Please fill in all information. Required signatures are on page two of this form. Please return to Academic Affairs Committee, Office of the Provost, Anderson Hall, 2nd Floor.

Contact Person: JOE KING Phone: 946-3072

Date: MAY 3, 2006  School or College: SOECS  Department: COMPUTER

Proposed Course #: ENGR 30  Title: ENGINEERING ETHICS AND SOCIETY

Units: 3  Enrollment/Expected Enrollment: 40  Grade Option:

Prerequisites: NONE

Catalog description: Major engineering achievements are explored with an emphasis on ethical principles and the global impact these achievements have on society and the environment. Societal needs, personal rights, whistle blowing, conflicts of interest, professional autonomy, risk assessment, sustainable development and the application of engineering codes of ethics. Contemporary technological controversies are examined along with future developments that require engineers to stay current in their field. Student participation is expected in classroom discussions, oral presentations, and written analyses. Please attach a syllabus.

What are the reasons for the new course (e.g., student needs, major, etc.):
Need to reconcile Pacific's requirement that all students take Mentor III with ABET's requirement that all engineering students study ethics, society, and environmental issues.

If approved, when will this be implemented?
SPRING, 2007

What is the anticipated impact on resources (e.g., Faculty, funds, library materials etc.):
NONE

Describe any special facilities, furnishings, or technology needs. List software needs, if any.
NONE
### Approval Process

Please obtain all signatures before submitting to Academic Affairs Committee. Please acquire signatures in the order in which they are listed below.

<table>
<thead>
<tr>
<th>Action by:</th>
<th>Approved by:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Action by department requesting addition/change:</td>
<td>[Signature]</td>
<td>9-6-06</td>
</tr>
<tr>
<td>2. Action by the Curriculum and/or Graduate Studies Committee of the School/College:</td>
<td>[Signature]</td>
<td>9/8/06</td>
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<tr>
<td>3. Action by the Dean of the School/College:</td>
<td>[Signature]</td>
<td>9-6-06</td>
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<tr>
<td>4. Action by the General Education Committee (as appropriate): with modifications discussed</td>
<td>[Signature]</td>
<td>10/13/06</td>
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<tr>
<td>5. Action by the Dean of the Library:</td>
<td>[Signature]</td>
<td>10/18/06</td>
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<tr>
<td>6. Action by the Director of Educational Technology Services (if computer lab needed):</td>
<td>N/A</td>
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<tr>
<td>7. Action by the Graduate Studies Committee (as appropriate):</td>
<td>N/A</td>
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<tr>
<td>8. Action by the Registrar (to check course number, etc.):</td>
<td>[Signature]</td>
<td>10-24-06</td>
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<tr>
<td>9. Action by the Academic Affairs Committee:</td>
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</tbody>
</table>

After approval by the Academic Affairs Committee, information regarding new, revised, or deleted courses is sent to the Registrar for listing in or modifying the catalog.

Form revised 9/4/03
ENGR 30 – Engineering Ethics and Society – Rationale

ENGR 30. Engineering Ethics and Society (3) Major engineering achievements are explored with an emphasis on ethical principles and the global impact these achievements have on society and the environment. Societal needs, personal rights, whistle blowing, conflicts of interest, professional autonomy, risk assessment, sustainable development, and the application of engineering codes of ethics. Contemporary technological controversies are examined along with future developments that require engineers to stay current in their field. Student participation is expected in classroom discussions, oral presentations, and written analyses.

Proposed for Area II-B (Fundamental Human Concerns)

General Criteria

1. Engineering Ethics and Society is designed for a general audience. In spite of the term “engineering” being in the title, the course has no prerequisites and assumes no knowledge of engineering concepts or principles. The intent of the course is to bring together students of all disciplines to discuss, and write about, how engineering practices and technological developments impact individuals, societies, cultures and the environment. An emphasis is placed on how ethical principles can and do bear on the decisions on how and where engineering and technology are used. Clearly, the more diversified the class membership, the better. We do not want classes dominated by engineers; we want our engineers exposed to other kinds of thinkers.

2. The course includes weekly assignments in which the students write about their opinions on the application of engineering and technology to the problems of the past and present. These assignments will emphasize critical thinking and analysis. Students will be required to participate in classroom discussions and give oral presentations.

3. The course is worth three units.

Specific Criteria for Category II-B

1. This course helps students develop an informed perspective on issues involving culture, society, and the environment. Students are also exposed to, and helped to understand, the perspectives of others.

