

## CVEN90056 IE Research Project 3

<b>Credit Points:</b>	12.50												
<b>Level:</b>	9 (Graduate/Postgraduate)												
<b>Dates &amp; Locations:</b>	This subject is not offered in 2014.												
<b>Time Commitment:</b>	Contact Hours: 22 hours (10 hours in workshops, and 12 hours progress meetings/feedback by academic supervisors) Total Time Commitment: 200 hours												
<b>Prerequisites:</b>	<p>This subject, as a capstone of the degree, can only be taken in the last semester of study</p> <p>Only students with an average score of H1 in the previous 100 points of study (Bachelor of Engineering) or in the previous 50 points of study (Master of Engineering Structures) are allowed to undertake this subject</p> <p>Students also need approval of the project supervisor (consultant academic) to be allowed to undertake this subject</p>												
<b>Corequisites:</b>	None												
<b>Recommended Background Knowledge:</b>	None												
<b>Non Allowed Subjects:</b>	<p>When undertaking this subject students cannot gain credit for the following subjects:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CVEN90022 IE Research Project 1</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>CVEN90047 IE Research Project 2</td> <td>Semester 1, Semester 2</td> <td>25</td> </tr> <tr> <td>CVEN90020 Research Topic</td> <td>Not offered 2014</td> <td>12.50</td> </tr> </tbody> </table> <p><b>Note:</b> CVEN90020 Research Topic is discontinued</p>	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	CVEN90020 Research Topic	Not offered 2014	12.50
Subject	Study Period Commencement:	Credit Points:											
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CVEN90047 IE Research Project 2	Semester 1, Semester 2	25											
CVEN90020 Research Topic	Not offered 2014	12.50											
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt; &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>												
<b>Contact:</b>	<p>Semester One: Associate Professor Graham Moore  <a href="mailto:grahamam@unimelb.edu.au">grahamam@unimelb.edu.au</a> (mailto:grahamam@unimelb.edu.au)</p> <p>Semester Two: Dr Biju George  <a href="mailto:biju@unimelb.edu.au">biju@unimelb.edu.au</a> (mailto:biju@unimelb.edu.au)</p>												
<b>Subject Overview:</b>	<p><b>AIMS</b></p> <p>This subject provides a capstone experience for students interested in research in Infrastructure Engineering. In groups students will combine expertise to address real-world problems in a research project, potentially in contact with industry</p> <p>Students will choose their topics before day 1 of semester. The first five weeks into the semester are structured by two-hour impulse workshops on research training, with group homework, on topics such as project development, literature review, methodology development, presentations and scientific writing. Students will practise this input on the topics of their project, and will receive feedback on their results</p>												

	<p>Students then continue with their projects in their groups and with regular progress meetings. At the end they will present their project and finding on a poster and in a written report</p> <p><b>INDICATIVE CONTENT</b></p> <p>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.</p> <p>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.</p>
<b>Learning Outcomes:</b>	<p><b>INTENDED LEARNING OUTCOMES (ILO)</b></p> <p>Having completed this subject the student is expected to:</p> <ol style="list-style-type: none"> <li>1 Search, analyse and document engineering science and other literature in order to determine the need for further research in a chosen area</li> <li>2 Devise a methodology of investigation to improve knowledge or understanding of a chosen topic</li> <li>3 Collect and analyse a range of data (both qualitative and quantitative) and/or undertake model simulation to improve understanding of a chosen topic</li> <li>4 Write a report that follows good engineering science practice</li> <li>5 Present a poster and oral presentation on the investigation to an audience of peers</li> </ol>
<b>Assessment:</b>	<p>By mid-project each group must submit a 7 page (approx. 2000 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 (500 words) (poster 10%, presentation 10%) and a 12 page (approximately 3000 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 Individual journal containing reflections on the research process and progress, and the development of graduate attributes presented in 6 individual journal entries totalling approximately 600 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</p>
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	David Evans, Paul Gruba and Justin Zobel (2011) How to write a better thesis. Melbourne University Press. Carlton, Vic.
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<ul style="list-style-type: none"> <li># Discernment of knowledge development and research directions within the engineering discipline</li> <li># Ability to undertake problem identification, formulation and solution</li> <li># Ability to communicate effectively, with the engineering team and with the community at large</li> <li># Ability to manage information and documentation</li> <li># Capacity for creativity and innovation</li> <li># Understanding of professional and ethical responsibilities, and commitment to them</li> </ul>
<b>Notes:</b>	<p><b>LEARNING AND TEACHING METHODS</b></p> <ul style="list-style-type: none"> <li># Lectures and tutorials on research techniques</li> </ul>

	<p># Fortnightly meetings with mentors and other students to discuss progress and problems</p> <p># Independent research on a project, and communication of the results of that research</p> <p><b>INDICATIVE KEY LEARNING RESOURCES</b>  David Evans, Paul Gruba and Justin Zobel (2011) How to write a better thesis. Melbourne University Press. Carlton, Vic.</p> <p><b>CAREERS / INDUSTRY LINKS</b>  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.</p>
<b>Related Course(s):</b>	Master of Engineering Structures Master of Engineering Structures
<b>Related Majors/Minors/ Specialisations:</b>	B-ENG Civil Engineering stream