EVSC20002 Soil and Water Resources

Credit Points:	12.5
Level:	2 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Twenty-four hours lectures and thirty-six hours of practicals including fieldwork and tutorials. Total Time Commitment: 170 hours.
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	A reasonable knowledge of the fundamentals of chemistry is recommended.
Non Allowed Subjects:	None
Core Participation Requirements:	Students undertaking this subject will be expected to regularly (at least weekly) access an internet-enabled computer. 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. This course requires all students to enrol in subjects where they must actively and safely contribute to field excursions and laboratory activities. Students who feel their disability will impact on meeting this requirement are encouraged to discuss this matter with the Subject Coordinator and Disability Liaison http://services.unimelb.edu.au/disability/ students email: disability-liaison@unimelb.edu.au
Coordinator:	Dr Christopher Weston, Dr Helen Suter
Contact:	Dr Helen Suter **helencs@unimelb.edu.au (mailto:helencs@unimelb.edu.au)** Dr Chris Weston **weston@unimelb.edu.au (mailto:weston@unimelb.edu.au)**
Subject Overview:	This subject will identify the importance of soil and water in the landscape and as key components of natural and production systems. A basic knowledge of soil properties and behaviour will be applied to understanding the cycling of water and nutrients, the appropriate use of fertilisers, irrigation and drainage and soil management practices designed to maintain or improve the condition of soil and water resources. The origin of soil variation in the landscape and codification of soil information through classification will be introduced.
Learning Outcomes:	This subject will cover areas including: # the origins of soil variability and how this variability is expressed through the properties and behaviour of soil in the field; # soil profile description and an introduction to soil classification (the Australian Soil Classification); # the physical and chemical nature of soil minerals and organic matter; the main soil organisms and their functions; # reactions in soil between the solution and surfaces; # soil structure, aeration. water retention and movement, availability of water to plants and effects of waterlogging; # introduction of nutrient cycling and its importance in natural and production systems (agriculture. horticulture and forestry); # the hydrological cycle, with emphasis on the major processes - precipitation, evaporation, runoff and drainage; # land degradation processes and their management - accelerated soil acidification, sodicity, salinity and erosion; # understanding the processes and the extent of the problems; # remedial measures; and

	# the impact of soil management on the water quality and quantity.
Assessment:	Exam held during end of semester exam period – 2000 word equivalent worth 50% Practical reports due in weeks 4, 8, 9 and 11 – 1200 words equivalent worth 30% Online Assessment tasks due in weeks 3, 6, 7, 8, 11 and 12 – 800 words equivalent worth 20%
Prescribed Texts:	None
Recommended Texts:	Ashman, M.R. and Puri, G. (2001). *Essential Soil Science: a clear and concise introduction to soil science*. Blackwell Science. Pigram, J.J. (2006). *Australia's Water Resources: from use to management*. CSIRO Publishing. White, R.E. (2005). *Principles and Practice of Soil Science.* 4th Edition. Blackwell Science.
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/2016/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/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:	On completing this subject, participants should be able to: # apply theories and principles to specific contexts # plan work, use time effectively and manage small projects # work constructively with colleagues # collect, evaluate and integrate information to solve problems in applied situations, including the use and manipulation of quantitative information and published literature in building arguments # learn new concepts and to apply that learning to complex systems # identify gaps in their knowledge and respect the value of other disciplines and points of view # begin to identify components of complex systems and elucidate interactions between components # prepare written documents of high quality that clearly and convincingly inform the reader
Notes:	This subject is available for science credit to students enrolled in the BSc (new degree only).
Related Majors/Minors/ Specialisations:	Agricultural Economics Environments Discipline subjects Landscape Ecosystem Management major Plant and Soil Science Production Animal Health Production Animal Science Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED Sustainable Production