Environmental, Economic, and Societal Impacts of Engineering Solutions

- Accreditation Board for Engineering and Technology (ABET)

- ABET wants engineering students to graduate with “the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.”

- This activity is voluntary and anonymous.

- Complete submissions will receive bonus (or HW) points.
Activity

1- **Find** a scientific paper which discusses **at least** the (1) environmental, (2) economic, and (3) societal impacts of a specific engineering solution.

- Examples:
  a) *A macroscopic forecasting framework for estimating socioeconomic and environmental performance of intelligent transport highways*
  b) *The Impact of Offshore Wind Farms on Marine Ecosystems: A Review Taking an Ecosystem Services Perspective*
  c) *Social, Economic, and Ethical Implications of Ambient Intelligence and Ubiquitous Computing*
  d) *The Global Footprint of Mobile Communications: The Ecological and Economic Perspective*
Activity

2- Comment on the following points using precise and short sentences:

a) The economic sustainability of the engineering design/solution considered
b) The environmental sustainability of the engineering design/solution considered
c) The social sustainability of the engineering design/solution considered

3- Answer the following question:
How are the above impacts important at the national and global levels?
Activity

4- Turn in your assignment with a cover sheet including your name and class year.

The cover page is used by your instructor to track completion and will be removed prior to storage and evaluation.
# Rubric

<table>
<thead>
<tr>
<th>Do the submitted assignments demonstrate that the student or team of students:</th>
<th>No Evidence of Work</th>
<th>Does Not Meet Expectations</th>
<th>Meets Expectations</th>
<th>Exceeds Expectations</th>
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</thead>
<tbody>
<tr>
<td>Understood the economic sustainability of their engineering design?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Understood the environmental sustainability of their engineering design?</td>
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<tr>
<td>Understood the social sustainability (including cultural, psychological and political impacts) of their engineering design?</td>
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<td>Understood how the above impacts were important at the neighborhood, city, state, national, and global levels?</td>
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