EE6613- Green Electronics - Theory, Eco-design, Experiments and Applications

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Green Electronics

Environmental friendly ideas: Eco-design and recycling technology

Green Electronics - Theory, Eco-design, Experiments and Applications

Environmental concerns related to Electronic Industry, and environmental regulations

Electronic materials, manufacturing and processes control for Green electronics

Detection technology and analysing methods: in lab and industry
**Introduction to Green Electronics and environmental regulations:**
Environmental concerns of the modern society, Overview of electronics industry and their relevant regulations in China, European Union and other key countries, Restriction of Hazardous substances (RoHS), Waste Electrical and electronic equipment (WEEE), Energy using Product (EuP) and Registration, Evaluation, Authorisation and Restriction of Chemical substances (REACH).

**Green electronics materials & products, and Recycling:**

**Product design and Sustainable Eco-Design**
Stages of product development process in green design: Materials, Manufacturing, Packaging and use, End of Life and disposal, Design for recycling. Life Cycle Assessment (LCA), and Eco-design tools. Environmental management systems, and International standards, Eco-design in electronics industry.

**Case Studies**
Selected cases are used to illustrate some of the above topics. Laboratory experiments, class discussions and project work will be used to substantiate the relevant cases in question, with a view to integrating the discovery-enriched curriculum (DEC) elements.
## Assessment

<table>
<thead>
<tr>
<th>Type of assessment tasks</th>
<th>Weighting (if applicable)</th>
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<tbody>
<tr>
<td>Continuous Assessment</td>
<td></td>
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<tr>
<td>Group project</td>
<td>20%</td>
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<tr>
<td>Individual Project</td>
<td>30%</td>
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<tr>
<td>Examination</td>
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<tr>
<td>Written Exam (closed book, 2 hours)</td>
<td>50%</td>
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</table>
**Individual Project examples:**

- 2 categories of individual projects:
  
  *IP1 Reuse and recycle of End-of-Life (EOL) Electronic Products (except CRT)*

  *IP2 Eco-design of an electronic product (except mobile phone)*
Assessment

Group Project examples:

✓ Assignment of group projects:

- GP1 Design for Recycling – LCD monitors
- GP2 Eco-design of a laptop (notebook) PC
- GP3 How best to dispose of the E-waste of PC motherboards
- GP4 Life cycle assessment of photocopiers