

CVEN90043 Sustainable Infrastructure Engineering

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 48 hours, comprising of two hours of lectures and two hours of workshops per week Total Time Commitment: 200 hours
Prerequisites:	None
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><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> </p>
Coordinator:	Dr Meenakshi Arora
Contact:	Dr Meenakshi Arora marora@unimelb.edu.au (mailto:marora@unimelb.edu.au)
Subject Overview:	<p>AIMS This subject provides an overview of a wide range of issues relating to the design and operation of infrastructure, with a particular focus on the environmental, economic and civic sustainability of the projects. Students will gain an understanding of the complexities of decision-making in this sector and the role of government and regulation, the use of land and spatial information systems, as well as practical skills involved in assessing the financial and environmental impacts. The lectures and tutorials will be structured around case studies of various infrastructure projects. Students are expected to actively contribute to case study discussions in tutorials.</p> <p>This subject is part of a trio of subjects that consider different aspects of infrastructure projects; Engineering Site Characterisation studies how to determine the character of a site for a infrastructure project, Sustainable Infrastructure Engineering examines how the a project relates to the broader social, political, economic and environmental context, while project implementation concentrates on the operational aspects of implementing a project.</p> <p>INDICATIVE CONTENT Infrastructure and public policy; stakeholder engagement; sustainability in the social, economic and environmental domains; carbon accounting; life cycle assessment; extended cost benefit analysis; information infrastructure; land use planning for infrastructure; management for sustainable infrastructure; measuring sustainability; land administration systems; global perspectives on land management.</p>
Learning Outcomes:	INTENDED LEARNING OUTCOMES (ILO)

	<p>Having completed this subject the student is expected to:</p> <ol style="list-style-type: none"> 1 Discuss the sustainability of infrastructure with regard to environmental, economic and civic issues 2 Utilise a range of analytical tools useful for assessing the environmental and financial sustainability of infrastructure 3 Identify key issues in the design and operation across a broad range of infrastructure 4 Explore issues of governance, ethics and competing stakeholder interests.
Assessment:	<p>One 2 hour examination, end of semester (40%) One group major assignment report (Max 4000 words), requiring approximately 25-30 hours of work per student, due at the end of semester (20%) Contribution to and participation in issues raised during tutorials and preparation throughout semester (12%) One 20 minute group presentation, due mid semester, requiring approximately 13-15 hours of work per student (10%) One mid semester test of 30 minutes duration (18%) Hurdle requirement: Students must pass the end of semester examination to pass the subject.</p>
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:	<ul style="list-style-type: none"> # 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 # Capacity for lifelong learning and professional development # Understanding of professional and ethical responsibilities, and commitment to them.
Notes:	<p>LEARNING AND TEACHING METHODS The case study method of learning is used for this subject. Students work in classes of about 40 students to discuss a case study that they have previously researched in their groups.</p> <p>INDICATIVE KEY LEARNING RESOURCES Contemporary cases are given at the beginning of the semester</p> <p>CAREERS / INDUSTRY LINKS This subject uses contemporary engineering cases from around the world to explore the contextual issues that interrelate to engineering design.</p>
Related Course(s):	<p>Master of Engineering Management Master of Engineering Project Management Master of Engineering Structures Master of Environmental Engineering Master of Information Technology Master of Philosophy - Engineering Ph.D.- Engineering</p>
Related Majors/Minors/ Specialisations:	<p>B-ENG Civil Engineering stream MIT Spatial Specialisation Master of Engineering (Civil with Business) Master of Engineering (Civil) Master of Engineering (Environmental) Master of Engineering (Structural)</p>