

421-505 Engineering Hydraulics

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: 48 hours; Non-contact time commitment: 84 hours Total Time Commitment: Not available
Prerequisites:	421-103 Engineering Statics or equivalent
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>
Coordinator:	Assoc Prof Roger Hughes
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Subject Overview:	Fluid statics and kinematics of fluid motion; Bernoulli's equation, application of physical laws in solving flow problems via control volumes (involving the conservation equations of mass and momentum, the energy equation); dynamic similitude, dimensional analysis and physical scale modelling; flow in pipes, rotordynamic pumps, simple pipeline systems, pressure surges in pipes, discharge measurements in pipes; and flow past immersed bodies (introduction to boundary layer theory, lift and drag on immersed bodies).
Objectives:	On completion, candidates should be able to: <ul style="list-style-type: none"> # appreciate fluid behaviour; # formulate and solve problems in hydrostatics (that is involving fluids at rest) including submerged and floating bodies; # formulate and solve problems in hydraulics (that is involving the use of control volumes) including continuity, energy and momentum balances; # describe hydrodynamics problems using partial differential equations.
Assessment:	One written examination not exceeding 3 hours (70%) and assignments up to 1500 words relating to course work and laboratory classes (15%). One assignment (1500 words) plus a seminar presentation related to the in-depth investigation (15%).
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 will be co-taught to Undergraduate and Postgraduate students in 2009. This subject replaces: 421-305 Engineering Hydraulics 1
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 Bachelor of Engineering (EngineeringManagement) Environmental Bachelor of Engineering (Environmental Engineering) Bachelor of Engineering (Environmental) and Bachelor of Arts Bachelor of Engineering (Environmental) and Bachelor of Commerce Bachelor of Engineering (Environmental) and Bachelor of Laws Bachelor of Engineering (Environmental) and Bachelor of Science 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