

## MCEN90035 Capstone Project B

<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: 8 hours Total Time Commitment: 200 hours - (for exchange students completing a 'year long project')
<b>Prerequisites:</b>	<p>Pre- requisites for this subject are</p> <p>MCEN90012 Design for Manufacture and MCEN90013 Design for Integration (pre 2014 - MCEN90012 Design &amp; Manufacturing 1 and MCEN90013 Design &amp; Manufacturing 2) OR MCEN90024 Mechatronics Design and MCEN90011 Manufacturing Systems OR equivalent subjects as approved by A/Prof Peter Lee, Academic Programs Coordinator, Mechanical Engineering.</p>
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<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>Colin Burvill  <a href="mailto:colb@unimelb.edu.au">colb@unimelb.edu.au</a> (mailto:colb@unimelb.edu.au)</p>
<b>Subject Overview:</b>	<p><b>This subject is for Exchange students needing to complete a one year project.</b></p> <p>The subject involves undertaking a substantial project requiring an independent investigation on an approved topic in advanced engineering design or research. The emphasis of the project can be associated with either:</p> <ul style="list-style-type: none"> <li>• a well-defined project description, often based on a task required by an external, industrial client. Students will be tutored in the synthesis of practical solutions to complex technical problems within a structured working environment, as if they were professional engineering practitioners; or</li> <li>• a project description that will require an explorative approach, where students will pursue outcomes associated with new knowledge or understanding, within the mechanical science disciplines, often as an adjunct to existing academic research initiatives.</li> </ul> <p>It is expected that the project will incorporate findings associated with both well-defined professional practice and research principles.</p> <p>Note: MCEN90035 Capstone Project B is of year-long duration, students may commence in either Semester 1 or Semester 2 and continue their enrolment in the consecutive semester.</p>
<b>Learning Outcomes:</b>	This subject is normally only available to Exchange students.

	<p>Exchange students will complete a substantial project that is equivalent to one-eighth of a full-time course load (12.5 points), normally within the final year of study towards a professional engineering degree.</p> <p>Most students will complete this project over two semesters but start /finish dates can be flexible.</p> <p>Project selection will follow the procedure used for MCEN90022.</p> <p>The subject coordinator should be consulted before the task of securing a project begins.</p>
<b>Assessment:</b>	<p>One final report submitted at the end of the project, as agreed at the outset of the project between the student and the academic supervisor, in a Scope of Works document (80%). One verbal defence of the results and contributions of the project. Formal presentation 20 mins, questions 20 mins. (20%). An academic supervisor and academic examiner will provide marks for both Final Report and Verbal Defence.</p>
<b>Prescribed Texts:</b>	None
<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>	<p>On completion of this subject students should have the following skills -</p> <ul style="list-style-type: none"> <li>• Critical thinking and critical judgement of assumptions adopted</li> <li>• Interpretation and analysis of data</li> <li>• Application of theory to practice</li> <li>• Ability to communicate effectively, not only with engineers but also with the community at large</li> <li>• Ability to utilise a systems approach to design and operational performance</li> <li>• Ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member</li> <li>• Understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development</li> <li>• Understanding of the principles of sustainable design and development</li> <li>• Understanding of professional and ethical responsibilities and commitment to them</li> <li>• Capacity for independent critical thought, rational inquiry and self-directed learning</li> <li>• Openness to new ideas and unconventional critiques of received wisdom</li> <li>• Ability to apply knowledge of basic science and engineering fundamentals</li> <li>• Ability to undertake problem identification, formulation and solution</li> </ul>