

# CVEN30010 Systems Modelling and Design

Credit Points:	12.50											
Level:	3 (Undergraduate)											
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.											
Time Commitment:	Contact Hours: 24 hours lectures and 26 hours of project and laboratory work per semester Total Time Commitment: 120 hours for the semester											
Prerequisites:	The following subjects are both prerequisites <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>ENEN20002 Earth Processes for Engineering</td><td>Semester 2</td><td>12.50</td></tr><tr><td>ENGR30001 Fluid Mechanics</td><td>Semester 1, Semester 2</td><td>12.50</td></tr></table>			Subject	Study Period Commencement:	Credit Points:	ENEN20002 Earth Processes for Engineering	Semester 2	12.50	ENGR30001 Fluid Mechanics	Semester 1, Semester 2	12.50
Subject	Study Period Commencement:	Credit Points:										
ENEN20002 Earth Processes for Engineering	Semester 2	12.50										
ENGR30001 Fluid Mechanics	Semester 1, Semester 2	12.50										
Corequisites:	None											
Recommended Background Knowledge:	None											
Non Allowed Subjects:	None											
Core Participation Requirements:	For the purposes of considering requeste for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>											
Coordinator:	Prof Ian Johnston											
Contact:	Melbourne School of Engineering Ground Floor Old Engineering Building #173 The University of Melbourne VIC 3010 AUSTRALIA General telephone enquiries + 61 3 8344 6703 + 61 3 8344 6507 Facsimiles + 61 3 9349 2182 + 61 3 8344 7707 Email: <a href="mailto:eng-info@unimelb.edu.au">eng-info@unimelb.edu.au</a> ( <a href="mailto:eng-info@unimelb.edu.au">mailto:eng-info@unimelb.edu.au</a> )											
Subject Overview:	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. Designs may vary from year to year but might typically constitute: the design and operation of a cofferdam, the remediation of an unstable slope, the design of a water supply pipe system and the design of a simple channel network. 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 a physical model in the laboratory.											

<b>Objectives:</b>	<p>The objective of this subject is to have students experiencing realistic engineering modelling and design problems by working in groups and as individuals.</p> <p>On completion of this subject successful 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> <li># Use software to assist in designing engineering systems</li> <li># Analyse the interaction between engineering materials</li> </ul>
<b>Assessment:</b>	<p>Four design reports based on group work (maximum of 1500 words each) spread from week 5 to week 12 (60%)</p> <p>Four (30 minute) tests spread throughout the semester (30%)</p> <p>One laboratory report of maximum 1000 words (10%)</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>	<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>	<p>Bachelor of Engineering</p> <p>Bachelor of Engineering (Civil) and Bachelor of Arts</p> <p>Bachelor of Engineering (Civil) and Bachelor of Commerce</p> <p>Bachelor of Engineering (Civil) and Bachelor of Laws</p> <p>Bachelor of Engineering (Civil) and Bachelor of Science</p> <p>Bachelor of Engineering (Environmental) and Bachelor of Arts</p> <p>Bachelor of Engineering (Environmental) and Bachelor of Commerce</p> <p>Bachelor of Engineering (Environmental) and Bachelor of Laws</p> <p>Bachelor of Science</p>
<b>Related Majors/Minors/ Specialisations:</b>	<p>Civil (Engineering) Systems</p> <p>Civil Systems</p> <p>Master of Engineering (Civil)</p> <p>Master of Engineering (Environmental)</p> <p>Physical (Environmental Engineering) Systems</p>