

421-441 Infrastructure Design

Credit Points:	12.50
Level:	4 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: 24 hours lectures and 24 hours practical classes Total Time Commitment: Not available
Prerequisites:	421-316 Engineering Hydraulics and Hydrology, 421-306 Geotechnical Engineering
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>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.</p> <p>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</p></p>
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Subject Overview:	This subject integrates engineering science in the areas of hydraulics, hydrology and geotechnical engineering in applications of transport, water drainage and reticulation infrastructure. Topics covered in lectures include urban stormwater drainage systems; urban water supply, treatment and distribution systems; water supply pipeline design and surge protection; sewerage, wastewater collection and treatment; and hydraulic design of common hydraulic structures, the transport planning process, traffic survey methods, traffic flow theory, capacity of unsignalised intersections, traffic signal timing analysis, geometric design of roads, and pavement design. Two group design projects to allow students to practice their design skills.
Objectives:	<p>At the completion of this subject students should be able to:</p> <ul style="list-style-type: none"> # demonstrate their ability to work in a team on a complex engineering project # design free surface drainage systems for storm water and sewage # design pressurised reticulation systems # design geometry, pavements and foundations for wheeled traffic # design simple transport networks # ability to apply knowledge of basic science and engineering fundamentals # ability to undertake problem identification, formulation and solution # 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

Assessment:	One group assignment (2,000 words per student equivalent) in the first half of semester (35%), and one group assignment (2,000 words per student equivalent) in the second half of semester (35%), one exam (end of semester, 30%). Passing of the exam is a hurdle requirement of the subject. Team co-operation and contributions will be taken into account in awarding individual marks for team outcomes.
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
Notes:	This subject incorporates: 421-447 Transport Engineering
Related Course(s):	Bachelor of Engineering (Civil Engineering) Bachelor of Engineering (Civil) and Bachelor of Arts Bachelor of Engineering (Civil) and Bachelor of Commerce Bachelor of Engineering (Civil) and Bachelor of Laws Bachelor of Engineering (Civil) and Bachelor of Science Bachelor of Engineering (EngineeringManagement) Civil