Computer Engineering 4096: Computer Engineering Senior Project I
Prior Number - Computer Engineering 391

Credit and Contact Hours
1 credit hour lecture (One 50-minute session per week and one 50-minute seminar per week are typical).

Instructor

Text(s)
No required text, handouts

Course Information
Course Description
A complete design cycle. Working in small teams, students will design, document, analyze, implement and test a product. Topics include: Iteration in design, prototyping, group dynamics, design reviews, making effective presentations, concurrent design, designing for test, ethics and standards, testing and evaluation.

Prerequisites
Statistics 3117 (217), Economics 1100 (121) or 1200 (122), English 3560 (160), Speech 1185 (85), Computer Engineering 2210 (111), Computer Engineering 3110 (215), Computer Engineering 3150 (213), Computer Engineering 3151 (214), Electrical Engineering 2200 (121).

Required or Elective
Required for computer and electrical engineering majors
Co-listed with Electrical Engineering 4096 (391)

Course Goals
General Outcomes
1. Understand the engineering design process
2. Recognize ethical issues in engineering and methods to resolve them
3. Recognize means of protecting intellectual property
4. Develop and write a proposal to solve a design problem
5. Effectively present team proposal to a group of peers and supervisors
6. Complete a (simple) engineering design project
7. Plan for graduate school and their career
8. Understand leadership skills required for success in engineering
Relationship of Course to Program Outcomes

<table>
<thead>
<tr>
<th>ECE Outcome</th>
<th>Course Outcome</th>
<th>Comments</th>
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<tbody>
<tr>
<td>a</td>
<td>S S S</td>
<td>Students develop and complete an engineering design</td>
</tr>
<tr>
<td>b</td>
<td>M</td>
<td>Students must debug/test their project</td>
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<tr>
<td>c</td>
<td>S S S</td>
<td>Students develop and complete an engineering design</td>
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<tr>
<td>d</td>
<td>S S S W</td>
<td>Projects are performed in teams. Some are interdisciplinary.</td>
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<td>e</td>
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<td>S M M</td>
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<tr>
<td>g</td>
<td>S S</td>
<td>Students write and present their proposals</td>
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<td>h</td>
<td>M W M</td>
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<tr>
<td>i</td>
<td>M S W</td>
<td>Most designs require independent learning</td>
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<td>j</td>
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<td>k</td>
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<td>l</td>
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S – strong connection; M – medium connection; W – weak connection

Topics Covered
1. Engineering design process (3 weeks)
2. Intellectual property (1 week)
3. Writing and revising the proposal (1 week)
4. Effective presentations (1 week)
5. Ethics (1 week)
6. Creativity (1 week)
7. Project management, working in teams (1 week)
8. Project development hints (PCB design, components, etc) (2 weeks)
9. Project team proposal presentation (4 weeks)