Physics 255 – University Physics I – Fall 2008
MWF 12:40-1:35, Tues 12:40-2:05, TCCW 201

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Office hours: Mon 3:00-4:00, Tues 3:30-4:30, or by appointment

Catalog Description: This is the first half of a year-long course in calculus-based physics suggested for students in the physical sciences and mathematics. Definitions, concepts and problem solving will be emphasized. Topics include kinematics, dynamics, energy, conservation laws, rotation, periodic motion and thermodynamics.

Pre-requisite: MATH 126 (Calculus I) with a grade of C or better.
Co-requisites: PHYS 256 (Laboratory) and MATH 227 (Calculus II).
No exceptions to these requirements are allowed.

Objectives: The course will emphasize rigorous problem-solving in physics using interactive instruction, educational software, computer applications important for science and engineering students, and cooperative learning. Class activities will require students to be responsive, to think, and to perform hands-on tasks. Key concepts of new material will be discussed in short lectures. As a scientist or an engineer you will often be required to work in a group setting as well as alone. This course will encourage collaborative teamwork, a skill that is valued by most employers. As you study together, help your partners to get over misconceptions, ask each other questions, and critique your group homework. Teach each other! You will be surprised at how much you can learn by teaching.

Required Textbook: University Physics with Modern Physics, 12th edition by Young and Friedman (Addison-Wesley, ISBN-10 0-8053-2187-X). This book is used for the full University Physics sequence (PHYS 255 and 256). It should be available at campus bookstores. Supplementary study guides sold in these stores are not needed.

Mastering Physics: We will be using the Mastering Physics website. A free student access kit is included if you bought a new copy of the textbook. If you obtained a used copy of the book, you will need to purchase a license separately. The website address is http://www.masteringphysics.com. Be sure you select the right textbook. Then find the course ID to join: MPGIBSON38972. Check this website or my own regularly for important announcements and assignments.
Grading Method: Letter grades for the course will be assigned on the usual scheme shown in the table on the left. The relative weights of the course components contributing to the numeric score are listed in the table on the right.

<table>
<thead>
<tr>
<th>% Avg Score</th>
<th>Grade</th>
<th>Mastering Physics assignments</th>
<th>Other assignments, in-class exercises, and quizzes</th>
<th>Block Exams (best 3 of 4)</th>
<th>Final Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 – 100</td>
<td>A</td>
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<td></td>
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<tr>
<td>80 – 89</td>
<td>B</td>
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<tr>
<td>70 – 79</td>
<td>C</td>
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<td>60 – 69</td>
<td>D</td>
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<tr>
<td>0 – 59</td>
<td>F</td>
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Assignments

- **Readings:** You are responsible for reading assignments I will give in class. These are intended to familiarize you with material *before* it is covered in lecture or class discussions, so that you can grasp important points as they arise rather than frantically trying to note down everything that is said. I will give reading quizzes worth a small fraction of your total grade to encourage you in this regard.

- **Homework**
  - **Mastering Physics:** Individual homework assignments in the course are to be done on the Mastering Physics computer homework system. You will receive credit for correct solutions automatically by Mastering Physics. It is in your best interest to maintain prepared written solutions (using a good problem solving strategy) for discussion in lecture. Extra credit may be given to those who demonstrate effective solutions, and occasional problem quizzes may test your solution methods in class. As a general rule homework solutions will not be posted. The burden is on you to make sure you find out how to solve the problems by getting help before they are due or asking about them in class. Grading in Mastering Physics is such that you can enter an unlimited number of wrong answers, unless the question is true/false or multiple-choice. Each part of an assignment that is not submitted by the due date will lose credit based on a linear scale where 25% is deducted for every day that it is late (roughly 1% loss per hour).

  - **Other Assignments and Exercises:** Occasionally, there will be additional in-class and out-of-class assignments or other activities. In some, you will be responsible for completing the assignment completely on your own, without outside assistance. In others, you will be asked to work with other students. A diligent effort on the homework and exercises is the best approach to a successful learning experience in this course.
**Block Examinations:** The course can be roughly divided into five “blocks” of material of varying lengths, each ending with an exam on that material. The first four of these blocks will be tested on the following schedule, with some small changes possible in the topics covered, depending on how much we get through in class prior to each exam:

<table>
<thead>
<tr>
<th>Block Exam</th>
<th>Likely Topics (may change)</th>
<th>Date</th>
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<tbody>
<tr>
<td># 1</td>
<td>Kinematics [Ch 1,2,3]</td>
<td>Wednesday, September 17</td>
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<tr>
<td># 2</td>
<td>Dynamics [Ch 4,5,12]</td>
<td>Wednesday, October 1</td>
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<tr>
<td># 3</td>
<td>Energy &amp; Momentum [Ch 6,7,8]</td>
<td>Monday, October 20</td>
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<tr>
<td># 4</td>
<td>Rotational Dynamics [Ch 9,10,11]</td>
<td>Friday, November 7</td>
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</table>

Since our lecture room is not suitable for exams with more than 30 students, we will try to use a different room for the exams, to be determined later. The lowest of the four block exam scores will not be included in the calculation of your final grade. The remaining three will each count for 10% of your grade.

**Final Examination:** The final exam for the course will be **comprehensive:** it will cover material from the first four exams plus any new material in the fifth block. The final exam will be given according to the University-mandated schedule, which as of this writing is listed online as:

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Normal Day/Time</th>
<th>Final Exam Date</th>
<th>Final Exam Time</th>
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</thead>
<tbody>
<tr>
<td>PHYS 255-002</td>
<td>MTWF 12:40</td>
<td>Tuesday, December 9</td>
<td>1:00 – 3:00 pm</td>
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</table>

**Lecture Attendance:** Regular and punctual attendance is expected of everyone during every class meeting. You will be responsible for material missed in your absence. Lecture notes must be obtained from a classmate.

**Exam Attendance:** As a general rule, make-up exams will **NOT** be given except for very unusual circumstances. If you are unable to take an exam, you **MUST** request to schedule a makeup exam by asking permission from the instructor **BEFORE** (except in the case of unforeseen circumstances) the regularly-scheduled exam period. A serious reason is required to warrant the scheduling of a makeup exam.

**Drop/Audit Policy:** Due to the nature of this course, **PHYS255 cannot be audited.** If you choose to not complete the course for a grade then your only option is to drop the course and receive a grade of W by the University deadline for dropping a course. If you choose to drop this course, you **MUST** also drop the lab, since they are co-requisites.

**Disability Policy:** In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services in
Downing University Center, A-201, telephone 270-745-5004 V/TDD. Please do not request accommodations directly from me without a letter of accommodation from the Office for Student Disability Services.

Classroom Policy

• Food and drinks are NOT allowed in the classroom
• Cell phones, pagers, and similar devices must be turned off and stored away during class time
• The classroom laptop computers are for specific classroom activities ONLY!
  • Do not install or modify any software on the laptop computers.
  • Do not use the computers to check email during class time.
  • Do not use the computers to instant message or chat with anyone ever.
  • Do not submit or view homework assignments on Mastering Physics during class time.
  • Do not browse the internet during class time unless it is part of a class activity.