CVEN30008 Risk Analysis

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 2 hours of lectures + 2 hours of Laboratory Practical per week Total Time Commitment: 120 hours for the semester
Prerequisites:	Prerequisite for this subject is either admission to Master of Engineering OR the following subject

Subject	Study Period Commencement:	Credit Points:
MAST10007 Linear Algebra	Summer Term, Semester 1, Semester 2	12.50

Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
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Subject Overview:	This subject will focus on how risk analysis and management principles and techniques can be applied to engineering projects. Topics covered include: probability, random variables and their probability distributions and simulation techniques; confidence intervals and significance testing; parameter estimation, least squares modelling; an introduction to the history of engineering failures; the forms of risk and risk identification; the sociological implications of acceptable risk; approaches to risk management, monitoring for compliance, risk perception and design implications.
Objectives:	At the completion of this subject students should be able to; # Identify information sources and risks for engineering projects # Identify and develop a plan for managing risks and opportunities # Use statistical methods to analyse empirical data and develop a risk based simulation model. Undertake a sensitivity analysis to identify critical variables that have the potential for threatening the success of a project # Develop a Monte-Carlo simulation model to determine the likelihood a project will be financially viable # Implement a risk management framework based on AS4360 including risk identification, evaluation, allocation, mitigation and review # Identify and classify risk in terms of their severity and likelihood

	# Use tools to diagrams to assist in identifying and representing risks # Define a range of performance metrics for an engineering system
Assessment:	2 hour end of semester exam (60%)1500 word essay in the first half of semester (15%)2000 word essay in the second half of semester (25%)
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 science and engineering fundamentals # Ability to undertake problem identification, formulation, and solution # Understanding of social, cultural, global, and environmental responsibilities and the need to employ principles of sustainable development # Ability to utilise a systems approach to complex problems and to design and operational performance # Ability to function effectively as an individual and in multidisciplinary and multicultural teams, as a team leader or manager as well as an effective team member # Ability to communicate effectively, with the engineering team and with the community at large
Related Course(s):	Bachelor of Engineering Bachelor of Engineering (Civil) and Bachelor of Laws Bachelor of Engineering (Environmental) and Bachelor of Arts Bachelor of Engineering (Environmental) and Bachelor of Laws Bachelor of Science
Related Majors/Minors/ Specialisations:	Civil (Engineering) Systems Civil Systems Master of Engineering (Environmental) Master of Engineering (Structural) Physical (Environmental Engineering) Systems