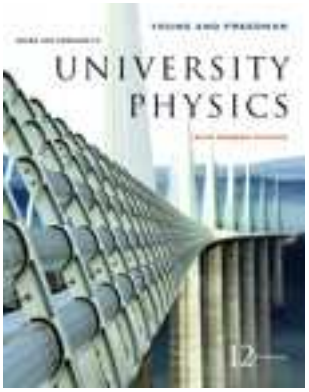


# Physics 255: University Physics I
## Spring 2009, MWF 12:40-1:35, T 12:45-2:05

**Instructor:** Dr. Steven Gibson
**Office:** TCCW 231
**Phone:** 745-3019
**E-mail:** (first).(last) (at) wku.edu
**Office hours:** M 2:30-3:30, T 3:00-4:00, or by appointment
**Course website:** www.physics.wku.edu/~gibson/phys255

**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 a mixture of lectures, demonstrations, exercises, and cooperative learning appropriate for science and engineering students. Class activities will require students to be responsive, to think, and to perform hands-on tasks. 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's work. Teach each other! You will be surprised at how much you can learn by teaching.

**Required Textbook:** *University Physics with Modern Physics, 12$^{th}$ Edition*, by Young & Friedman (Addison-Wesley, ISBN-10 0-8053-2187-X; **cover photo above**). This book is used for the full University Physics sequence (PHYS 255 and 265). 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 **www.masteringphysics.com**. Be sure you select the right textbook. Then find the course ID to join: **MPGIBSON87679**. Check this website and my own regularly for important announcements and assignments.

**Grading Method:** Letter grades for the course will be assigned on the usual scheme in the table at left below. The letter grade threshholds may be lowered but will not be raised. The relative weights of the course components contributing to the numeric score are listed in table at right.

| % Avg Score | Grade |
|---|---|
| 90 - 100 | A |
| 80 - 89 | B |
| 70 - 79 | C |
| 60 - 69 | D |
| 0 - 59 | F |

| Course Component | Grade Fraction |
|---|---|
| Mastering Physics assignments | 25% |
| Other assignments, in-class exercises, and quizzes | 10% |
| Block Exams (best 3 of 4) | 45% |
| Final Exam | 20% |

**Assignments**

- **Mastering Physics Homework:** Individual homework assignments in the course are to be done on the Mastering Physics computer homework system. For these, you are expected to work completely on your own, without assistance from other students. You will receive credit for correct solutions automatically from Mastering Physics. It is in your best interest to maintain prepared written solutions (using a good problem solving strategy) for discussion in lecture and to study for exams. Occasional problem quizzes may test your solution methods in class, and variations on MP problems may appear in exams. 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 10% is deducted for every 24 hours that it is late, down to a minimum of 50%. *Even late assignments are worth completing to obtain partial credit.*
- **Reading Quizzes:** 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.
- **Other Assignments and Exercises:** Occasionally, there may be additional in-class and out-of-class assignments or other activities. Some of these will be group conceptual or problem-solving exercises for "participation points" rather than a grade. Others may be graded individual or group homework assignments. A diligent effort on the homework and exercises is the best approach to a successful learning experience in this course.

**Examinations** assessing your knowledge of course material account for the majority (65%) of your course grade. A guide on how to prepare for and take physics exams will be provided separately.

**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:

| Block Exam | Likely Topics (may change) | Date |
|---|---|---|
| # 1 | Kinematics [Ch 1,2,3] | Tuesday, September 22 |
| # 2 | Dynamics [Ch 4,5,12] | Tuesday, October 6 |
| # 3 | Energy & Momentum [Ch 6,7,8] | Tuesday, October 27 |
| # 4 | Rotational Dynamics [Ch 9,10,11] | Tuesday, November 17 |

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 15% 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:

| Course ID | Normal Day/Time | Final Exam Date & Time |
|---|---|---|
| PHYS 255-001 | MWF 12:40, T 12:45 | Friday, December 18, 1:00 - 3:00 pm |

**Lecture Attendance:** Regular and punctual attendance is expected of everyone during every class meeting, and is rewarded through class participation exerises and quizzes, both of which count toward your final grade. 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 make-up 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 make-up 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.