Please note that this document provides only core course information. A complete syllabus will be available on Canvas to enrolled students. There is no required textbook for this class.

**LEAP 1501: Social and Ethical Implications of Engineering**  
*Section 10: TH 10:45-12:05, HPR N 225  
Section 11: 2:00-3:20, M LI 1715*

*Social/Behavioral Science Exploration (BF) and Sustainability Designation (SUSL)*  
*Fulfills specific ABET Criteria for the College of Engineering*  
*First Semester of Engineering Sequence for General Education*

**M. Harper, Ph.D.**  
Phone/Text: 801-557-8153  
Email: m.harper@utah.edu  
Office: 148 Sill Center  
Office Hours: TBA

**Course Description**

This course provides an understanding of the role of ethics in the engineering profession by focusing on concerns and relationships among issues such as sustainability, technology, economics, political climate, and public safety. Case studies will inform your understanding of social, ethical, environmental, and financial implications and consequences of engineering designs, risks, flaws, and practices. Through application of social science concepts and approaches to engineering contexts, we will explore interactions and intersections among human institutions, decision-making processes, and ethics in national and global communities. Sustainable development, from an engineer’s perspective, benefits from innovations in technology and science, but is also often at odds with the demands of a growing world population and consumption of natural resources.

**There is no textbook for this class. Required readings will be available on Canvas.**

In order to understand better the role of the engineer in local, national, and global settings, you will begin by asking:

- What is a society or community? How do engineers define a professional society? What is the purpose of professional engineering societies?
- How can engineers determine ethical courses of action while managing obligations and making decisions within different communities?
- What are some of the major questions and problems about communities studied by social scientists? What can engineers learn from social scientists and thus implement in dealing with other engineers, corporations, government agencies and/or the public?
- How do social scientists study human behavior and institutions? What should engineers know about social and organizational theory?
What role do social scientists play in influencing public debate and policy? How does this relate to the role of engineers as citizens and as technical advisors in shaping progress or changes in technology?

How do engineers and social scientists analyze and respond to global issues?

**Learning Objectives for E-LEAP 1501**

1. **Critical Thinking**
   a. reading for main ideas
   b. assessing issues from different perspectives
   c. discussing topics in a thoughtful manner
   d. evaluating arguments and evidence

2. **Teamwork**
   a. collaboration
   b. negotiation and compromise
   c. building leadership skills

3. **Information literacy**
   a. social and ethical implications of the creation and/or construction of technology and its uses domestically and globally by using social science methods of inquiry
   b. knowledge of specific events and cases pertinent in the recent history of engineering technologies and designs
   c. introduction to principles and issues of sustainability and “green engineering”
   d. use of quantitative information and analysis

4. **Communication**
   a. professional communication skills
   b. practice and improvement in technical writing and presentations
   c. practice and improvement in oral argumentation
   d. ability to assess levels of technical expertise in audiences

5. **Research**
   a. search strategies and familiarity with databases in the social sciences, applied sciences, and engineering
   b. research methodologies
   c. evaluation of internet sources
   d. integration of library resources into a team research project
   e. use of APA or IEEE citation style

6. **Personal development**
   a. exploration of campus activities, organizations, and opportunities in service and leadership
   b. integration and sense of belonging in the university community and in the College of Engineering
   c. friendships and social networks
   d. engagement within the LEAP learning community—with classmates, peer advisor, faculty
Grading and Assignments

**Individual Assignments** 100 Points

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newsletter: Interview with an Engineering Professional</td>
<td>10</td>
</tr>
<tr>
<td>Homework (7)</td>
<td>35</td>
</tr>
<tr>
<td>Midterm</td>
<td>20</td>
</tr>
<tr>
<td>Library Classes</td>
<td>10</td>
</tr>
<tr>
<td>Attendance</td>
<td>10</td>
</tr>
<tr>
<td>Individual Critique of U Design Team Project</td>
<td>15</td>
</tr>
</tbody>
</table>

**U Design Project: Team Assignments and Presentation 100 points**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Memo 1: Design/Research Proposal</td>
<td>10</td>
</tr>
<tr>
<td>Team Memo 2: Technology</td>
<td>10</td>
</tr>
<tr>
<td>Team Memo 3: Design, Technology, and Sustainability</td>
<td>10</td>
</tr>
<tr>
<td>Team Memo 4: Ethics and Policy</td>
<td>10</td>
</tr>
<tr>
<td>Team Presentation (20 minutes)</td>
<td>60</td>
</tr>
</tbody>
</table>

**Grade Scale**

- A = 93 and above
- A- = 90-92
- B+ = 87-89
- B = 83-86
- B- = 80-82
- C+ = 77-79
- C = 73-76
- C- = 70-72
- D+ = 67-69
- D = 63-66
- D- = 60-62
- E = 59 or below

Attendance: Number of Absences = Points for attendance grade

<table>
<thead>
<tr>
<th>Absences</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7-8</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>