CIEG 125 Introduction to Civil Engineering

Mondays, 3:35 – 5:35 pm
Kirkbride 206
Fall 2005
http://www.ce.udel.edu/courses/CIEG125/index.html

Instructor: Professor Sue McNeil
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Office Hours
Thursday: Noon – 2pm
Friday: Noon – 2pm
Monday: Noon – 2pm

Background:
CIEG 125 Introduction to Civil and Environmental Engineering is a required course for all students interested in obtaining an undergraduate degree in Civil Engineering. A passing grade is required in this class to be able to graduate.

Catalogue Description:
An overview of civil engineering disciplines including structural, environmental, geotechnical and transportation engineering. Addresses physical principles, numerical analysis and elementary design problems in each area. Emphasis on computer use (text processing, spreadsheet and graphics). Team design project.

Objective:
To introduce and expose students to all the major branches of Civil Engineering including Structural and Bridge Engineering, Transportation and Traffic Engineering, Ocean and Coastal Engineering, Environmental and Water Resources Engineering, and Soil Mechanics and Geotechnical Engineering.

Other objectives of this class include teach students three of the most commonly used software tools – Word, Excel and Powerpoint – used in written and oral communication.
The course also:
• Provides context for material in other courses
• Motivates other course materials
• Provides hands-on, project oriented experiences
• Illustrates the fun of engineering

Assignments:
Assignments are given to students to help them understand the profession of civil engineering and to improve professional communications skills.

A variety of mechanisms are used to assess students' progress through the course. These are intended to assess your understanding and retention of the material covered. Assessments also provide feedback to the instructor related to both the students’ progress and the effectiveness of the instruction. Assessments also encourage students to actively participate in the learning process.

Grading:
Individual assignments: 21%
(Total of 8 assignments – drop worst grade for 7 best assignments/homeworks)
Presentation: 4%
Group assignments: 25%
(3 project reports)
Midterm exam: 20%
Final exam: 30%

Prerequisites: Algebra, an open mind and a willingness to learn.

Hold Paramount, Alastair Gunn and Aarne Vesilind, Thomson, 2003

Course Format: Lectures, and videos are used to present the various aspects of civil engineering. Laboratory visits bring students in contact with the state-of-the-art tools and equipment used in planning, designing, constructing and maintaining civil infrastructure facilities.

Scholarly Expectations:
The basic assumption of this course is that learning results from a continuing process of rational discourse. Within the course there are both opportunities and responsibilities. In this course you have the opportunity to learn. Your responsibilities are to maximize your learning from the course (i.e., improve your intellectual understanding), maximize and assist in the learning of your classmates, and to apply what you learn to your work. To take advantage of the opportunity and to meet your responsibilities you are to:

1. Master the basic concepts, theories, methods, and heuristics. You are expected to know a great deal more after taking this course than you did before.
2. Think critically about the course content and topics to gain understanding and insights.
3. Explain precisely to several classmates your learnings, insights, and conclusions. Your learning is not complete until you teach what you know to someone else and can describe precisely what you have learned and what you understand.

4. Ask others to share their knowledge, conclusions, and insights with you. When they do so, listen carefully, elaborate by explaining how what you learned from them fits in with previous knowledge you have learned, and thank them.

5. Engage in intellectual controversy by taking positions counter to those of your classmates, developing clear rationales for your positions, challenging their reasoning and conclusions, and arguing the issues until you or they are logically persuaded.

Academic Honesty:
All students must be honest and forthright in their academic studies. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Any violation of this standard must be reported to the Office of Judicial Affairs.

Cheating and Plagiarism:
Teamwork is the foundation of this course. Discussion and collaboration on group projects is required, and on homework and other individual assignments, it is encouraged. However, each student is expected to turn in a complete and unique solution for homework and individual projects. All homework involves some subjective explanation, or interpretation so there is plenty of room for individualism. When computer analysis is used each individual is expected to complete the analysis independently even when a group effort is made to identify and explore solution methods.

Relevant policies:
Academic Regulations
http://udcatalog.udel.edu/general/undergrad/ugregs.html

University Attendance Policies
http://udcatalog.udel.edu/general/undergrad/ugregs.html#best

Student Guide to University Policies
http://www.udel.edu/stuguide/05-06/

Academic Honesty
http://www.udel.edu/stuguide/05-06/code.html#honesty

Your responsibilities:
• Attend and be attentive in class. Participate where appropriate.
• Read email regularly
• Check the class syllabus for the schedule and visit the class website regularly for updates.
• Turn off your cell phone before you come into class
• Complete and turn in all homework and reports in a timely and professional manner

