Physics for Science and Engineering I
Physics 221
Fall 2012 Syllabus

Instructor
- Frank Skorina
- Office in room 40, way in the back
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- 527-4578 (w), 301-3839 (c)

Course Description
This course is the first in a three part series that introduces basic physics concepts. This course will use mathematics to model physical behaviors so algebra and trigonometry will be used heavily. Knowledge of calculus is required.

Specifically, this course will cover motion including linear, projectile, and rotational, forces, kinetic and potential energy, and momentum. This course introduces concepts found in two entry level engineering courses: statics and dynamics.

Class Schedule
- Mondays, Tuesdays, Wednesdays, Fridays, Room 225, 12:30 pm – 1:20 pm
- Thursdays, Room 225, 12:30 pm – 2:20 pm (labs)
- No class on Wednesday, November 7 (Advising Day)
- No class on Monday, November 12 (Veterans' Day)
- No classes on Monday-Friday, November 19-23 (Thanksgiving)
- Last Class on Friday, December 7
- Final exam is on Wednesday, December 12, Room 225

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, 15%
- Labs, 15%
- Exams (top 2 of 3), 40%
- Final Exam, 30%
- Grade Table where $x$ is the percent of points earned:

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

- On-line homework given per chapter.
- Some written homework, usually due next class period.
- A few in-class quizzes will count in homework grade.
- 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
- Top three scores will count towards final grade.
- One comprehensive final exam.

Expectations

- Keep up with the material
- No use of cell phones or computers during class
- 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 September 24 – September 28
  Introduction
  Chapter 1 – Concepts of Motion
  Chapter 2 – Kinematics in One Dimension

Week #2, October 1 – October 5
  Chapter 2 – Kinematics in One Dimension (continued)
  Exam #1 on Fri., Oct. 5 (Chapters 1-2)

Week #3, Oct. 8 – Oct. 12
  Chapter 3 – Vectors and Coordinate Systems
  Chapter 4 – Kinematics in Two Dimensions

Week #4, Oct. 15 – Oct. 19
  Exam #2 on Tue., Oct. 16 (Chapters 3-4)
  Chapter 5 – Force and Motion

Week #5, Oct. 22 – Oct. 26
  Chapter 6 – Dynamics I: Motion in a Line
  Chapter 7 – Newton’s Third Law

Week #6, Oct. 29 – Nov. 2
  Chapter 8 – Dynamics II: Motion in a Plane

Week #7, Nov. 5 – Nov. 9
  Exam #3 on Tue., Nov. 6 (Chapters 5-8)
  No Class Wednesday
  Chapter 9 – Impulse and Momentum

Week #8, Nov. 12 – Nov. 16
  Chapter 10 – Energy
  No Class Monday

Week #9, Nov. 26 – Nov. 30
  Chapter 11 – Work
  Exam #4 on Fri., Nov. 30 (Chapters 9-11)

Week #10, Dec. 3 – Dec. 7
  Chapter 12 – Rotation of a Rigid Body (part)

Week #11, Dec. 10 – Dec. 12
  Final Exam on Wed., Dec. 12 (Chapters 1-12)

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