ENGM90006 Engineering Contracts and Procurement

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 36 hours (Lectures/Tutorials: 3 hours per week) Total Time Commitment: 200 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Knowledge from the following subject will assist with learning in this subject:

Subject	Study Period Commencement:	Credit Points:
CVEN90045 Engineering Project Implementation	Semester 2	12.50

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:	Prof Colin Duffield
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Subject Overview:	**AIMS** In this subject students will learn how to structure and work with engineering contracts to deliver and procure engineering outcomes. Students will develop a working knowledge of contract administration and gain an understanding of commercial out workings of engineering. All engineers interface commercially with engineering contracts throughout their careers and thus the application of the subject content is broad. Those seeking to work as a contractor and as a contract administrator will find direct application of this subject's content. **INDICATIVE CONTENT** Commercial management of engineering projects including the role and responsibilities of corporate managers, market analysis, structuring of procurement options, development of contractual terms and conditions, and the pricing of work. Estimating and tendering engineering works via work breakdown structures, work method statements, risk identification and tendering principles. Contract administration and project control functions and techniques including time and money negotiations and cash flow management are also covered through the use of detailed case study material.
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)** On completion of this subject the student is expected to: 1 Assess the commercial viability of engineering projects

	2 Select an appropriate procurement strategy for a particular project 3 Be capable of interpreting the scope and meaning of contract documents for the delivery of engineering projects 4 Identify and manage risks and opportunities inherent in engineering projects 5 Understand the fundamentals of contract law 6 Conduct first principles cost estimating and tendering processes from a Contractors perspective 7 Be able to analyse and assess tenders 8 Understand how to administer and manage contracts based on Australian General Conditions of Contract in respect to extensions of time, variations and quality 9 Describe dispute resolution mechanisms and their relevance in Australian and International engineering practices and jurisdictions.
Assessment:	One 2-hour written examination (50%) end of semester. Intended Learning Outcomes (ILOs) 1 to 9 are addressed in this examination One assignment (45%) of up to 3000 words, progressively completed during the semester, requiring approximately 55 – 60 hours of work. ILOs 1, 2, 3, 4 and 6 are addressed in this assignment Participation and performance in a computer simulation exercise of running and engineering business (5%) during the semester. ILOs 1, 3, 4, 5 and 6 are adddressed in this assessment.
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 undertake problem identification, formulation, and solution # Ability to utilise a systems approach to complex problems and to design and operational performance # Ability to communicate effectively with the engineering team and with the community at large # Ability to manage information and documentation # Understanding of professional and ethical responsibilities, and commitment to them # 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 # Capacity for lifelong learning and professional development.
Notes:	**LEARNING AND TEACHING METHODS** The subject is based principally on presentations by experienced industry and academic professionals who present the theory and practices of engineering procurement and contracts as illustrated by project case studies and example situations from real projects. A computer simulation game is undertaken whereby students compete by bidding for and managing projects as if they are the management team for a major contractor. This game is based on a UK company and provides key learning's and feedback on the interface between engineering contracting and corporate management. Students also critique a real Australian request for tender via an assignment. **INDICATIVE KEY LEARNING RESOURCES** Extensive course notes are provided on LMS. Australian Standard General Conditions of Contract provides a base document for the contract administrative section of the course and AS/NZS 4300 (the general conditions of contract for design and contract projects) is appropriate. This standard is available via the library using the database section of the library (search for SAI Global – Australian Standards and then follow prompt to 4300 via the standards search engine). **CAREERS / INDUSTRY LINKS** Presenters from industry provide insights via the case studies presented. The computer simulation is based on real industry practice and is the same simulation game run internationally for consultants and contractors. The main case study dissected throughout the subject is a real and current project.
Related Course(s):	Doctor of Philosophy - Engineering Master of Energy Systems Master of Engineering Management Master of Engineering Project Management Master of Engineering Structures

	Master of Environmental Engineering Master of Philosophy - Engineering
Related Majors/Minors/ Specialisations:	B-ENG Civil Engineering stream Master of Engineering (Biomedical with Business) Master of Engineering (Chemical with Business) Master of Engineering (Civil with Business) Master of Engineering (Civil) Master of Engineering (Electrical with Business) Master of Engineering (Mechanical with Business) Master of Engineering (Software with Business)