2. This course examines the impact of engineering and technology on societies, cultures, and the environment from a historical, as well as modern, point of view. It is expected that the philosophical, and even religious, views of the students will bear on the opinions they present in their classroom discussions and in the papers they write.

3. This course requires the students to demonstrate, in written and oral presentations, their knowledge and understanding of the issues discussed in the course.
ENGR30 - Engineering Ethics and Society -- Syllabus

COURSE DESCRIPTION
ENGR30, Engineering Ethics and Society (3) Major engineering achievements are explored with an emphasis on ethical principles and the global impact these achievements have on society and the environment. Societal needs, personal rights, whistle blowing, conflicts of interest, professional autonomy, risk assessment, sustainable development, and the application of engineering codes of ethics. Contemporary technological controversies are examined along with future developments that require engineers to stay current in their field. Student participation is expected in classroom discussions, oral presentations, and written analyses. Prerequisites: None.

General Education Category II-B.
Offered in the spring.

COURSE OBJECTIVES

The objectives of this course are to:

1. Teach students the circumstances, people, and events that led to the development of modern technology.
2. Describe to students the past and present global effects on societies, cultures, and the environment caused by development and the possible effects of future technologies.
3. Help students understand the ethical responsibilities of engineers as they lead the way in the development and application of engineering and technology.
4. Encourage students to continue their education and be adaptable as they and their profession deal with issues such as new technologies, globalization, and governmental regulations.
5. Teach students to recognize, comprehend, clarify, and critically assess arguments on opposing sides of ethical issues encountered in the application of engineering and technology.
6. Help students develop the ability to use rational dialogue in resolving ethical conflicts encountered in engineering.
7. Teach students to be sensitive to genuine difficulties and subtleties, including a willingness to understand that there is often some uncertainty in making troublesome ethical judgments or decisions in engineering as it relates to individuals, societies, cultures, and the environment.

Applicable subset of the ABET a through k criteria
(d) an ability to function on multi-disciplinary teams
(f) an understanding of professional and ethical responsibility
(g) an ability to communicate effectively
(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
(i) a recognition of the need for, and an ability to engage in life-long learning
(j) a knowledge of contemporary issues
UNIVERSITY OF THE PACIFIC GENERAL EDUCATION PROGRAM COURSE PROPOSAL FORM

Submit this course proposal form with a syllabus, rationale, and assessment plan to the Director of General Education.

Name of faculty member proposing course: Joe King

School/Department: SOECS

Course number and title: ENGR30 Engineering Ethics and Society

Course prerequisites: None

Unit value of course: 3 Normal class size: 35 Maximum class size: 55

Is this course recommended for freshmen? Yes No

Proposed audience (please circle): Freshmen Sophomores Juniors Seniors

Attachments

Attach a rationale which explains how and why the course satisfies both the general criteria for all General Education courses and the specific criteria for the Liberal Learning area for which the course is proposed.

Attach a course syllabus with learning objectives. Most of the learning objectives should relate to the general and specific criteria of the General Education Program.

Proposed General Education Liberal Learning Area (circle only one):

<table>
<thead>
<tr>
<th>I. The Individual and Society</th>
<th>II. Human Heritage</th>
<th>III. Natural World and Formal Systems of Thought</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-B: Society and Culture in the United States</td>
<td>II-B: Fundamental Human Concerns</td>
<td>III-B: Formal Systems of Thought</td>
</tr>
<tr>
<td>I-C: International or Intercultural Studies</td>
<td>II-C: Practice and Perspective in the Visual and Performing Arts</td>
<td>III-C: Science, Technology and Society</td>
</tr>
</tbody>
</table>

Approved by the General Education Committee: Chairperson Date 10/13/06
ENGR 30 -- Engineering Ethics and Society -- Rationale

ENGR30. *Engineering Ethics and Society* (3) Major engineering achievements are explored with an emphasis on ethical principles and the global impact these achievements have on society and the environment. Societal needs, personal rights, whistle blowing, conflicts of interest, professional autonomy, risk assessment, sustainable development, and the application of engineering codes of ethics. Contemporary technological controversies are examined along with future developments that require engineers to stay current in their field. Student participation is expected in classroom discussions, oral presentations, and written analyses.

