ENEN20002 Earth Processes for Engineering

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus. On campus
Time Commitment:	Contact Hours: 36 hours of lectures, 10 hours of tutorials and 1 two-hour laboratory session Total Time Commitment: 120 hours per semester
Prerequisites:	**800-002 Engineering Systems Design 2 (/view/2010/800-002)** or **880-101 Natural Environments (/view/2010/880-101)**
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	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 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: http://www.services.unimelb.edu.au/disability/
Coordinator:	Dr Sam Yuen
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: **eng-info@unimelb.edu.au (mailto:eng-info@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:	At the conclusion 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:	2-hour written end-of-semester examination (50%)4 assignments no more than 4000 words in total scheduled throughout the semester (40%)1 laboratory report of up to 1000 words (10%)Students must pass both assignment and examination components to pass the subject.
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
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 has replaced 421-209 Geomechanics 1 This subject is available for science credit to students enrolled in the BSc
Related Course(s):	Bachelor of Engineering Bachelor of Science
Related Majors/Minors/ Specialisations:	Civil (Engineering) Systems Master of Engineering (Civil) Master of Engineering (Environmental) Master of Engineering (Structural) Physical (Environmental Engineering) Systems