CME 330 Principles of Engineering for Chemical Engineers

Credits and Contact Hours: 3 credits; 2 hours and 40 minutes

Course Instructor: Dr. Thomas A. Butcher

Text(s): FE Review Manual, Michael R. Lindeburg, 2006, 2\textsuperscript{nd} Edition

Specific course information

a. Solving problems in engineering statics and dynamics, mechanics of materials, engineering economics, and electrical circuits. 
b. U3 or U4 standing in CME major 
c. This is a required course for the CME program.

Specific goals for the course:
The students will have an understanding of the fundamental principles in the targeted focus areas and the ability to apply these in engineering practice.

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<tr>
<th>b. Criterion 3 a-k: Outcomes</th>
<th>% contribution</th>
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<tbody>
<tr>
<td>a. Ability to apply knowledge of math, engineering, and science</td>
<td>20%</td>
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<td>b1. Ability to design and conduct experiments</td>
<td>15%</td>
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<td>b2. Ability to analyze and interpret data</td>
<td>15%</td>
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<td>c. Ability to design system, component or process to meet needs</td>
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<td>d. Ability to function on multi-disciplinary teams</td>
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<td>e. Ability to identify, formulate, and solve engineering problems</td>
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<td>k. Ability to use techniques, skills, and tools in engineering practice</td>
<td>15%</td>
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<td>Any other outcomes and assessments?</td>
<td>100%</td>
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Brief list of topics to be covered (including exams/quizzes):

Week 1: Systems of Forces and Trusses 
Week 2: Pulleys, Cables, and Friction 
Week 3: Centroids and Moments 
Week 4: Kinematics 
Week 5: Kinetics 
Week 6: Kinetics of Rotational Motion 
Week 7: Energy and Work 
Week 8: Stress and Strain 
Week 9: Thermal, Hoop, and Torsional Stress 
Week 10: Beams 
Week 11: Columns 
Week 12: Engineering Economics 
Week 13: Electrostatics
Week 14: DC Circuits
Week 15: AC Circuits