421-539 Geotechnical Applications

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: 32 hours of lectures and 16 hours of tutorials. Total Time Commitment: Not available
Prerequisites:	421-306 Geotechnical Engineering or equivalent
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
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
Coordinator:	Dr Guillermo Andres Narsilio
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Subject Overview:	Topics covered include shallow footings, bearing capacity solutions, settlement on sand and clays; Skempton-Bjerrum, Lambe and Davis Poulos methods, raft foundations, compensated foundations, expansive clays, soil improvement, deep foundations; capacity and settlement of single piles and pile groups; properties of waste materials, contaminated soils, effects of chemicals on soil properties, waste disposal systems, regulations governing waste disposal and management, site assessment/site selection, remediation techniques, liners, leachate collection systems, excavation and rock mass behaviour.
Objectives:	On completion of this unit students should be able to: # analyse for both the bearing capacity and settlement characteristics of footings subjected to a variety of loadings; # apply geotechnical engineering principles to solve contaminated soils and waste disposal problems; and have an understanding of rock mass behaviour
Assessment:	One 3-hour end of semester written examination (60%), together with three assignments of no more than 3000 words each due throughout the semester (40%). A pass in both assignment and examination components is required 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 communicate effectively, not only with engineers but also with the community at large # in-depth technical competence in at least one engineering discipline § ability to undertake problem identification, formulation and solution # ability to utilise a systems approach to design and operational performance # ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member # expectation of the need to undertake lifelong learning, capacity to do so # capacity for independent critical thought, rational inquiry and self-directed learning # intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity # openness to new ideas and unconventional critiques of received wisdom
Notes:	This subject replaces: 421-439 Geotechnical Applications
Related Course(s):	Master of Development Technologies Master of Energy Studies Master of Engineering Project Management Master of Engineering Structures Master of Environmental Engineering Master of Water Resource Management