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. be able to deliver a typical carbon management project in a real business environment.
Subject Synopsis/ Indicative Syllabus	1. <u>Environmental Legislation</u> and Organization Policy Environmental policy and regulation; sustainable development; economical incentives in corporation environmental management. 2. <u>Environmental Management System</u> Corporate environmental programme; development of environmental management system (EMS); global environmental reporting. 3. <u>Environmental Management System Standard (ISO14000)</u> Structure of ISO14000; ISO14001 EMS; life cycle analysis (LCA); and environmental labeling.

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4. Implementation of an EMS
Environmental effects and environmental targets; environmental management plan; environmental manual and documentation; EMS audit; and management review.

5. GHG inventory and carbon audit
Carbon footprint concept; definition of the boundaries; emission quantification; baseline and base year; reporting tools.

6. Carbon management framework
Carbon management concepts; carbon trading and offsetting; corporate net zero strategy and case studies.
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<tr><td>Teaching/Learning Methodology</td><td>
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.
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<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="5">Intended subject learning outcomes to be assessed</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td></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="3"></td><td></td><td></td><td></td></tr>
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Students must pass the final examination and achieve a passing overall score / grade to pass the subject. The continuous assessment
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	methods include two individual/small group project (presentations).	
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. *Installing Environmental Management Systems: A Step-by-step Guide*. Earthscan, London. David Nelson, 1998. *International Environmental Auditing.* Government Institutes, Rockville, MD. USA. Gayle Woodside, 2002. *ISO 14001 Auditing Manual*. McGraw-Hill, New York. Jacob Bregman, 2002. *Environmental Compliance Handbook.* Lewis Publishers, Boca Raton, Fla.USA. John Kinsella, 1999. *Handbook for Implementing An ISO 14001 Environmental Management System: A Practical Approach*. 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 *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*. Shelley Zhou, 2020. *Carbon Management for a Sustainable Environment*. Springer Nature.	