Proposed for Area II-B (Fundamental Human Concerns)

General Criteria

1. *Engineering Ethics and Society* is designed for a general audience. In spite of the term "engineering" being in the title, the course has no prerequisites and assumes no knowledge of engineering concepts or principles. The intent of the course is to bring together students of all disciplines to discuss, and write about, how engineering practices and technological developments impact individuals, societies, cultures and the environment. An emphasis is placed on how ethical principles can and do bear on the decisions on how and where engineering and technology are used. Clearly, the more diversified the class membership, the better. We do not want classes dominated by engineers; we want our engineers exposed to other kinds of thinkers.

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3. This course requires the students to demonstrate, in written and oral presentations, their knowledge and understanding of the issues discussed in the course.
Instructor: Joe King, Web site, Anderson Hall 202

Class Meetings: Tuesdays & Thursday, Hours: TBA

Course Description: ENGR30. Engineering Ethics and Society (3) Major engineering achievements are explored with an emphasis on ethical principles and the global impact these achievements have on society and the environment. Societal needs, personal rights, whistle blowing, conflicts of interest, professional autonomy, risk assessment, sustainable development, and the application of engineering codes of ethics. Contemporary technological controversies are examined along with future developments that require engineers to stay current in their field. Student participation is expected in classroom discussions, oral presentations, and written analyses. Prerequisites: None. (Spring)


The objectives of this course are to:

1. Teach students the circumstances, people, and events that led to the development of modern technology.
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(d) an ability to function on multi-disciplinary teams
(f) an understanding of professional and ethical responsibility
(g) an ability to communicate effectively  
(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context  
(i) a recognition of the need for, and an ability to engage in life-long learning  
(j) a knowledge of contemporary issues

**Topics Covered:** Personal versus business ethics; The origins of ethical though; Ethics and the law; Ethics problems versus design problems; Professionalism and codes of ethics; Understanding ethical problems; Ethical problem-solving techniques; Risk, safety, and accidents; The rights and responsibilities of engineers; Ethics in research and experimentation; Doing the right thing.

**More Specific Objectives:** To teach students to:

1. Recognize the importance of retaining their knowledge of basic math and science  
2. Recognize the importance of retaining their knowledge of basic engineering principles  
3. Recognize the importance of having a basic knowledge of geography  
4. Have a basic knowledge of engineering history  
5. Understand the importance of ethics  
6. Understand the impact of engineering solutions in a global and societal context  
7. Understand the impact of engineering solutions on the environment  
8. Understanding their professional and ethical responsibilities  
9. Understand the importance of dealing with liability risk when doing engineering design  
10. Communication effectively in written and oral form  
11. Recognize the importance of engaging in lifelong learning  
12. Recognize the importance of having a basic knowledge of contemporary issues

**Applicable subset of the ABET a through k criteria**  
(f) an understanding of professional and ethical responsibility  
(g) an ability to communicate effectively  
(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context  
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ENGR 30 - Engineering Ethics and Society - Grading

YOUR SEMESTER GRADE DEPENDS ON:

- Participation: (30%)
  **One-question quizzes will be given daily at the start of class.** They will be based on the reading assignment for that day. If there is no reading assignment, the quiz will be on the material covered in the last class meeting. You will receive half credit for wrongly answered quizzes.

  Your 2 lowest quizzes will be dropped. NO QUIZ MAKE-UPs! (Dropping your 2 low quiz grades is NOT done to raise grades. It's purpose is to allow you to miss up to 2 class meetings with no penalty.)

  All students are expected to attend all class meetings. Time permitting, every student will participate in every discussion. This discussion/participation in VERY important! I will **note the fact that you cannot answer a question on the reading.** No big deal if you can't answer a question once in a while, but if you can't answer any questions....

- Weekly SHORT Papers: (worth 20%)
  - A **TYPED** 500-word (give or take), 1-page (no more!) paper will be due nearly every Friday, always at the START of class. The topics will come from the discussions and/or readings of that week. Due dates are listed in the "Schedule" web page. The papers will be graded for content, grammar, style, and especially uniqueness (lack of similarity to anyone else's paper). At least one of these papers will be replaced by an oral presentation. Late work will be accepted for half credit until noon on the last day the class meets; however, no more than two pieces of work will be accepted on that last day.

- Two Tests: (worth 30%)
  There will be two 1-hour tests, distributed evenly throughout the course. Each test is worth 15% of your final grade. **Tests consist of closed-book questions on the course material.**

- Final Exam: (worth 20%)
  The final exam will be comprehensive, covering all topics covered during the semester.

GRADING POLICY:

- A: 90 - 100%
- B: 80 - 90%
- C: 70 - 80%
- D: 60 - 70%
- F: 0 - 60%

Grades within 2% of a border will be assigned a plus or minus accordingly.