

Subject Description Form

Subject Code	CSE539
Subject Title	Environmental Management Systems and Audit
Credit Value	3
Level	5
Pre-requisite/ Co-requisite/ Exclusion	<u>Mutual exclusions:</u> Environmental Planning and Management (CSE524)
Objectives	To provide students with an overview and practical skills related Environmental Management System (EMS) and the implementation process, particularly on the ISO14001 EMS standard. To introduce environmental auditing principles to students; to develop the practical skills of conducting various environmental audits.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: - understand the needs for environmental management systems; - analyse corporate environmental issues, and develop implementation plan of appropriate EMS; - help reviewing the EMS running and improving its performance; - understand the various environmental audits and auditing processes; and - conduct basic environmental audit.
Subject Synopsis/ Indicative Syllabus	<u>Keyword Syllabus</u> <u>Environmental Objectives, Environmental Policy and Legislation</u> Environmental policy and regulation; sustainable development; economical incentives in corporation environmental management. <u>Environmental Management System</u> Corporate environmental programme; development of environmental management system (EMS); global environmental reporting. <u>Environmental Management System Standard (ISO14000)</u> Structure of ISO14000; ISO14001 EMS; Life cycle analysis; Environmental labelling. <u>Implementing EMS</u> Environmental effects and environmental targets; environmental management plan; environmental manual and documentation, and EMS audit.

	v) <u>Environmental Audit</u> Different types of environment audits; audit programme planning; audit protocol. vi) <u>Environmental Audit Process</u> The pre-audit phase; on-site activities; audit report and follow up action plans.																																																						
Teaching/Learning Methodology	The subject teaching will include the following elements: a. Lectures – to introduce the basic concepts of EMS and environmental audits; 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 and audit; e. Seminars on EMS and/or environmental audit by invited speakers from corporate environmental directors and managers; and f. Course work and term project (individual cases study) on EMS or environmental 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>50%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>1.1. Individual Assignment / Case Study</td><td>20%</td><td>✓</td><td></td><td></td><td>✓</td><td></td></tr><tr><td>1.2. Group Project & Report</td><td>20%</td><td></td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>1.3. Group Presentation / Class Work</td><td>10%</td><td></td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>2. Written Examination</td><td>50%</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>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed					a	b	c	d	e	1. Continuous Assessment*	50%	✓	✓	✓	✓	✓	1.1. Individual Assignment / Case Study	20%	✓			✓		1.2. Group Project & Report	20%		✓	✓	✓	✓	1.3. Group Presentation / Class Work	10%		✓	✓	✓	✓	2. Written Examination	50%	✓	✓	✓	✓	✓	Total	100%					
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	*Notes: ▪ Individual Assignment / Case Study: 1 written task (e.g., evaluating an ISO 14001 Environmental Management System or reviewing an environmental audit case study). ▪ Group Project & Report: 1 team project that involves designing an EMS framework or conducting a mock audit for a specific facility or organization, accompanied by a final report. ▪ Group Presentation / Class Work: 1 presentation based on the group project findings alongside regular class participation tasks. Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes: Written examination is evaluated by final examination. Students must pass the final examination and achieve a passing overall score / grade to pass the subject.	
Student Study Effort Expected	Class contact:	
	▪ Lectures / Tutorials / Group discussion and presentations/ Seminar	39 Hrs.
	Other student study effort:	
	▪ Self-study and course work / Reading materials	78 Hrs.
	Total student study effort	117 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.	