Physics for Science and Engineering III
Physics 223
Spring 2013 Syllabus

Instructor
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Course Description
This course is part three of a calculus-based physics sequence intended for science and engineering majors. This course will use mathematics to model physical behaviors. Algebra and trigonometry will be used heavily. Differential and especially integral calculus will be used often this quarter.

Topics to be covered are electric fields, Gauss’ Law and electric field flux, electric potential (voltage), capacitance, current, resistance, circuits, magnetic fields, induction, and the equations of Scottish physicist James Clerk Maxwell.

Class Schedule
- Mon., Tue., Wed., and Fri. in Room 225, 12:30 pm – 1:20 pm
- Thursdays in Room 225, 12:30 – 2:20 pm (labs)
- No class on Wednesday, May 15 (advising day)
- No class on Monday, May 27 (Memorial Day)
- Last class is on Tuesday, June 11
- Final exam is on Friday, June 14, Room 225, 12:30 pm – 2:20 pm

Materials
- Physics for Scientists and Engineers, Second Edition by Randall D. Knight
- Mastering Physics on-line homework system
- Scientific calculator

Accommodations
If you have a disability and need accommodations, please see the instructor after class or contact Claudia Angus, Coordinator of Disability Support Services at 527-4262.
Grading

- Homework, 10%
- Labs, 17%
- Exams, 50% total
- Final Exam, 20%
- “Participation”, 3%
- Grade Table where x is the percent of points earned:

<table>
<thead>
<tr>
<th>Grade</th>
<th>x range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$\infty \geq x \geq 93$</td>
</tr>
<tr>
<td>B+</td>
<td>$90 &gt; x \geq 87$</td>
</tr>
<tr>
<td>B</td>
<td>$87 &gt; x \geq 83$</td>
</tr>
<tr>
<td>C+</td>
<td>$80 &gt; x \geq 77$</td>
</tr>
<tr>
<td>C</td>
<td>$77 &gt; x \geq 73$</td>
</tr>
<tr>
<td>D+</td>
<td>$70 &gt; x \geq 67$</td>
</tr>
<tr>
<td>D</td>
<td>$67 &gt; x \geq 60$</td>
</tr>
<tr>
<td>A-</td>
<td>$93 &gt; x \geq 90$</td>
</tr>
<tr>
<td>B-</td>
<td>$83 &gt; x \geq 80$</td>
</tr>
<tr>
<td>C-</td>
<td>$73 &gt; x \geq 70$</td>
</tr>
<tr>
<td>F</td>
<td>$60 &gt; x \geq -\infty$</td>
</tr>
</tbody>
</table>

Homework

- On-line homework given periodically.
- Some written homework, usually due next class period.
- Questions on the homework will be answered at the beginning of class.
- Homework grade depends much on effort.

Labs

- Most Thursdays
- Required participation

Exams

- Four exams during the quarter
- Final exam is comprehensive.

“Participation”

Let me call it for what it really is, “Suck Up” points. In the real world, sucking up to your supervisor can help you climb the corporate ladder so in physics 223, sucking up to your instructor can help you with your physics grade. So show in interest in what your instructor is interested in (this can be real or fake), give little treats to your instructor (teachers like apples), arrive to class on time (at least arrive to class), sit near the front (13 seats available), don’t fall asleep during class, do your homework everyday, don’t whine, ask questions, smile, and even participate.

Expectations

- Keep up with the material
- If you do not understand the material, take steps to understand it by
  1. Rereading the text and your notes
  2. Working with classmates
  3. Visiting the Science Learning Center
  4. Asking the instructor
Weekly Schedule

Week #1, April 1 – April 5
  Chapter 26 – Electric Charges and Forces
  Chapter 27 – The Electric Field

Week #2, April 8 – April 12
  Chapter 27 – The Electric Field (continued)
  Chapter 28 – Gauss’s Law
  No class Friday, April 12

Week #3, April 15 – April 19
  Chapter 28 – Gauss’s Law
  Exam #1 on Tuesday, April 16 (Chapters 26-28)
  Chapter 29 – The Electric Potential

Week #4, April 22 – April 26
  Chapter 29 – The Electric Potential (continued)

Week #5, April 29 – May 3
  Chapter 30 – Potential and Field
  Exam #2 on Friday, May 3 (Chapters 29-30)

Week #6, May 6 – May 10
  Chapter 31 – Current and Resistance

Week #7, May 13 – May 17
  Chapter 31 – Current and Resistance (cont.)
  No class Wednesday, May 15
  Chapter 32 – Fundamentals of Circuits

Week #8, May 20 – May 24
  Exam #3 on Monday, May 20 (Chapters 31-32)
  Chapter 33 – The Magnetic Field

Week #9, May 27 – May 31
  No class Monday, May 27
  Chapter 33 – The Magnetic Field (cont)
  Chapter 34 – Electromagnetic Induction

Week #10, June 3 – June 7
  Chapter 34 – Electromagnetic Induction (cont)
  Exam #4 on Wednesday, June 5 (Chapters 33-34)
  Chapter 35 – Electromagnetic Fields and Waves

Week #11, June 10 – June 14
  Chapter 35 – Electromagnetic Fields and Waves (cont)
  Final Exam on Friday, June 14 (Chapters 26-35)

Disclaimer
Instructor reserves the right to make changes to this syllabus at any time.