

Subject Description Form

Subject Code	CSE40467
Subject Title	Environmental Management Systems
Credit Value	3
Level	4
Exclusion	CSE467 Environmental Management Systems
Objectives	To provide students with an overview of corporate environmental management, and Environmental Management System (EMS), particularly the ISO14001 standards; and To provide students with practical tools for corporate carbon management and business strategy for a net zero transition.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. understand the needs for environmental management in an organization; b. analyse corporate environmental issues, and develop the implementation plan of an appropriate EMS; c. understand the concepts of carbon footprint and climate change; d. master the practical skills of carbon measurement and reporting; and e. deliver a typical carbon management project in a real business environment.
Subject Synopsis/ Indicative Syllabus	(a) <u>Environmental Legislation and Organization Policy</u> Environmental policy and regulation; sustainable development; economical incentives in corporation environmental management. (b) <u>Environmental Management System</u> Corporate environmental programme; development of environmental management system (EMS); global environmental reporting. (c) <u>Environmental Management System Standard (ISO14000)</u> Structure of ISO14000; ISO14001 EMS; life cycle analysis (LCA); and environmental labeling.

	(d) <u>Implementation of an EMS</u> Environmental effects and environmental targets; environmental management plan; environmental manual and documentation; EMS audit; and management review. (e) <u>GHG inventory and carbon audit</u> Carbon footprint concept; definition of the boundaries; emission quantification; baseline and base year; reporting tools. (f) <u>Carbon management framework</u> Carbon management concepts; carbon trading and offsetting; corporate net zero strategy and case studies.																																															
Teaching/Learning Methodology	The subject teaching will include the following elements: (a) Lectures – to introduce the basic concepts of EMS, environmental management process, and analytical skills and carbon measurement and reporting tools; (b) Tutorials – to answer student questions in the learning processes; (c) Group discussion and presentations – to let students working together with a case study; (d) Reading materials and video presentations – to give students practical examples on EMS; (e) Seminars on EMS by invited speakers from corporate environmental directors and managers; and (f) Course work on EMS and mini carbon audit.																																															
Assessment Methods in Alignment with Intended Learning Outcomes	<table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="5">Intended subject learning outcomes to be assessed</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th><th>e</th></tr><tr><td>1. Continuous Assessment</td><td>35%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>EMS Project</td><td>20%</td><td>✓</td><td>✓</td><td></td><td></td><td></td></tr><tr><td>Carbon audit project</td><td>15%</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>2. Final Examination</td><td>65%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Total</td><td>100%</td><td colspan="5"></td></tr></table> Students must pass the final examination and achieve a passing overall score / grade to pass the subject. The continuous assessment methods include two individual/small group project (presentations).	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed					a	b	c	d	e	1. Continuous Assessment	35%	✓	✓	✓	✓	✓	EMS Project	20%	✓	✓				Carbon audit project	15%			✓	✓	✓	2. Final Examination	65%	✓	✓	✓	✓	✓	Total	100%					
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Student Study Effort Expected	Class contact:	Average number of hours used per week
	▪ Lectures	2 Hrs.
	▪ Tutorials/Group discussion	1 Hr.
	Other student study effort:	
	▪ Reading/case/study/reports	1.4 Hrs.
	▪ Self Study	4.6 Hrs.
	Total student study effort	9 Hrs.
Reading List and References	Christopher Sheldon, 2002. <i>Installing Environmental Management Systems: A Step-by-step Guide</i>. Earthscan, London. David Nelson, 1998. <i>International Environmental Auditing</i>. Government Institutes, Rockville, MD. USA. Gayle Woodside, 2002. <i>ISO 14001 Auditing Manual</i>. McGraw-Hill, New York. Jacob Bregman, 2002. <i>Environmental Compliance Handbook</i>. Lewis Publishers, Boca Raton, Fla.USA. John Kinsella, 1999. <i>Handbook for Implementing An ISO 14001 Environmental Management System: A Practical Approach</i>. EMCON, Bothell, WA. USA. ISO 14064-1: 2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals GHG Protocol 2010 <i>The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard</i>. Shelley Zhou, 2020. <i>Carbon Management for a Sustainable Environment</i>. Springer Nature.	