



## Engineering Lesson Plan

**Title of Lesson:** Environmental Ethics and Social Responsibility

**Course:** ENGR 1

### Student Learning Goals:

1. Students will develop an understanding of their own waste and its impact.
2. Students will demonstrate an understanding of e-waste and the impact of electronics.
3. Students will be able to work in small groups in order to efficiently identify the key points of their selected case study.
4. Students will be able to verbally communicate and present ideas developed in their groups to the class.
5. Students will demonstrate their ability to use course materials to apply problem solving and critical thinking skills to resolve real world issues.

### Activity 1: Homework Assignment

Students can access the Markkula Center environmental ethics website and use the carbon footprint calculator. This will help show how in their own lives on campus (or off) they impact the environment via waste and lifestyle choices. After taking the survey and getting their results, students will write a brief reflection on what surprised them, what didn't and how they might improve their impact on the environment.

### Activity 2: Small Group Work

This activity will challenge students to examine environmental engineering case studies and how to tackle environmental responsibility of companies in the situations outlined. By working together in small groups, students will be able share their ideas with each other and come to an agreement on which key ideas to present to the class.

- Students will be divided into small groups of 4 to 5 students.
- Each group will be provided with a different case study to read, picked from the book *Keeping Pace with Science and Engineering* in which each chapter is a case study regarding waste. It may be a good idea to assign the case studies the day before as reading if class time is an issue.
  - Students will be asked to share their findings within their groups for 5 to 10 minutes

- Groups will prepare a 5 minute presentation and select a spokesperson that will present their group's findings and feedbacks on their case study at the end of the activity.
- Presentations could be conducted through slideshows prepared by groups.
  - Key ideas to incorporate in presentations:
    - What techniques are implemented or should be implemented to improve impact on the environment?
    - How can social responsibility become a higher priority and be effective in maintaining productivity?

**Materials:**

[Keeping Pace with Science and Engineering](#)