HE310/HE3010: Energy Economics (Semester I, 2014/15)

Pre-requisite: HE101/AB106/HE191

Lecturer: Assistant Professor Youngho CHANG
Tel: 6513-8107; Fax: 6795-5797; Email: isyhchang@ntu.edu.sg
Office: HSS-04-65

Venue: Lecture: SPMS- LT4; Tutorial: HSS-TR+5 and HSSSEMRM3
Time: Lecture: 09:30-11:30 (Wednesday);
   Tutorials: 10:30-11:30; 11:30-12:30; 12:30-13:30; 13:30-14:30 (Tuesday)

Course Outline:
This course studies how energy resources, for instance, exhaustible resources such as fossil fuels
and nuclear energy, renewable energy resources such as biofuel, solar, wind, tidal, wave and
geothermal energy, and a secondary energy resource such as electricity, are produced, allocated
and consumed in the economy, and examines how energy consumption and production
contribute to economic growth. The key topics covered are:

- An overview of energy economics, key analytical frameworks for allocating energy
  resources in the market, and the scientific and engineering nature and characteristics of
  energy;
- Market mechanisms that affect the demand for and supply of energy in various energy
  markets – a competitive market for coal, a natural monopoly for electricity market, a
  monopolistic market for oil and an oligopolistic market for natural gas;
- The production decision of exhaustible resources over time and the cost structure of
  energy sources;
- The relationship between energy consumption and economic growth;
- Energy-economy models in which the relationship between energy use and economic
  performance is analyzed.

Throughout the course, students keep searching for answers to the questions such as why and
how economists study energy, how much energy we have and how we know, how we use energy
in an economy, and what the impacts of using energy in the economy are.

Students are encouraged to read the required chapter(s) and supplement reading materials every
week, and participate in the tutorial classes at which the various energy market regimes are
examined with actual data. Students are required to carry out a team project on issues relating to
energy.

Through this course, students would understand how market instruments affect the way energy is
produced, transported to and used in an economy; figure out the costs of harnessing various
energy resources; and comprehend the consequences and the possibilities and limits for securing
the supply of energy for sustainable future.
Main Texts:


Supplementary Texts:


Further Readings:


Team Project and Essay Assignments:
Students are encouraged to participate actively in class discussions and carry out a team project and submit a team project report (about 4,000 words). **The deadline for submitting a hardcopy of the Project Report (and a softcopy via Turnitin) is 29 October 2014.** There will be a few essay and/or survey assignments.

Evaluation:
The assessment for this course is as follows:

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<tbody>
<tr>
<td>Class Participation</td>
<td>10%</td>
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<tr>
<td>Class Discussion and Presentation</td>
<td>10%</td>
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<td>Team Project</td>
<td>30%</td>
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<td>Final Examination</td>
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