DE ANZA COLLEGE – PHYSICS 4A – Winter 2017

Instructor: Tom Marshburn

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Office Hours: TBD

Lecture Hours: M-F 1:30-2:20PM (Room S11)

Lab Hours: MW 2:30-5:20PM (Room S17)

Final Exam Date: **Tu**esday, March 28 from 1:45PM – 3:45PM

Text: Physics for Scientists and Engineers (Vol. 1), 9th Edition, Serway/ Jewett

Required: Casio FX-300MS Scientific Calculator or similar

Prerequisites: Physics 50 with a grade of C or better, or the equivalent (including high school physics); Completion of Math 1A with a C or higher and concurrent enrollment in Math 1B (or already completed).

Note: Last day to drop a class with a "W" is Friday, March 3. 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 objective of the course is for the student to understand the laws/theories and principles of Classical Mechanics in order to be able to describe the motion of a system so that we can better understand the physical world around us. The foundation laws of Classical Mechanics are Newton's Laws of Motion. Thus, we can equivalently state that the main objective is for the student to learn and understand Newton's Laws of Motion from a conceptual and practical viewpoint. Classical Mechanics is often divided into two parts:

.   a) Kinematics – The description of the motion of an object without regard to the forces causing the motion. We will describe the motion of an object (system) moving in 1-D and 2-D.

.   b) Dynamics – The description of the motion of an object with regard to the forces that cause the motion. We will use Newton's Laws of Motion to help us describe the motion of an object (system) with regard to the forces acting on an object.

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). Law of gravity will also be discussed.

ATTENDANCE

You are expected to be in class at the beginning of each class for the rest of the quarter. An attendance sheet will be passed at the beginning of class. If you miss signing the attendance sheet five 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 generally be based on homework and lecture material). If you are having difficulties with the lecture/lab/homework, here are some things that I recommend to help you succeed in the class:

1. Ask for help during class and attend office hours

2. Work together and discuss problems with other students in the class

3. Get help at the Math & Science Tutorial Center (Room S43)

On the quizzes and exams you will 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.

QUIZZES

There will be a quiz every Friday at the end of class. The quizzes will generally be based on homework problems and lecture material from Friday of previous week to Thursday of the current week. If you miss a quiz you will get a ZERO for that quiz. NO MAKE-UP QUIZZES! At the end of quarter the lowest quiz score will be dropped.

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. 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. At end of quarter I will take the average of the three in-class exams scores and replace the lowest with the average. You must take all three exams in order to replace the lowest exam score by the average of the three scores!

Note: If there is a dispute in the grading of any 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 15%

Exam 1 15%

Exam 2 15%

Exam 3 15%

Final Exam 25%

Grades will be determined as follows:

88% --->100% = A

76 %---> 87% = B

65% ---> 75% = C

54% ---> 64% = D

0 ---> 53% = F

NOTICE:
Cheating on any exam is grounds for a zero score on that exam, which cannot be dropped. "Cheating" is defined (in this course) to be an effort by a student to obtain a grade by any means other than demonstration of that student's individual achievement in mastering the class material and/or fulfilling terms of a project.
Further grounds for expulsion from the class include any activity which interferes with others' ability to benefit from the class (such as chronic distracting behavior) or which degrades the Planetarium's function or environment.