**Subject Description Form**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EE525</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Energy Policy and Restructuring of Electricity Supply Industry</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>5</td>
</tr>
<tr>
<td>Pre-requisite/Co-requisite/Exclusion</td>
<td>Nil</td>
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**Objectives**

1. To provide students with a comprehensive knowledge in formulating practical energy policies for sustainable energy utilization.
2. To develop a conceptual framework for understanding key and practical issues of restructuring electricity supply industry.

**Intended Learning Outcomes**

Upon completion of the subject, students will be able to:

a. Identify, evaluate and formulate energy policies for sustainable energy utilization.

b. Identify the rationale and key issues for restructuring electricity supply industry.

c. Explain the market structures and regulatory framework for electricity supply industry.

d. Explain and evaluate different pricing concepts and pricing contracts in restructured electricity supply industry.

e. Present the results of study in the form of written technical reports and oral presentation.

**Subject Synopsis/Indicative Syllabus**

1. **Energy policy:** Scope and limit of energy policy. Policy responses: environmental control and clean energy technology, energy efficiency and alternative energy sources. Policy instruments and their evaluation. Sustainable energy concept: trade-off between energy consumption, resources availability and environment deterioration.

2. **Energy conservation and demand side management:** Energy conservation policy: efficient utilization and transformation, recycling of materials and waste heat extraction. Load management: energy and load growth, direct and indirect load control. Integrated Resources Planning: system cost, end-use development and environment cost.

3. **Restructuring of the ESI:** Electricity supply industry structures; Privatisation and competition; Market structures and architectures; Regulation of Electricity Markets; Key issues for China and Hong Kong.

4. **Electricity pricing and management:** Short range marginal cost. Real time and time-of-day pricing applications. Analysis of BOT option. Transmission contracts pricing. Futures and forward markets.

**Case Study:**

1. Functional analysis on energy policies
2. Practical application of sustainable energy measures
3. Analysis on key issues of ESI restructuring
4. Implementation issues on ESI restructuring

**Teaching/Learning Methodology**

The concept of energy policy, identifications and discussions of ways of restructuring electricity supply industry will be presented through lectures and tutorials on case studies and international experiences. Students are expected to take initiative to learn through the process of engagement and participation in lectures and tutorial sessions. Mini-Projects are used to enhance students learning experiences and practical applications. They provide students with the opportunity to develop independent evaluation, formulation and technical report writing skills pertinent to the field of energy policy and restructuring electricity supply industry.

<table>
<thead>
<tr>
<th>Teaching/Learning Methodology</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>√</td>
</tr>
<tr>
<td>Tutorials</td>
<td>√</td>
</tr>
<tr>
<td>Mini-projects</td>
<td>√</td>
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</tbody>
</table>

**Assessment Methods in Alignment with Intended Learning Outcomes**

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Examination</td>
<td>60%</td>
<td>√     √     √     √     √</td>
</tr>
<tr>
<td>2. Class test/Quiz</td>
<td>25%</td>
<td>√     √     √     √</td>
</tr>
<tr>
<td>3. Mini-project &amp; report</td>
<td>15%</td>
<td>√     √     √     √     √</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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The subject outcomes on concepts, evaluations and formulations are assessed by means of examination, quizzes and tests. The outcomes on practical formulations, implementation and evaluations of energy policies, restructuring electricity supply industry and electricity pricing, as well as technical writing, are assessed by mini-project and reports.

**Student Study Effort Expected**

- Class contact:
  - Lecture/Tutorial 30 Hrs.
  - Case studies/Group discussion 9 Hrs.

- Other student study effort:
  - Mini-project discussion/report 18 Hrs.
  - Self-study 40 Hrs.

Total student study effort 97 Hrs.

**Reading List and References**


June 2016