Energy Systems and Sustainability (CENG0026)

**Description**

**Aims:**
To provide a broad study of conventional and renewable Energy Systems and an advanced knowledge of selected emerging energy technologies. To develop skills in the design of energy systems with emphasis on sustainability, improving efficiencies and the use of renewable energy sources.

**Learning Outcomes:**
On completion, students should:
- have a broad knowledge of the various conventional and renewable energy conversion technologies and enhanced knowledge of selected advanced topics.
- understand the concept of Sustainable Development in Energy and be familiar with issues related to Technology Needs and Barriers, Environmental Impact and Energy Economics.

**Synopsis:**
- Energy Resources and Use: Conventional fuels; alternative fuels; demand side issues; changing pattern of energy use; future energy scenarios.
- Conventional Energy Conversion: heat engines, turbine systems; nuclear fission, heat transfer.
- Renewable Energy: Hydro, wave, wind, solar thermal, photovoltaics, biofuels, nuclear fusion etc.
- Advanced Subjects: E.g. Fuel cells; waste to energy; energy system optimization.
- Energy in a Sustainable Future: Concept of sustainability.

**Key information**

<table>
<thead>
<tr>
<th><strong>Year</strong></th>
<th>2020/21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credit value</strong></td>
<td>15 (150 study hours)</td>
</tr>
<tr>
<td><strong>Delivery</strong></td>
<td>PGT L7, Campus-based</td>
</tr>
<tr>
<td><strong>Reading List</strong></td>
<td><a href="#">View on UCL website</a></td>
</tr>
<tr>
<td><strong>Tutor</strong></td>
<td>Prof Dan Brett</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td>Term 2</td>
</tr>
<tr>
<td><strong>Timetable</strong></td>
<td><a href="#">View on UCL website</a></td>
</tr>
</tbody>
</table>

**Assessment**

- Written examination (main exam period): 70.0%
- Coursework: 30.0%

**Find out more**

For more information about the department, programmes, relevant open days and to browse other modules, visit [ucl.ac.uk](http://ucl.ac.uk)

---

**Disclaimer:** All information correct as of March 2020. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
Energy Systems and Sustainability (CENG0026)

Description

Aims:
To provide a broad study of conventional and renewable Energy Systems and an advanced knowledge of selected emerging energy technologies. To develop skills in the design of energy systems with emphasis on sustainability, improving efficiencies and the use of renewable energy sources.

Learning Outcomes:
On completion, students should:

- have a broad knowledge of the various conventional and renewable energy conversion technologies and enhanced knowledge of selected advanced topics.
- understand the concept of Sustainable Development in Energy and be familiar with issues related to Technology Needs and Barriers, Environmental Impact and Energy Economics.

Synopsis:

- Energy Resources and Use: Conventional fuels; alternative fuels; demand side issues; changing pattern of energy use; future energy scenarios.
- Conventional Energy Conversion: heat engines, turbine systems; nuclear fission, heat transfer.
- Renewable Energy: Hydro, wave, wind, solar thermal, photovoltaics, biofuels, nuclear fusion etc.
- Advanced Subjects: E.g. Fuel cells; waste to energy; energy system optimization.
- Energy in a Sustainable Future: Concept of sustainability.

Key information

- Year: 2020/21
- Credit value: 15 (150 study hours)
- Delivery: UGM L7, Campus-based
- Reading List: View on UCL website
- Tutor: Prof Dan Brett
- Term: Term 2
- Timetable: View on UCL website

Assessment

- Written examination (main exam period): 70.0%
- Coursework: 30.0%

Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk