Course Overview: The Culture of the Engineering Profession is designed to engage you in thinking critically, theoretically, empirically and historically about serious issues that confront professional engineers. Course goals and objectives critical ABET, Inc. standards (formally the Accreditation Board for Engineering and Technology) for professional engineers and prepare you to work in engineering organizations, professional organizations and the academy.

The course, taught in seminar style, requires participants to explore issues like professional ethics and social impacts of engineering interventions by examining cases, circumstances, readings and inventions that express the decisions engineers make on a daily basis.

Content is focused around three specific course goals: teach students to consider the consequences of engineering decisions and interventions; equip students with the framework to investigate culture-related issues of unintended consequences, professional ethics, and organizational cultures; and equip students with communication skills sufficient to convey their ideas and findings to various professional audiences.

In addition, course activities revolve around several specific objectives that apply to all assignments. You will learn to

1. Recognize and understand indicators of organizational culture and recognize how they affect decision-making and implementation.
2. Master standards for engineering ethics and apply them to situations of data, intellectual property and decisions that practicing engineers make every day.
3. Research, analyze and consider the social, community and global impacts that engineering interventions create (and have generated) in society.
4. Consider the concept of half-life of knowledge, especially as applied to your discipline.
5. Frame and explore problems of various types and recognize this capacity is fundamental to progress and change.
6. Select, match and use evidence compellingly in making the case for an argument or idea.
7. Identify the characteristics of different audiences and use appropriate communication strategies to meet the needs and desires of each target audience.
8. Work with others as colleagues to complete, improve and present findings and products.
9. Use best practices for a variety of writing and oral communication issues, including visuals, internal reports, writing for more than one audience and oral presentations.

ABET Competencies Addressed:
- Ability to function on multidisciplinary teams (d).
- Ability to identify, formulate and solve engineering problems (e).
• Understanding of professional and ethical responsibility (f).
• Ability to communicate effectively (g).
• The broad education necessary to understand the impact of engineering solutions in a global and societal context (h).
• Recognition of the need for and an ability to engage in life-long learning (i).
• Knowledge of contemporary issues (j).

**Texts:** The texts for this semester are the following items:
- **Collapse: How Societies Choose to Fail or Succeed** – ISBN 0-14-303655-6
- **Invention by Design** by Henry Petroski -- ISBN 0-674-46368-4
- **Salt Sugar Fat** by Michael Moss -- ISBN: 978-1-4000-6980-4

In addition, there are a series of readings that will be distributed in class, placed on reserve in the library or distributed electronically. Reading assignments will be made, in advance, for discussion in class and for use in written assignments. Additionally, you and a partner or two will be assigned (randomly) one of several books for a short project that “maps” the interventions made by the subject engineer. These books may be borrowed from Professor Rice.

**Teaching Assistant:** We have an excellent Teaching Assistant (TA) who will be helping with course management, providing feedback on assignments, and answering your questions. She will work in 104 Whitehead Hall each week; consider her your first source of information for questions and advice.

**Assignments:** You will complete a set of written and other communication assignments during this semester. Expect to produce about 25 pages of final copy as well as several presentations (all assignments included) for class. Written directions for each assignment will be distributed and discussed in class. Each Assignment Sheet includes information about due dates, product specifications, grade value of products, and grading criteria. You will complete at least two assignments as collaborative projects as explained on the Assignment Sheet for that work.

Here is a brief description of some of the assignments:
1. Briefing report on how and what communication -- writing, speaking, e-mail, oral presentations in the engineering discipline, both individually and on work teams.
2. Case analysis on an ethics issue related to engineering -- this work will be original and not based upon an existing ethics case study.
3. Cartoon -- you will present an ethical issue in cartoon or visual form depicting the issue of stakeholder inequality.
4. Team chapter discussion – you will lead a class discussion of one of the critical chapters from one of the assigned texts.
5. Comparative analysis -- of engineering organizational cultures.
6. Mapping project (and critique) -- from one of the randomly assigned books or materials about inventions; you will be asked to indicate the inventor’s impact on other inventors, other disciplines and on society as a poster.
7. Mini-proposal -- for a research project that will become your Technical Report.
8. Formal technical report (and final project) -- developed from your mini-proposal.
While your instructor reserves the right to adjust assignments and their values, you may expect our assignments and their value to be as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tr>
<td>Briefing report on communication</td>
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<tr>
<td>Ethics case analysis</td>
<td>10%</td>
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<tr>
<td>Political cartoon</td>
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<tr>
<td>Monograph analysis</td>
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<tr>
<td>Mapping assignment/poster</td>
<td>10%</td>
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<tr>
<td>Poster critique</td>
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<tr>
<td>Comparative analysis of engineering organization cultures</td>
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<tr>
<td>Team chapter discussion</td>
<td>5%</td>
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<tr>
<td>Proposal memo/bibliography</td>
<td>10%</td>
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<tr>
<td>Analysis and presentation on impacts of engineering intervention</td>
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<tr>
<td>Participation</td>
<td>5%</td>
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**Grades:** Grades are assigned for class participation (exercises, assignment activities, workshops, and discussion), presentations, draft copy, editorial comments, revision, and final copy. Further, the final semester grade is influenced by evidence of growth, based on written work. Expect some in-class writing, especially in response to draft copy from classmates.

