

# CVEN30010 Systems Modelling and Design

<b>Credit Points:</b>	12.50									
<b>Level:</b>	3 (Undergraduate)									
<b>Dates &amp; Locations:</b>	This subject is not offered in 2013.									
<b>Time Commitment:</b>	Contact Hours: 52 hours per semester (Lectures: 32 hours, Workshops: 16 hours Laboratory sessions: 4 hours) Total Time Commitment: 120 hours									
<b>Prerequisites:</b>	<p># Admission to Master of Engineering (Civil) OR # Admission to Master of Engineering (Environmental) OR both of the following subjects:</p> <p><b>Please note:</b> Students who completed ENGR30001 - Fluid Mechanics &amp; Thermodynamics in 2012 or earlier are NOT require to complete ENGR30002 Fluid Mechanics.</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ENEN20002 Earth Processes for Engineering</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>ENGR30002 Fluid Mechanics</td> <td>Not offered 2013</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	ENEN20002 Earth Processes for Engineering	Not offered 2013	12.50	ENGR30002 Fluid Mechanics	Not offered 2013	12.50
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ENEN20002 Earth Processes for Engineering	Not offered 2013	12.50								
ENGR30002 Fluid Mechanics	Not offered 2013	12.50								
<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>Professor Ian Johnston <a href="mailto:ianwj@unimelb.edu.au">ianwj@unimelb.edu.au</a> (mailto:ianwj@unimelb.edu.au)</p>									
<b>Subject Overview:</b>	<p>This subject contains capstone design projects with an emphasis on geotechnical and hydraulic engineering but may include requirements for an understanding of other fields. Students will be given briefings on special topics in geotechnical and hydraulic engineering but there will be emphasis put on self-learning. Lectures may vary with the designs chosen but will generally provide a framework for students self-learning in soil permeability and seepage; flow nets; the effect of seepage on stability; slope stability principles; an appreciation of landslides; methods of analysis, design and remediation; the use of computer models to solve seepage and slope stability problems; aspects of channel flows including subcritical and supercritical flows, their response to changes in channel geometry; time-dependent behaviour and flow measurements. Students will also run physical models in the laboratory</p>									
<b>Objectives:</b>	<p>The objective of this subject is to have students experiencing realistic engineering modelling and design problems</p> <p>On successful completion of this subject students should be able to:</p> <ul style="list-style-type: none"> <li># Exhibit significant modelling and design skills and initiative</li> <li># Demonstrate competency in discussing technical issues</li> </ul>									

	<ul style="list-style-type: none"> <li># Use software to assist in designing engineering systems</li> <li># Analyse the interaction between engineering materials</li> </ul>
<b>Assessment:</b>	Two design reports (1500 words), due week 12 (40%) Two laboratory reports (1000 words) (10%) One 2-hour written examination, end of semester (50%) Hurdle requirement: Students must pass both assignment and examination components to pass the subject
<b>Prescribed Texts:</b>	None
<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2013/B-ARTS">https://handbook.unimelb.edu.au/view/2013/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2013/B-COM">https://handbook.unimelb.edu.au/view/2013/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2013/B-ENVS">https://handbook.unimelb.edu.au/view/2013/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2013/B-MUS">https://handbook.unimelb.edu.au/view/2013/B-MUS</a>)</li> </ul> <p>You should visit <b>learn more about breadth subjects</b> (<a href="http://breadth.unimelb.edu.au/breadth/info/index.html">http://breadth.unimelb.edu.au/breadth/info/index.html</a>) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<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># Ability to apply knowledge of basic science and engineering fundamentals</li> <li># Ability to undertake problem identification, formulation and solution</li> <li># Proficiency in engineering design</li> <li># Ability to utilise a systems approach to complex problems, and to design and assess performance</li> <li># Ability to communicate effectively</li> <li># Ability to manage information and documentation</li> <li># Ability to conduct an engineering project</li> <li># Ability to function effectively as an individual and in teams</li> <li># Capacity for creativity and innovation</li> </ul>
<b>Related Course(s):</b>	Bachelor of Engineering (Civil Engineering)
<b>Related Majors/Minors/Specialisations:</b>	<p>B-ENG Civil Engineering stream  Civil (Engineering) Systems major  Civil Systems  Environmental Engineering Systems major  Environments Discipline subjects  Master of Engineering (Civil)  Master of Engineering (Environmental)  Master of Engineering (Structural)  Science-credited subjects - new generation B-SCI and B-ENG. Core selective subjects for B-BMED.</p>