CVEN90022 IE Research Project 1

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2014. Students undertaking this subject must enrol into CVEN90022 in two consecutive semesters in order to successfully complete the subject. This subject is co-taught with CVEN90056 and CVEN90047
Time Commitment:	Contact Hours: 22 (10 hours in workshops, and 12 hours progress meetings/feedback by academic supervisors) Total Time Commitment: 200 hours per semester
Prerequisites:	This is a Capstone subject and may only be taken in the final three semesters of study
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	When undertaking this subject students cannot gain credit for the following subjects:

Subject	Study Period Commencement:	Credit Points:
CVEN90047 IE Research Project 2	Semester 1, Semester 2	25
CVEN90020 Research Topic	Not offered 2014	12.50
CVEN90056 IE Research Project 3	Semester 1, 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 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
Contact:	Associate Professor Graham Moore **grahamam@unimelb.edu.au (mailto:grahamam@unimelb.edu.au)** Dr Yongping Wei **ywei@unimelb.edu.au (mailto:ywei@unimelb.edu.au)**
Subject Overview:	**AIMS** This subject provides the capstone experience for students in Infrastructure Engineering. Students will combine their expertise in interdisciplinary groups or as individuals to address real-world problems, typically in contact with industry. Project topics will be advertised well in advance of commencement of the subject so that students can make an informed choice of topic and enrol early. Students must register their topic, group and supervisor before the subject commences. Students with an average score of H1 in the previous 100 points of study and an interest in a PhD have the opportunity to undertake an individual research project. Note: CVEN90022 IE Research Project 1 is of year-long duration, students may commence in either Semester 1 or Semester 2 and continue their enrolment in the consecutive semester. Students wishing to undertake the project component through an Industry internship during the university breaks must have completed the Research Training component (first five weeks of first semester), i.e. students undertaking an internship during the Winter break must commence CVEN90022 in Semester 1, similarly students undertaking an internship during the Summer break must commence CVEN90022 in Semester 2.

	INDICATIVE CONTENT The first five-weeks address research training and comprise weekly structured two-hour lectures with group homework on topics such as project development, literature review, methodology development, presentations and scientific writing. Students will practise this output through their project topics with supervisors providing feedback on the results. Students then continue the project within their groups and with regular progress meetings with their supervisor for the remainder of the year. The project culminates with students presenting their project and findings on a poster at a student expo and also in written form in the style of a conference paper. This subject has been integrated with the Skills Towards Employment Program (STEP) and contains activities that can assist in the completion of the Engineering Practice Hurdle (EPH).
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)** Having completed this subject the student is expected to: 1 Search, analyse and document engineering science and other literature in order to determine the need for further research in a chosen area 2 Synthesize an hypothesis to be tested 3 Devise a methodology of investigation to test the hypothesis 4 Collect and analyse a range of data (qualitative and/or quantitative) and/or undertake computer modelling and simulation to implement the methodology 5 Write project reports that follow good engineering science practice 6 Present a poster of the findings of an investigation
Assessment:	This assessment statement is written for the entirety of the project duration. Students enrol in the subject in two consecutive semesters. The total assessment described is spread over both semesters. At the end of the first semester of enrolment, students who make satisfactory progress will receive a mark of CNT (Continuing) that will be replaced with a grade upon completion of the second semester of study. Students who do not achieve satisfactory progress in the first semester, because they have not met the hurdle requirements, will have a failing grade awarded at the conclusion of the first semester of study, and consequently will have to recommence their enrolment. By mid-project each group must submit an 8 page (approx. 3000 words) 'project proposal' report, outlining the context, literature review, methodology and method for their project. Passing is a hurdle requirement (20%) The project culminates in a poster (500 words) and oral presentation (1000 words) (poster 10%, presentation 10%) and a 15 page (approximately 5000 words) final group report in the style of a conference paper (50%). The group marks of each component will be broken down into individual marks by a peer assessment and evaluation of group project records. An Individual journal containing reflections on the research process and progress, and the development of graduate attributes presented in 12 individual journal entries totalling approximately 2000 words over the project period (10%). Hurdle Requirements: The following must be satisfied in order to pass the subject: Students must register for a project topic prior to day 1 of the first semester of study Weekly attendance at a minimum of 70% of the Departmental research seminars (or equivalent) in the project period, and completion of a critique form for each seminar will be evidence of attendance which will be marked Pass/Fail. A factual record of project progress including items such as meeting minutes, key decisions and resources used must be maintained on a project blog. For group projects the relative contributions of each group member to the overall project should be discernible from this record. A Pass mark for the mid-project report
Prescribed Texts:	None
Recommended Texts:	David Evans, Paul Gruba and Justin Zobel (2011) How to write a better thesis. Melbourne University Press. Carlton, Vic.
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:	# Discernment of knowledge development and research directions within the engineering discipline # Ability to undertake problem identification, formulation and solution # 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
Notes:	**LEARNING AND TEACHING METHODS** # Lectures and tutorials on research techniques # Fortnightly meetings with mentors and other students to discuss progress and problems # Independent research on a project, and communication of the results of that research **INDICATIVE KEY LEARNING RESOURCES** David Evans, Paul Gruba and Justin Zobel (2011) How to write a better thesis. Melbourne University Press. Carlton, Vic. **CAREERS / INDUSTRY LINKS** Some topics available for investigation are sponsored and supervised by industry partners. For students intending to develop a career in research, this subject represents a key subject and opportunity to demonstrate their talents.
Related Course(s):	Master of Engineering Management Master of Engineering Management Master of Engineering Project Management Master of Engineering Project Management Master of Engineering Structures Master of Engineering Structures Master of Environmental Engineering Master of Environmental Engineering
Related Majors/Minors/ Specialisations:	Master of Engineering (Civil with Business) Master of Engineering (Civil) Master of Engineering (Environmental) Master of Engineering (Geomatics) Master of Engineering (Structural)