

202-203 Soil and Water Resources

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Twenty-four hours lectures, 36 hours practicals Total Time Commitment: Contact hours: 58. Estimated total time commitment (including non-contact time): 108 hours.
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	Students undertaking this subject will be expected to regularly (at least weekly) access an internet-enabled computer.
Coordinator:	Assoc Prof Robert Edis
Contact:	Dr Robert Edis Email: roberte@unimelb.edu.au (mailto:roberte@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.
Objectives:	This subject will cover areas including: <ul style="list-style-type: none"> # 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:	Three- hour examination (50%) at the end of semester, five on-line problem sets throughout the semester (5% each) and one 300 word report on the field and laboratory activities (25%) due at the end of Week 10.
Prescribed Texts:	White, R.E. (2005). Principles and Practice of Soil Science. 4th Edition. Blackwell Science.

Recommended Texts:	<p>Ashman, M.R. and Puri, G. (2001). <i>Essential Soil Science: a clear and concise introduction to soil science</i>. Blackwell Science.</p> <p>Pigram, J.J. (2006). <i>Australia's Water Resources: from use to management</i>. CSIRO Publishing.</p>
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2009/D09) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05) <p>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.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>On completing this subject, participants should be able to:</p> <ul style="list-style-type: none"> # 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; and # 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 Course(s):	<p>Bachelor of Agricultural Science Bachelor of Agricultural Science Bachelor of Agricultural Science/Bachelor of Commerce Bachelor of Forest Science Bachelor of Natural Resource Management Bachelor of Natural Resource Management</p>
Related Majors/Minors/Specialisations:	Landscape Management