

Civil Systems

Year and Campus:	2015															
Coordinator:	Dr Lihai Zhang Department of Civil and Environmental Engineering															
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Overview:	<p>Students who have undertaken the Civil Systems major will be able to rigorously integrate fundamental science to provide accurate information and optimum solutions to practical problems involving civil infrastructure. More specifically, core skills and knowledge that will be developed include: fundamental scientific comprehension that will lead to accurate computer modelling of civil systems, analytical and abstract thinking, problem-solving and design skills, ability to carry out laboratory experiments to eliminate or confirm possible solutions to complex problems. In all levels of this major, we will ensure the development of excellent communication skills that will enable our graduates to deliver complex scientific information in a clear and concise fashion.</p> <p>The Civil Systems major will provide various pathways for students. These include accredited professional or scientific research careers in civil engineering through further study in the Masters in Engineering (ME) or PhD programs. Professional masters courses in other disciplines such as education, law, or business will be available. Students may also choose to enter the workforce at the completion of their undergraduate degree with employers who value the range of scientific, technical and problem solving skills graduates will have developed.</p>															
Learning Outcomes:	<p><i>Civil Systems Major Graduates should demonstrate:</i></p> <ul style="list-style-type: none"> # a broad knowledge of Civil Systems major concepts and empirical findings, and so be able to understand a wide range of issues relating to sustainable infrastructure design, construction and operation; # capacity for rigorously integrating in-depth fundamental science to provide accurate information and optimum solutions to practical complex problems involving civil infrastructure; # capacity for applying risk management principles and techniques to engineering projects with the aim of prevention of loss of life by flood mitigation projects, or catastrophic losses caused by the failure of structure in earthquakes or storms; # excellent communication skills using a variety of modes that will enable the delivery of complex scientific information involving civil infrastructure in a clear and concise fashion to a range of audiences, for a range of purposes; # knowledge of the Code of Ethics, Engineers Australia and other regulatory frameworks relevant to Civil Systems Major. 															
Structure & Available Subjects:	Completion of 50 points of study at Level 3.															
Subject Options:	<p>All four of:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CVEN30008 Engineering Risk Analysis</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>CVEN30010 Systems Modelling and Design</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>CVEN30009 Structural Theory and Design</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>ENGR30002 Fluid Mechanics</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	CVEN30008 Engineering Risk Analysis	Semester 1	12.50	CVEN30010 Systems Modelling and Design	Semester 2	12.50	CVEN30009 Structural Theory and Design	Semester 2	12.50	ENGR30002 Fluid Mechanics	Semester 1, Semester 2	12.50
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Notes:	In addition to these four core subjects, students must complete either MAST20029 Engineering Mathematics OR both of MAST20009 Vector Calculus AND MAST20030 Differential Equations at Level 2.															
Related Course(s):	Bachelor of Science															