

Subject Description Form

Subject Code	EE460
Subject Title	Energy Policy and Management
Credit Value	3
Level	4
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	<ol style="list-style-type: none"> 1. To present fundamental concepts on energy policy and the related management issues. 2. To provide knowledge on development and current status of energy sources, energy market and energy policies. Emphasis will be placed on technological and socio-economical points of view. 3. To provide knowledge on concept of energy management, resource planning and demand side management.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. To understand energy market and energy supply infrastructure. b. To explain the economics and technological principle of energy market. c. To assess and discuss the roles and objective of energy policy, as well as its implementation and development. d. To compare energy efficiency in different types of fuels and hence design management strategies on resources planning and demand side management. e. To communicate logically and lucidly through discussions and presentations.
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> 1. Introduction: Nature of different kinds of energy and power generation, overview of energy market, world energy consumption, energy needs of growing economy, long term energy scenario, energy supply infrastructure, scheme of control agreement (SCA). 2. Energy market: Energy sector reform, deregulation of energy & electricity market, economics and technological principles for power market operations, energy trading models: pool and bilateral contracts, market power and its mitigation, emission trading, energy risk management, financial hedging principles, electric power industry, ancillary services. 3. Energy policy: Objective & roles of energy policy, existing energy and renewable energy policy in Hong Kong, China and overseas, its related laws, its implementation and its future development, comparisons of energy policies among developed countries, related policies for competition and sustainable development, the linkages between policy, planning and management. 4. Energy management: Concepts of energy management; comparisons of energy efficiency in different types of fuels and modes of operations, introduction to integrated resource planning and portfolio, management (IRP & PM) for the right mix of generation types, transmission and conservation, demand side energy management. 5. Energy policy & management case studies: Sharing and discussions on the real energy policy and management cases in the world, Comparing and designing the new SCA in Hong Kong, renewable energy policy review and market design.

Teaching/Learning Methodology	<p>The concept of energy policy and management will be presented through lectures and tutorials on local and international case studies. Students are expected to take initiative to learn through the process of engagement and participation in lectures and tutorial sessions. Students will be required to form groups to work through a mini-project for a selected topic. Mini-Projects are used to enhance students learning experiences and practical applications.</p> <table border="1" data-bbox="432 349 1455 584"> <thead> <tr> <th rowspan="2">Teaching/Learning Methodology</th> <th colspan="5">Outcomes</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>Tutorials</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>Mini-projects</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table>						Teaching/Learning Methodology	Outcomes					a	b	c	d	e	Lectures	✓	✓	✓	✓		Tutorials	✓	✓	✓	✓		Mini-projects		✓	✓	✓	✓																		
Teaching/Learning Methodology	Outcomes																																																				
	a	b	c	d	e																																																
Lectures	✓	✓	✓	✓																																																	
Tutorials	✓	✓	✓	✓																																																	
Mini-projects		✓	✓	✓	✓																																																
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1" data-bbox="432 674 1455 1043"> <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</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> </tr> </thead> <tbody> <tr> <td>1. Examination</td> <td>60%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>2. Class Test</td> <td>15%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>3. Essay Assignment</td> <td>10%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>4. Mini-project & report</td> <td>15%</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100%</td> <td colspan="5"></td> </tr> </tbody> </table> <p>The subject outcomes on concepts, assessment and implementations of energy policy and management are evaluated by means of examination, quizzes and tests. The outcomes on practical applications and implementations of energy policy and management, as well as technical writing, are evaluated by mini-project and reports.</p>						Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed					a	b	c	d	e	1. Examination	60%	✓	✓	✓	✓		2. Class Test	15%	✓	✓	✓			3. Essay Assignment	10%	✓	✓	✓	✓		4. Mini-project & report	15%		✓	✓	✓	✓	Total	100%					
Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed																																																			
		a	b	c	d	e																																															
1. Examination	60%	✓	✓	✓	✓																																																
2. Class Test	15%	✓	✓	✓																																																	
3. Essay Assignment	10%	✓	✓	✓	✓																																																
4. Mini-project & report	15%		✓	✓	✓	✓																																															
Total	100%																																																				
Student Study Effort Expected	<p>Class contact:</p> <ul style="list-style-type: none"> ▪ Lecture/Tutorial <p>Other student study effort:</p> <ul style="list-style-type: none"> ▪ Mini-project discussion/Report/Essay ▪ Self-study <p>Total student study effort</p>					<p>39 Hrs.</p> <p>20 Hrs.</p> <p>46 Hrs.</p> <p>105 Hrs.</p>																																															
Reading List and References	<p>Reference books:</p> <ol style="list-style-type: none"> 1. F. Kreith and D.Y. Goswami, Energy Management and Conservation Handbook, Boca Raton: CRC Press, 2008 2. M. Chick, Electricity and Energy Policy in Britain, France and the United States since 1945, Cheltenham, Northampton, Mass: Edward Elgar, 2007 3. K. Mallon, Renewable Energy Policy and Politics: A Handbook for Decision-making, London, Sterling, VA: Eathscan, 2006 4. B.L. Capehart, W.C. Turner and W.J. Kennedy, Guide to Energy Management, Fairmont Press, New York: distributed by Dekker, 2003 																																																				