ENEN20002 Earth Processes for Engineering

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	This subject is not offered in 2013.
Time Commitment:	Contact Hours: 50 hours, comprising of 36 hours of lectures, 12 hours of tutorials and one 2-hour laboratory session per semester Total Time Commitment: 120 hours
Prerequisites:	Admission to the Master of Engineering OR EITHER of the following subjects:

Subject	Study Period Commencement:	Credit Points:
ENGR10003 Engineering Systems Design 2	Not offered 2013	12.50
ENVS10001 Natural Environments	Not offered 2013	12.50

Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students cannot enrol in and gain credit for this subject and: 421-209 Geomechanics 1
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:	Dr Sam Yuen **stsy@unimelb.edu.au (mailto:stsy@unimelb.edu.au)**
Subject Overview:	Earth Processes introduces physical earth processes and their engineering applications and implications. In particular, it concentrates on engineering relevant aspects of climate, water and soils and their interactions. Simplified modelling and relevant analytical techniques are introduced throughout the subject
Objectives:	On completion of this subject students should be able to: # Identify key aspects of the climate, soil and water environment that their course is directed towards # Describe and quantify aspects of the climate system, climate variability and climate change # Describe and analyse hydrological systems and the cycling and transformation of water and energy in those systems, including aspects of their variability, dependence on climate and landuse and implications for soil water and runoff behaviour # Describe the key soil and landscape forming processes and their geomechanical implications

	# Describe the concept of sustainability and, given a project description, identify and justify analyses required to assess aspects of environmental sustainability in the context of climate, water and soils # Quantify various constituents of soil and rock and classify them with hydrological and engineering implication # Understand how water and soil interact in natural hydrological systems and in engineering designs and quantify soil behaviour and stability caused by interaction of soil and water # Assess soil stability in both natural and engineering systems with the ability to predict stresses and strengths within a soil mass
Assessment:	One 2 hour examination, end of semester examination (50%) Four assignments no more than 4000 words in total, due throughout the semester (40%) One laboratory report of up to 1000 words (10%) Hurdle Requirement: Students must pass both assignment and examination components to pass the subject
Prescribed Texts:	None
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2013/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2013/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2013/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2013/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# Ability to apply knowledge of basic science and engineering fundamentals # Ability to undertake problem identification, formulation and solution # Critical thinking and judgement # Ability to communicate effectively # Understanding environmental responsibilities and the need for sustainable development # Ability to function effectively as an individual with the capacity to be an effective team members
Notes:	This subject is available for science credit to students enrolled in the BSc
Related Majors/Minors/ Specialisations:	B-ENG Civil Engineering stream Civil (Engineering) Systems major 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.
Related Breadth Track(s):	Engineering and Environments Civil and Environmental Engineering