

Subject Description Form

Subject Code	CSE544
Subject Title	Sustainable Development and Environmental Planning
Credit Value	3
Level	5
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	To provide students with an overview and understanding of the theories and current practices in sustainable development. The global perspective will be emphasized and environmental and energy planning will be introduced. This will equip students with a sound knowledge to appreciate water-energy-climate nexus and social responsibilities at private citizen, corporate, and governmental levels.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able:</p> <ol style="list-style-type: none"> a. to understand the fundamentals of sustainable development and its strategies; b. to understand climate change, ozone depletion, global carbon cycle, carbon footprint, non-renewable and renewable energy; c. to apply concept and knowledge to real life scenarios, such as choice of transportation means, energy planning, urban planning, personal carbon-footprint calculation; d. to assess and discuss the implications of personal, corporate and governmental actions to sustainability, based on which, to come up with appropriate environmental planning strategies, and e. to learn how to write a sustainability assessment report in the format of executive summary.
Subject Synopsis/ Indicative Syllabus	<p><u>Keyword Syllabus</u></p> <ol style="list-style-type: none"> i) <u>Introduction to Sustainable Development</u> The need of sustainability; issues with sustainability, nine planetary boundaries; history of sustainable development. ii) <u>Sustainable Development and Environmental Planning</u> Definition, components, indicators, and assessment of sustainable development; the United Nation's Sustainable Development Goals (SDGs); Hong Kong's approach toward sustainability. iii) <u>Environmental Issues</u> Global energy balance, greenhouse effect, global warming, Paris agreement, ozone depletion, ocean acidification, population growth. iv) <u>Global Carbon Cycle and Carbon Footprint Calculation</u> Global carbon cycle; life-cycle carbon footprint of different energy forms, commercial products, transportation choices, and personal activities; corporate carbon accounting, carbon sequestration; v) <u>Renewable Energy and Its Planning</u>

	<p>Energy efficiency; nuclear power (non-renewable); wind power; hydropower; bio-energy; solar energy; geothermal energy; the future of renewables</p> <p>vi) <u>Energy-Water-Food-Climate- Nexus and Future Cities</u>.</p> <p>Inter-dependence of energy, water, food, and climate; future cities and its planning strategies.</p>																																	
<p>Teaching/Learning Methodology</p>	<p>The lectures will introduce the concept of sustainable development and its corresponding environmental planning strategies. Relevant topics will be introduced in a sequential and gradual order. Case studies and in-lecture calculations will be used to enhance the learning outcomes. Group projects and class discussions will be employed to promote team spirit and group learning. Real-life scenarios and locally relevant examples will be used in the lectures and group discussions. Planning strategies at personal, corporate, and local, and global levels will be discussed in a hierarchical manner.</p>																																	
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1" data-bbox="443 745 1471 1223"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="5">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a.</th> <th>b.</th> <th>c.</th> <th>d.</th> <th>e.</th> </tr> </thead> <tbody> <tr> <td>1. Continuous Assessment</td> <td>30%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>2. Written Examination</td> <td>70%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>Total</td> <td>100%</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The continuous assessment will be based on one individual homework, one project report and one oral presentation.</p> <p>Written examination is evaluated by final examination.</p> <p>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.</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					a.	b.	c.	d.	e.	1. Continuous Assessment	30%	✓	✓	✓	✓	✓	2. Written Examination	70%	✓	✓	✓	✓		Total	100%					
Specific assessment methods/tasks	% weighting			Intended subject learning outcomes to be assessed (Please tick as appropriate)																														
		a.	b.	c.	d.	e.																												
1. Continuous Assessment	30%	✓	✓	✓	✓	✓																												
2. Written Examination	70%	✓	✓	✓	✓																													
Total	100%																																	
<p>Reading List and References</p>	<p><u>Books</u></p> <p>R. T. Wright & D. F. Boorse (2017) Environmental Science: Towards A Sustainable Future, 13th Ed., Pearson Education.</p> <p>Sergio C. Capareda (2020) Introduction to Renewable Energy Conversions, CRC Press/Taylor & Francis.</p> <p>The 2030 Agenda for Sustainable Development, The United Nations</p> <p>Hong Kong 2030: Planning Vision and Strategy – Strategic Environmental Assessment, Planning Department, Hong Kong Government.</p>																																	