Specific policies related to unacceptable behavior and activities:
• Absence, late homework and projects, missed homework, projects and exams – (Homework and projects are due at the beginning of class)
  Response: University accepted excuses (religious holidays – with prior permission, illness – with Physician’s note)
• Grading disputes
  Response:
    1. Discuss with grader or TA
    2. Discuss with professor
    3. University Judicial System
• Cheating and plagiarism, academic honesty
  Response: University Judicial System
• Disruptive conduct
  Unacceptable:
  “Interfering with a faculty member or University official in the performance or his or her duty.”
  “Making, exhibiting, or producing any inappropriate, loud, or disruptive noise or behavior.”
  Includes talking, and cell phones.
  Response: University Judicial System

RESOURCES

Professional Organizations

American Society of Civil Engineers
Student Chapter – http://www.ce.udel.edu/~asce/
National – http://www.asce.org

Society of Women Engineers
Student Chapter – http://copland.udel.edu/stu-org/udswe/
National – http://www.swe.org

National Society of Black Engineers
Student Chapter – http://udel.edu/stu-org/nsbe/
National – http://www.nsbe.org/

Society of Hispanic Professional Engineers
Student Chapter – http://www.udshpe.org/
National – http://www.shpe.org/

American Public Works Association
http://www.apwa.net/

Publications
Books


Anything by Henry Petroski

Anything by Edward Tufte

Anything by Mario Salvadori
CIEG 125 - Schedule - Any updates to the schedule will be distributed via email and posted to the webpage

<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
<th>Responsibilities</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>9/12</td>
<td>Introduction</td>
<td>M¹ – Chapter 1/2/5</td>
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<tr>
<td>2</td>
<td>9/19</td>
<td>Engineering Estimation and Approximations</td>
<td>M - Chapter 6/7/8</td>
<td>Homework 1 due</td>
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<td></td>
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<td>Measurements/Dimensions and Units</td>
<td>G &amp; V² – Chapter 1</td>
<td>Presentation: Gr 1 &amp; 2</td>
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<tr>
<td>3</td>
<td>9/26</td>
<td>Introduction to structures and loads</td>
<td>M - Chapter 14</td>
<td>Homework 2 due</td>
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<td></td>
<td>G &amp; V – Chapter 2</td>
<td>Presentation: Gr 3 &amp; 4</td>
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<td>4</td>
<td>10/3</td>
<td>Guest lecture: Bridges- Professor Chajes</td>
<td>G &amp; V – Chapter 3</td>
<td>Homework 3 due</td>
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<td>Presentation: Gr 5 &amp; 6</td>
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<td>5</td>
<td>10/10</td>
<td>Guest lecture: Terry Neimeyer KCI Technologies, Inc. Materials</td>
<td>M - Chapter 17 G &amp; V – Chapter 4</td>
<td>Homework 4 due</td>
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<td>Presentation: Gr 7, 8 &amp; 9</td>
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<td>6</td>
<td>10/17</td>
<td>Introduction to design</td>
<td>M – Chapter 3</td>
<td>Report 1 due</td>
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<td>In class exercise</td>
<td>G &amp; V – Chapter 5</td>
<td>Presentation: Gr 10, 11 &amp; 12</td>
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<td>7</td>
<td>10/24</td>
<td>Midterm exam (55 minutes)</td>
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<td>Career Services (55 minutes)</td>
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<td>8</td>
<td>10/31</td>
<td>Ocean and Coastal</td>
<td>G &amp; V – Chapter 6</td>
<td>Report 2 due</td>
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<td>G &amp; V – Chapter 7</td>
<td>Presentation: Gr 13 &amp; 14</td>
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<td>9</td>
<td>11/7</td>
<td>Environmental Engineering Concepts</td>
<td>G &amp; V – Chapter 8</td>
<td>Homework 5 due</td>
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<td>Presentation: Gr 15</td>
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<td>10</td>
<td>11/14</td>
<td>Traffic and Transportation</td>
<td>G &amp; V – Chapter 9</td>
<td>Homework 6 due</td>
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<td>Presentation: Gr 16 &amp; 17</td>
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<td>11</td>
<td>11/21</td>
<td>Soils and Geotech Env and Water Resources</td>
<td>G &amp; V – Chapter 10</td>
<td>Homework 7 due</td>
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<td>Presentation: Gr 18 &amp; 19</td>
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<td>12</td>
<td>11/28</td>
<td>Engineering Economics and Construction</td>
<td>M - Chapter 4/20</td>
<td>Report 3 due</td>
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<td>Communications</td>
<td>G &amp; V – Chapter 11/12</td>
<td>Presentation: Gr 20 &amp; 21</td>
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<td>13</td>
<td>12/5</td>
<td>Wrap up</td>
<td>G &amp; V – Chapter 13/14/15</td>
<td>Homework 8 due</td>
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<td>Presentation: Gr 22, 23 &amp; 24</td>
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<td>12/12</td>
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<td>Exam up</td>
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9/8/05

¹ Text by Moaveni
² Text by Gunn and Vesilind