all core subjects, or have advanced standing or exemption.

The core and elective subjects are those listed 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 on-line, however Melbourne School of Engineering course advisors are available to assist students with individual study plans.

Suggested first 100 points:

- # 100 points Core

Core (Total 100 points)

Subject	Study Period Commencement:	Credit Points:
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
ENEN20002 Earth Processes for Engineering	Semester 2	12.50
ENGR20003 Engineering Materials	Semester 2	12.50
CVEN30009 Structural Theory and Design	Semester 2	12.50
CVEN30010 Systems Modelling and Design	Semester 2	12.50

Suggested second 100 points:

- # 87.5 points Core
- # 12.5 points Civil Engineering Elective from the list below

Core (Total 87.5 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
CVEN90050 Geotechnical Engineering	Semester 1	12.50
CVEN90045 Engineering Project Implementation	Semester 2	12.50
CVEN90048 Transport Systems	Semester 2	12.50

CVEN90051 Civil Hydraulics	Semester 2	12.50
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Suggested third 100 points:

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

Core (Total 25 points)

Subject	Study Period Commencement:	Credit Points:
CVEN30008 Engineering Risk Analysis	Semester 1	12.50
CVEN90058 Construction Engineering	Semester 2	12.50

Civil Engineering selectives (Total 12.5 points)

Students must choose **one** of the subjects listed 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 (Total 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

Civil Engineering Electives

Students may also choose one Infrastructure Engineering elective subject not on the list below (Total 50 points)

Subject	Study Period Commencement:	Credit Points:
CVEN90016 Concrete Design and Technology	Semester 2	12.50
CVEN90017 Earthquake Resistant Design of Buildings	Semester 1	12.50
CVEN90018 Structural Dynamics and Modelling	Semester 2	12.50
CVEN90024 High Rise Structures	Semester 1	12.50
CVEN90026 Extreme Loading of Structures	Semester 1	12.50
CVEN90027 Geotechnical Applications	Semester 2	12.50
CVEN90019 Sustainable Water Resources Systems	Semester 2	12.50
CVEN90035 Structural Theory and Design 3	Semester 2	12.50

	CVEN90061 Freight Systems	Semester 1	12.5
	CVEN90062 Building Information Modeling	Semester 2	12.5
	CVEN90063 Transport System Modelling	Not offered 2016	12.5
	ENEN90005 Environmental Management ISO 14000	Semester 2	12.50
	ENEN90006 Solid Wastes to Sustainable Resources	Semester 1	12.50
	ENEN90011 Energy Efficiency Technology	Semester 2	12.50
	ENEN90014 Sustainable Buildings	September	12.50
	ENEN90027 Energy for Sustainable Development	Semester 1	12.50
	ENEN90029 Water and Waste Water Management	Semester 1	12.50
	ENEN90030 Groundwater Hydrology	Semester 2	12.50
	ENEN90033 Solar Energy	Semester 1	12.50
	ENEN90034 Environmental Applied Hydrology	Semester 1	12.50
	ENGM90007 Project Management Practices	Semester 1	12.50
	ENGM90006 Engineering Contracts and Procurement	Semester 2	12.50
	ENGR90026 Engineering Entrepreneurship	Semester 2	12.50
	GEOM90033 Satellite Positioning Systems	Semester 2	12.50
	EVSC90025 Water Sensitive Urban Design	February	12.5
	ENGR90033 Internship	January, Semester 1, Semester 2	25
	ENEN90037 International River Basin Management	June	12.5
Links to further information:	http://www.eng.unimelb.edu.au/study/degrees/master-engineering-civil/overview		
Notes:	# ENGR30002 Fluid Mechanics replaced ENGR30001 Fluid Mechanics & Thermodynamics in 2013. Students who have completed ENGR30001 are not required to undertake ENGR30002; credit cannot be obtained for both subjects.		
Related Course(s):	Master of Engineering		