Each assignment is graded, based on criteria for that assignment. Assignments carry individual weights toward your final grade with individuals weights indicated on each Assignment Sheet. Typically your papers are returned for consideration within two weeks and/or before the next product is due.

You may re-write any one assignment in an effort to improve the grade you earned; your final grade for that assignment becomes the average of the two marks. Re-write means major revision and involves rethinking and reworking papers rather than just correcting grammar mistakes. Re-writing activities include meeting with your instructor, preparing a written plan for the revision and producing final copy. Note that your instructor reserves the right to substitute an alternative assignment as your rewrite opportunity. Rewrites are due not later than the last day of classes.

Normally a grade of "Incomplete" is not available; if a problem arises, please see me and we will work on the issues.

The penalty for plagiarism is an automatic "F" and possible dismissal from the University. We will discuss the meaning of the term in class.

**Academic Integrity/Ethics:** The strength of the University depends on academic and personal integrity. In this course you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, forgery and falsification, lying, facilitating academic dishonesty and unfair competition.

You will complete some assignments with a colleague. Other assignments you must complete independently. Most “final copy” of papers must be completed independently. However, on several assignments, part of your grade is determined by the quality of feedback you provide to another classmate. You need not accept the feedback another classmate gives you on the draft, but you must consider it as well as provide written feedback on another student’s paper. The expectations for different assignments are explained on the Assignment Sheets.
You must reference sources of information in your papers. We will discuss guidelines for references in class.

Report any violations of academic integrity that you witness to your instructor. See the guide on “Academic Ethics for Undergraduates” at the following address: [http://e-catalog.jhu.edu/undergrad-students/student-life-policies/](http://e-catalog.jhu.edu/undergrad-students/student-life-policies/).

**Conferences:** Informal or scheduled visits are welcome anytime during office hours. Expect to have at least one scheduled, required conference sometime during the semester.

**Papers:** Papers must be printed by laser or inkjet and submitted on appropriate paper for the kind of product you are writing. Most copy will be submitted on 8 1/2” x 11” paper with 1” margins on all sides. Place your name and appropriate identification on each page. Staple pages together rather than use a binder. Back up your work and keep a copy of each paper for your records. Your graded papers will be returned for your examination and as part of a general class discussion. Note on the Assignment Sheets how many copies of any given assignment you must submit; expect to submit more than one copy of some draft materials.

If you submit any assignments electronically, kindly put your name and some identifier for the assignment in the *filename* like this example: JaniceLuAssign#1.doc.

**Due Dates:** Writing products and presentation materials are due as class begins on the date indicated on the Assignment Sheet. Late (which means anytime after class activities have begun) papers will be marked down one letter grade for each missed class. Draft materials also are required for several assignments; appropriate information is noted on individual Assignment Sheets and discussed in class. Papers will not be due on religious holidays you observe.

**Writing Assistance:** You will find a tutor to help you with a specific skill, a grammatical problem, or provide a general reaction to your draft at the JHU Writing Center. The phone number is (410) 516-4258 or via email at writingcenter@jhu.edu. If you request or if your instructor determines that you need ESL assistance, you will be referred to an ESL tutor provided by the Center For Leadership Education.

**Attendance and Participation:** Class attendance and participation are required. If you are late to class, please enter quietly. Also remember to turn off cell phones until class is over. During class, please participate in the discussions and exercises.

**Accommodating Students with Disabilities:** The University and your instructor are committed to provide appropriate accommodations for students with documented disabilities. Turn in documentation and register with the Associate Director for Disability Services, Garland Hall, Suite 130, and (410) 516-8949. Notify me of your special needs early in the semester. If issues occur during the semester, please bring information within two weeks.

**Class Schedule:** The class schedule describes how we will spend our time together this semester. Note the due dates for assignments. While the schedule may change due to class dynamics and your instructor reserves the right to change this schedule, use the draft to plan your semester activities. The schedule is distributed as a separate sheet.