Subject Description Form

Subject Code	CSE39480
Subject Title	Human Health and Environment
Credit Value	3
Level	3
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	(1) To introduce the concepts and application of epidemiology in environmental and occupational health, such as study designs and its advantages, disadvantages and limitation; (2) To understand the critical analysis of health risk by interpreting literatures and reviewing measures of risk and association; (3) To identify the factors and control methods affecting human health and environment, such as toxicity and toxic responses and the use of risk assessment for using toxic substances. (4) To develop the technical writing skills by planning, organising and producing effective workplace correspondence, and technical documents.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. understand the key areas of epidemiology and toxicology in environmental and occupational health and recognize the important role of a sound environment for the health of human beings; b. demonstrate understanding of factors contributing to environmental health problems and propose precautions. c. recognize the relationship between the environment and health and the important role of a sound environment for the for the benefit of human beings; d. apply knowledge and research skills learned in the discipline to develop data-driven reports for the profession.
Subject Synopsis/ Indicative Syllabus	1. <u>Introduction</u> Significance of environment for human health. Introduction to environmental diseases. Definitions. Historical background. Population and the environment. 2. <u>Environmental Epidemiology</u> Review and definition of environmental epidemiology. Contributions of epidemiology to environmental health. Strategies and Limitations. 3. <u>Environmental Toxicology</u> Description of toxicology and Criteria of toxicity. Concepts of dose and related terms. The dose-response relationships.

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4. <u>Toxic Metals and Elements</u>
Hazardous substances list. Sources and effects of exposure to metals. Toxic heavy metals. Potential of toxicity. Metals for used in medical therapy.

5. <u>Pesticides and Other Organic Chemicals</u>
Hazardous substances list. Pesticides. Dioxins. PCBs. Organic solvents. Chemical used in manufacturing of plastics. Cleaning and household products. Environmental oestrogens.

6. <u>Food Safety</u>
Review on importance of food safety. Global burden of foodborne illness. Food hazards. Food disease prevention. Hazard analysis of critical control points.

7. <u>Occupational Health</u>
Historical review of occupational health. Significance of occupational environment for health. Occupational diseases and accidents. Prevention of occupational diseases.

8. <u>Environmental Health Indicators</u>
The natural environment. Built environment and social environment. Establishment of environmental health monitoring system.

9. <u>Technical writing on human health and environmental issues</u>
Comprehension of technical texts. Organisation structures and language features to produce professional technical documents. Workplace correspondence. Cohesion and coherence. Appropriate style, format, structure and layout.
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<tr><td>Teaching/Learning Methodology</td><td>
Lectures, tutorials
Activities include lecturer input, individual and group work involving drafting and evaluating texts, project presentations and discussions. Contexts that involve health problems will be used in the teaching and learning activities.

Learning materials developed by the English Language Centre are used throughout this course. Additional reference materials will be recommended as required.
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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="4">Intended subject learning outcomes to be assessed</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td></tr>
<tr><td>1. Continuous Assessment</td><td>35</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr>
<tr><td>2. Project Presentation</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>3. Final Examination</td><td>50</td><td></td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>Total</td><td>100</td><td colspan="4"></td></tr>
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	Students must attain at least grade D in both coursework and final examination (whenever applicable) in order to attain a passing grade in the overall result.	
Student Study Effort Expected	Class contact:	Average hours per week
	▪ Lectures/ Tutorials	3 Hrs.
	Other student study effort:	
	▪ Coursework	2 Hrs.
	▪ Self Study	4 Hrs.
	Total student study effort	9 Hrs.
Reading List and References	<u>Essential Textbooks</u> 1. Beer, D. F. (Ed.). (2003). *Writing and speaking in the technology professions*: *A practical guide* (2nd ed.). Hoboken, NJ: Wiley. 2. Friis, R. H. (2007). *Essential of Environmental Health*. Boston: Jones and Barlett Publishers. 3. Lindsell-Roberts, S. (2004). *Strategic business letters and e-mail*. Boston: Houghton Mifflin. 4. Merrill, R.M. An Introduction to Epidemiology 5th Ed. Jones & Bartlett, 2010 5. Timbrell J. Principles of Biochemical Toxicology 4th Ed. London: Informa Healthcare <u>Reference Textbooks</u> 1. Goldman, L. and Coussens, C. M. (Editors). (2004). *Environmental Health Indicators*. Washington, D. C.: Institute of Medicine of The National Academies Press. 2. Greenberg, R.S. et al. Medical Epidemiology 4th Ed. New York : Lange Medical Books/McGraw-Hill, 2005. 3. Lautenbach, E., Woeltje, K.F., Malani, P.N. Practical Healthcare Epidemiology 3rd Ed. Chicago: University of Chicago Press 2010. 4. Lu, F.C. S. Lu's basic toxicology : fundamentals, target organs, and risk assessment 5th Ed. Oxford, UK: Taylor & Francis, 2009. 5. Winder, C., Stacey, N.H. Occupational Toxicology 2nd Ed Oxford, UK: Taylor & Francis 2004.	