

# Principles of Physics I

## Physics 1408-001      Spring 2008

**Instructor:** David Lamp    **Office:** Science Building 21/23    **Office Hours:** MWF 10-11

**Text:**      *Physics For Scientists And Engineers*, 4<sup>th</sup> edition, by Giancoli bundled with *Mastering Physics* (student access kit) and *Tutorials in Introductory Physics* (2 volumes) by McDermott et al. The text is a new edition (December 9, 2007) so there are no used copies to buy. Comparison shop this text; it is way expensive. It is available (1/7/08) at all 4 bookstores in town and on-line, prices vary.

**Course Coverage:**      Time permitting, the course will cover material from the first 20 chapters in the text. We will cover kinematics, mechanics, statics, rotation, fluids, and thermodynamics, most probably omitting mechanical waves, deferring that to 2401.

**Grading Policy:**      The following six scores will be accumulated during the course of the semester: Quizzes; Lab tutorials; Exam 1; Exam 2; Exam 3; Final.

Exam 1	20%
Exam 2	20%
Exam 3	20%
Final Exam	20% (and could also replace exam 1, 2, or 3)
Homework and Quizzes	10%
Lab	10% (must be 55% or higher to pass the entire 4-hour course)

The course grade will be the average of the quizzes, lab tutorials, and your four highest exam scores. The grade on the final may be used to replace one lower test grade. The lab tutorials are a required part of the course and a grade of 55% on that component is required to receive a passing grade for the entire course. **NO MAKEUP EXAMS OR QUIZZES WILL BE GIVEN.** Your letter grade will tentatively be determined according to the following scale: 55-65 D; 66-81 C; 82-91 B; 92+ A.

**Quizzes:**      Unannounced in-class quizzes based on assigned reading, homework, tutorials, and material covered in class will be given at least once a week. The timing for administering these quizzes will be unknown to the students and the quizzes cannot be made up. These quizzes are an 'attendance mechanism'. In other words, 'attend class or you'll lose points.' Since this is a lab course, you must obtain a laboratory score of 55% or better for the current semester in order to pass the entire Physics 1408 course.

**Homework:**      Homework will be assigned in class and should also be available on-line. The professor will be making up the problems assigned and will make solutions available. The text provides problems, some of which will be discussed. The professor will make up problems (*just like he makes the ones on your tests!*). The value of the assigned homework problems is that they are the basis for the in-class quiz problems and all of the problems on your exams. Doing well on the homework is crucial to your success in the course. Do not let the small percentage weight delude you into thinking these homework problems are in some way optional. They are the single best factor in determining how you do in the course. They will be collected, some graded, and handed back.

**Exams:**      Three one-hour exams will be given. Exam 1-February 4, Exam 2-March 3, Exam 3-April 9

**Final:**      A comprehensive final exam will be given. Monday May 5 4:30-7:00.

### **Course Goals:**

This course is intended to acquaint students with the basic laws of physics, to develop a better understanding of physical science in general, and help prepare you for other upper division physics and engineering classes. To this end, the course will emphasize a mix of conceptual understanding and standard "end-of-chapter" homework solving skills.

### **Expected Learning Outcomes:**

Upon successful completion of this course, students will be able to:

1. Describe the basis of the scientific method.
2. Distinguish between a scientific theory and speculation.
3. Explain at a quantitative level the fundamental elements of energy and motion.

### **Methods for Assessing the Expected Learning Outcomes:**

The expected learning outcomes for the course will be assessed through: Non-Graded Spot-check Quizzes, Guided Classroom Discussion, Graded Quizzes, Tutorial Exercises and Homework, In-class Exams, and the Final.

### **Important Notes:**

- Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.
- The faculty is strongly committed to upholding standards of academic integrity. These standards, at the minimum, require that students **never** present the work of others as their own.

### **Strategy for Success:**

- Be prepared! Study your notes and read the material in the text *before* we cover it in class. This will help you keep up, will make for more productive classroom interaction, and will help keep you prepared for those unannounced in-class quizzes that will make up part of your semester grade.
- Begin all homework assignments as soon as possible. The assignments take time and thought. The homework isn't graded separately, but the quizzes and test questions are based on the problems you do in the homework. Homework is essential to pass.
- Once you can work through a problem with your notes, book, study group, etc., write the question down on a blank sheet of paper and then try to rework it entirely on your own a day or so later.
- Never wait until the night before a test to "begin" studying.
- The course schedule is fast. Don't get left behind.
- Come see your instructor when you get stuck--that's why they pay me the big bucks! I am always willing to help anyone who tries.

# TENTATIVE SCHEDULE FOR SPRING 2008

	W Jan 9 class 1 1: Measurement & Estimation	F Jan 11 class 2 2: 1-D Kinematics
M Jan 14 class 3 2: 1-D Kinematics	W Jan 16 class 4 3: 2-D & 3-D Kinematics	F Jan 18 class 5 3: 2-D & 3-D Kinematics
M Jan 21 MLK Jr Day NO CLASS	W Jan 23 class 6 4: Dynamics & Newton's Laws	F Jan 25 class 7 4: Dynamics & Newton's Laws
M Jan 28 class 8 4 & 5	W Jan 30 class 9 5: Using Newton's Laws	F Feb 1 class 10 5: Using Newton's Laws
M Feb 4 class 11 <b>Exam I</b>	W Feb 6 class 12 6: Gravity & Newton's Synthesis	F Feb 8 class 13 6: Gravity & Newton's Synthesis
M Feb 11 class 14 6: Gravity & Newton's Synthesis	W Feb 13 class 15 7: Work and Energy	F Feb 15 class 16 7: Work and Energy
M Feb 18 class 17 7: Work and Energy	W Feb 20 class 18 8: Conservation of Energy	F Feb 22 class 19 8: Conservation of Energy
M Feb 25 class 20 8 & 9	W Feb 27 class 21 9: Linear Momentum	F Feb 29 class 22 9: Linear Momentum
M Mar 3 class 23 <b>Exam II</b>	W Mar 5 class 24 10: Rotational Motion	F Mar 7 class 25 10: Rotational Motion
M Mar 10 class 26 11: Angular Momentum	W Mar 12 class 27 11: Angular Momentum	F Mar 14 class 28 12: Static Equilibrium
M Mar 17 <b>SPRING BREAK</b> NO CLASS	W Mar 19 <b>SPRING BREAK</b> NO CLASS	F Mar 21 <b>SPRING BREAK</b> NO CLASS
M Mar 24 <b>EASTER HOLIDAY</b> NO CLASS	W Mar 26 class 29 12: Static Equilibrium	F Mar 28 class 30 12: Static Equilibrium
M Mar 31 class 31 13: Fluids	W Apr 2 class 32 13: Fluids	F Apr 4 class 33 14: Oscillations
M Apr 7 class 34 14: Oscillations	W Apr 9 class 35 <b>Exam III</b>	F Apr 11 class 36 17: Temperature & Gas Law
M Apr 14 class 37 17: Temperature & Gas Law	W Apr 16 class 38 18: Kinetic Theory of Gases	F Apr 18 class 39 18: Kinetic Theory of Gases
M Apr 21 class 40 19: Heat and the First Law	W Apr 23 class 41 19: Heat and the First Law	F Apr 25 class 42 20: Second Law
M Apr 28 class 43 20: Second Law	W Apr 30 <b>DEAD DAY</b> NO CLASS	F May 2
M May 5 Final Exam 4:30-7:00	W May 7	F May 9