Course Description:

Official Description: The impact of triple bottom line thinking on the engineering profession, including economic, environmental, and social responsibility. The ethical and legal responsibilities of engineers. The role of the engineering profession in the social control of technological change.

Our personal vision for the course: You'll leave with a better understanding of how the world is interconnected and a clearer idea of how you want to contribute, both personally & professionally.

Instructor: Brian W. Baetz, PhD, P.Eng., FCSCE
Professor of Civil Engineering
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JHE-119

Communication: Students will be expected to use Avenue to Learn for course communications and also for assignment submissions. It is the student’s responsibility to stay informed and on top of deadlines.

Learning Objectives – By the end of this course, students should be able to (bracketed numbers relate to CEAB graduate attributes for program accreditation):

1. Identify and analyze the essential characteristics of a complex problem from a sustainability perspective, including its ethical dimensions, risks, and uncertainties. (GA 4, 13)
2. Feel and explain a sense of respect for diversity, the environment, and past, present, and future generations in all engineering decisions. (GA 9)
3. Identify professional ethical dilemmas and competing stakeholder interests and develop conscientious, well-reasoned, professional responses. (GA 10.1, 10.2, 10.3)
4. Identify and quantify short and long-term impacts of engineering on a scale ranging from the local to the global. (GA 9)
5. Detect patterns, connections, and relevant data, and then apply that knowledge to synthesize original thoughts and solutions. (GA 13)
6. Devise creative solutions to overcome opposing needs by collaborating with designers and experts of all disciplines to incorporate a variety of social, economic, and environmental perspectives. (GA 13)
7. Communication skills for effective teamwork, influence, and effectiveness. (GA 10)
8. Thoughtfully consider personal and professional choices and career contributions. (GA’s 8,9,10,11)
Grading

- In-class Quizzes Relating to Professional Practice Exam 30%
  (12 quizzes total at 3% each – potential for 6% bonus)
- Blogbook (including weekly assignments and regular write-ups) 40%
- Inquiry Paper 30%
  (done in a three week period, with your choice of early, intermediate or later periods, on a first-come signup basis)

DETAILED SCHEDULE

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<thead>
<tr>
<th>WEEK</th>
<th>Lecture Topic</th>
<th>Assignment Due Date</th>
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<tbody>
<tr>
<td>1</td>
<td>Classics and Principles of Sustainability</td>
<td>Wed., Sept. 13</td>
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<td>2</td>
<td>Resiliency vs. Sustainability</td>
<td>Wed., Sept. 20</td>
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<td>3</td>
<td>Systems Thinking</td>
<td>Wed., Sept. 27</td>
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<td>4</td>
<td>Urban Form</td>
<td>Wed., Oct. 4</td>
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<td>5</td>
<td>Happy City/Compassionate City/Equitable City</td>
<td>Wed., Oct. 18</td>
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<td>6</td>
<td>Scale/Local Economies</td>
<td>Wed., Oct. 25</td>
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<td>7</td>
<td>Public Infrastructure – Transportation</td>
<td>Wed., Nov. 1</td>
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<td>8</td>
<td>Public Infrastructure – Energy and Water</td>
<td>Wed., Nov. 8</td>
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<td>9</td>
<td>Green Building</td>
<td>Wed., Nov. 15</td>
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<td>10</td>
<td>Automation/Artificial Intelligence</td>
<td>Wed., Nov. 22</td>
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<td>11</td>
<td>Human-Centered Design</td>
<td>Wed., Nov. 29</td>
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<td>12</td>
<td>Deep Ethics</td>
<td>Wed., Dec. 6</td>
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Policy Reminders:
The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as soon as possible.

Attention is drawn to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty as found in the Senate Policy Statements distributed at registration and available in the Senate Office. Any student who infringes one of these resolutions will be treated accordingly to the published policy.

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at: http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf
The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group work or individual assignments.
3. Copying or using unauthorized aids in tests and examinations.

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term to note any changes.

Instructors cannot be certain that a communication sent by email is from a student unless it comes from a valid McMaster address. Instructors reserve the right to refuse to respond to any queries made from alternative email accounts (Hotmail, Gmail, Cogeco, etc.). In addition, all official course announcements will either be posted on Avenue to Learn or emailed to valid McMaster accounts. It is the responsibility of the student to ensure that they activate their email account, check it regularly, and ensure that they do not exceed their allocated disk space for storing email.