ENGR 3010: OVERVIEW

• Collaboration between Philosophy Department and ECST to create a more robust professional ethics course
  • From a 1.0 to 3.0 unit course
  • Team-taught by philosophy and engineering professors
  • Required for all third-year CE, EE, and ME majors
  • Writing intensive
  • Satisfies GE Block C-2 (Humanities)

• The course meets the following ABET outcomes
  • (F): “Understanding of ethical and professional responsibilities.”
  • (G): “Proficiency in written communication.”
  • (J): “Understanding of current issues in the field.”
COURSE LEARNING OUTCOMES

• Demonstrate understanding of ethical theory, including utilitarianism, deontology (respect for persons), virtue theory, and ethics of care.

• Demonstrate an ability to apply theories in case studies of ethics in engineering and their impact on society.

• Demonstrate well-honed and sophisticated critical thinking and composition skills.

• Demonstrate fundamental rhetorical strategies used to produce university-level writing.

• Demonstrate enhanced communication skills in both written and oral formats.
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<tr>
<th>SO</th>
<th>Performance Indicator</th>
<th>Tools for Direct Assessment</th>
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<tr>
<td>ABET f</td>
<td>F1. Knowledge of ethical theories applicable to engineering professional practice</td>
<td>Engr 3010 (Ethics Class): Quiz (ETH-Q)</td>
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<td>F2. Ability to apply ethical reasoning in scenarios related to engineering</td>
<td>Engr 3010 (Ethics Class): Essay (ETH-EE)</td>
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<td>ABET g</td>
<td>G1. (Written) Ability to develop well-organized technical report</td>
<td>Senior Design: Final Report (SD-R)</td>
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<td>G2. (Written) Ability to properly format report and minimize grammar/spelling errors</td>
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<td>G3. (Oral) Ability to present technical design to a broad audience</td>
<td>Senior Design: Final Presentation (SD-P)</td>
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<td>G4. (Written) Ability to communicate in writing to a general audience</td>
<td>Engr 3010 (Ethics Class): Essay (ETH-EE)</td>
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<td>I2. Ability to set up short- and long-term career plans</td>
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<td>ABET j</td>
<td>J1. Ability to analyze current issues in ethical/professional framework</td>
<td>Emgr 3010 (Ethics Class): Essay (ETH-EE)</td>
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<td></td>
<td>J2. Awareness of current events and its impact</td>
<td>Senior Design: Essay on current events (SD-E)</td>
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<td>J3. Recognition of the connection between contemporary issues and engineering fields</td>
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Figure 2 – Distribution of scores associated to average ABET F performance for BSEE 2016-2017 observed in direct assessment. 98% of students have score 3 or 4 for outcome F1, 95% for outcome F2. Overall, 96% for outcome F.
Figure 3 – Distribution of ABET G performance for BSEE 2016 - 2017 observed in direct assessment
Figure 4 – Distribution of ABET J performance for the BSEE 2016-2017 through direct assessment. 93% of students have score 3 or 4 for outcome J1, 94% for outcome J2, 80% for outcome J3. Overall, 89% for outcome J.
USING ASSESSMENT TO IMPROVE COURSE

- Faculty planning retreat to create action plan
- More accessible readings => improve reading skills => improve writing skills
  - Reading summaries are consistently assigned to promote accountability and writing proficiency
- We track multiple categories relevant for ABET by using Moodle quizzes
  - Ethical Theory (F1) Applied Reasoning (F2), Sustainability, Public Policy, Leadership, Project Management
- Research paper topics are always current issue: DAPL, data falsification, bridge collapse, border wall.
  - Provide in-class workshops + require peer-review exercise
The peer-editing exercise is mandatory, structured, takes place in class.

- **THESIS:** In the introduction did the writer provide a structured thesis statement? Did it clarify the sub-arguments of the paragraphs that support and develop the main argument of the thesis? How might the structured thesis be improved?

- **WRITERS:** How do you as the writer intend to change your essay, based on your peer-editing partner’s feedback? Give a specific example of feedback and how you will use it to improve the paper.
CREDITS

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