Course Description:
This course introduces students to contemporary technologies in a specific field of mechanical engineering – this section will focus on energy and the environment. In the process of exploring these technologies, the course teaches and applies skills related to communication, economic analysis, ethical analysis, and explores the positive and negative effects of technologies on our society and environment. Specific attention is focused on current events both domestically and internationally.

Co-requisite:
MECE-499 Cooperative Education

Course Learning Objectives:
At the end of this course, you should be able to:
1. Explain how specific engineering solutions in the energy industry have impacted the environment, economy, and society.
2. Demonstrate an ability to make informed ethical choices.
3. Identify important contemporary regional, national, or global problems involving energy engineering.
4. Critically review the social, technical, economic, and political aspects of an emerging technology option.
5. Demonstrate skills required for independent learning.
6. Identify, utilize, and evaluate sources of information (including colleagues, faculty, experts, websites, journals, books, etc.)
7. Communicate effectively in both written and oral forms.

Textbook and Other Required Materials:
Sustainable Energy by Richard Dunlap, 2nd ed., 2018
All common content and some energy specific readings will be posted on myCourses.

Class Schedule & Location:
Mon 1:00 – 1:50 pm, Gosnell - 1250 (On Mondays, all sections of MECE-348 meet together)
Wed & Fri 1:00 – 1:50 pm, Gleason - 2139 (just the Energy & Environment section)

Instructor Contact:
Dr. Rob Stevens,
Office: ENG 9-2167, Phone: 475-2153, Email: riseme@rit.edu

Office Hours:
Mondays & Fridays: 12 - 1 pm and Wednesday 2 - 4 pm
For my office hours, I have an “open door” policy: although my door may not be physically open, you are welcome to knock at any time. If I am free, I will be happy to talk with you.

Grading:
The grading scheme for the course is listed below. All items within a category are weighted equally.

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<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>10%</td>
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<tr>
<td>Discussions</td>
<td>30%</td>
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<tr>
<td>Problem Sets</td>
<td>40%</td>
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<tr>
<td>Final Paper / Presentation</td>
<td>20%</td>
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Details about the grading of specific assignments will be posted on myCourses.

Quizzes:
The lectures will require some reading to be done before class. These will be provided through myCourses. Quizzes will be given weekly as encouragement to complete the readings and absorb the content delivered by
in-class lecture, posted presentation, video lecture, or any combination. The quizzes will be designed to be easy if you paid attention and difficult if you did not. The quizzes are “open-book” and you are permitted to discuss the quizzes. The lowest quiz grade will be dropped.

Discussions:
Discussions, which will be conducted both in class and through the Discussion forums in myCourses, will be a significant part of this course. As a general rule, we will have an online discussion every two weeks of the semester. Each student’s grade for the discussion portion of the final grade will be assessed using a rubric that will be posted to myCourses. Expectations of student participation are also posted to the General Course Content section of myCourses. Discussions are a substantial part of the course grade and should be a substantial part of the time that you dedicate to this course. You are expected to make timely and meaningful online post and actively participating during weekly in-class discussion sessions. Most discussions will also require a group summary.

Problem Sets:
Every two weeks, an individual problem set will be assigned. These will be more similar to the problem sets that you have completed in engineering core courses, but the specific assignments within the problem sets will not all be quantitative. These should be submitted to the Dropbox on myCourses as a single PDF document by the posted due date. The due dates of the problem sets and discussions will alternate weeks.

Final Project:
Each student will complete research with one or two collaborators to create a written report and give a presentation on a relevant Contemporary Issue of their choosing. This may or may not be related to a topic that we cover in class. At the minimum, these projects must reference adequate sources, summarize the current status of the field, and include some discussion of social, policy, and environmental impacts and economic analysis.

Class/Lab Schedule:
3 one-hour lecture sessions per week for 14 weeks

Contribution of Course to Meeting Professional Component:
College Level Mathematics and Basic Sciences = 0 credits
Engineering Topics = 3 credits
General Education = 0 credits

Prepared by: MBB, WAH & RJS
Date: August 2018