

## DE ANZA COLEGE – PHYSICS 4A – FALL 2009

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**Instructor:** Eduardo Luna  
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**Office Phone:** 408-864-8666  
**Office Hours:** MTW 1:30-2:20PM, THF 9:30-10:20AM  
**Lecture Hours:** M-F 8:30-9:20AM (S34)  
**Lab Hours:** MTW 9:30-12:10PM (Room S11)  
**Final Exam Date:** Wednesday, December 9 from 7:00 – 9:00AM  
**Text:** University Physics, 12<sup>th</sup> Edition, Young & Freedman  
**Prerequisites:** High School Physics or Equivalent; Completion of Math 1A and concurrent enrollment in Math 1B (or already completed).

**Note: Last day to drop a class with a “W” is Friday, November 13. Students who do not drop by this date will be given the appropriate grade for their achievement in the class at the end of the quarter.**

### **OBJECTIVE**

This is a calculus-based course in Classical (Newtonian) Mechanics. The main problem of classical mechanics is to use its laws and principles to describe the motion (position and velocity) of a body (system) at any time given some set of initial conditions. Classical Mechanics is often divided into two parts:

- a) Kinematics – the description of the motion of an object without regard to the cause.
- b) Dynamics – the description of the motion of an object with regard to the forces that cause the motion.

Our main objective in Classical Mechanics will be to analyze the kinematics and dynamics of systems moving in:

- a) Translational( Linear) Motion
- b) Rotational & Circular Motion
- c) Oscillatory Motion

In our study of kinematics we will learn how to analyze the motion of a particle in 1-D and 2-D. In dynamics we will learn to analyze the motion of a particle (system) by using Newton's Laws of Motion and other formulations of such laws (Work and Kinetic Energy Theorem, Conservation Energy, Linear and Angular Momentum).

### **ATTENDANCE**

You are expected to be here at the beginning of each class, every day, for the rest of the quarter. If you miss four or more lectures you may find yourself dropped from the class. However, it is your responsibility to ensure being dropped or withdrawn from the course in order to avoid an “F” in the course if you stop attending lecture or lab.

### **HOMEWORK**

Homework will be assigned on a regular basis but will not be collected. Although the homework is not collected, it is **YOUR** responsibility to have it completed by the following day after it is assigned. It is essential to your success in this course that you put a solid effort into the homework. This is how you will learn physics and succeed in the class. (The quizzes will be based on the homework problems

assigned and lecture material). If you are having difficulties with the class/homework, here are some things that I recommend to help you succeed in the class:

1. Ask questions during class and attend office hours
2. Work together and discuss problems with other students in the class
3. Use the college's resources (available free for students)
  - a) Math and Science tutorial center
  - b) EOPS
  - c) Student Success and Retention Program

On the homework, quizzes, and exams, you need to show all your work in complete detail in order to receive full credit. Your solutions should show your step-by-step process and logic that was used to obtain the answer. **No credit will be given if no work is shown even if you obtain the correct answer to the problem.** Answers to homework even problems will be posted on my homepage.

### **QUIZZES**

There will be a quiz every Friday at the end of class. The quizzes will generally represent that week's homework problems and lecture material. Therefore, it is to your advantage to attend every lecture and have **ALL** the homework completed.

### **EXAMS**

There will be three in-class exams and a comprehensive final. Exact dates for exams will be given at least four days prior to each exam. The exam format may be work-out problems, multiple-choice, conceptual, or a combination of the three. I will let you know before the exam if you can use calculators. The key to the success on the exams is *preparation*; read the textbook and make sure you understand it, ask questions if you don't understand, **DO THE HOMEWORK**, and attend the lectures. There are no make-up exams. If you miss an exam you will get a **ZERO** for that exam. Of the three in-class exams I will take the average of the lowest and highest score and replace the lowest with the average. You must take all three exams for me to replace the lowest exam score by the average of the lowest and highest!

Note: If there is a dispute in the grading of any exam homework, quiz, or exam I will consider looking at them a second time **only** if it is handed back to me **within 2 school days** after I return them.

### **GRADING**

Grades will be based on the following components with the weights shown:

Quizzes	15%
Lab	20%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	20%

Grades will be determined as follows:

88% ---> 100%	= A
76 %---> 87%	= B
65% ---> 75%	= C
54% ---> 64%	= D
0 ---> 53%	= F