DE ANZA COLLEGE – PHYSICS 4A – SPRING 2025

Instructor:	**Dr. Ramin Alizadeh**
Email:	**alizadehramin@fhda.edu**
Lecture Hours:	**Mondays and Wednesdays (5:30pm - 7:45pm)**
Classroom:	**MLC 105**
Textbook:	**Physics for Scientists and Engineers (Vol. 1), 10th Edition, Serway /Jewett**
Office Hours:	**Mondays 4:50- 5:30pm (MLC 105)**

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:

1. 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.
2. 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.

STUDENT LEARNING OUTCOMES

Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.

REQUIRED TEXTS / READINGS

Textbook

Title: Physics for Scientists and Engineers (Vol. 1), 10th Edition
Authors: Serway /Jewett
Publisher: Cengage Learning

WEBASSIGN + eBook: Physics for Scientists and Engineers (Vol. 1), 10th Edition

Cengage has experts available to help walk you through the complete registration of your eBook. Feel free to join any day to ask your questions or learn more about these course materials.			
Cengage support options:	**Textbook Zoom Office Hours for Students**:		
Tel:1-800-354-9706 Chat Support and Online Self-Help Support Services to Create a Case	**Date M-W-F**	**Time**	**Link**
		12pm -2pm	https://www.cengage.com/coursepages/Office_Hours_Qtr_F23

ATTENDANCE

You are expected to be in class at the beginning of each class for the rest of the quarter. If you stop attending the class it is your responsibility to ensure being dropped or withdrawn from the course in order to avoid receiving an "F" in the course.

HOMEWORK

Homework will be assigned on a regular basis. It is essential to your success in this course that you put a solid effort into the homework. The assignments will be accessed through **Cengage** Learning's **WebAssign** learning system. Access to **WebAssign** will require an access code to be purchased. Homework assignments are worth **15%** of the final grade.

EXAMS

There will be two **Mid-terms** in-class exams (2 hours in duration for each) and a comprehensive **Finals** exam (2 hours in duration). Mid-terms are worth **20%** each and the finals is worth **30%** of the total grade. 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; **DO THE HOMEWORK,** attend the lectures, read the textbook and make sure you understand it, and ask questions if you don't understand. **There are no make-up exams**. If you miss an exam you will get a **ZERO** for that exam.

DISRUPTIVE BEHAVIOR POLICY

Any disruptive behavior during class will NOT be tolerated. If a student is in any way disruptive during the class, the student will be given a warning. If the problem continues, the student will be asked to leave the class and a formal disciplinary report will be filed with the college disciplinary officer. The incident will be recorded in your college record and will be sent with your transcripts to any university/college requesting student records.

ELECTRONIC DEVICE POLICY

Phones need to be set on 'silent' mode to avoid disturbing other students in the class. Phones or any other electronic device cannot be used to take video of any lecture material during class. Note-taking electronic devices are permitted with instructor's prior permission.

DE ANZA COLLEGE ACADEMIC INTEGRITY

"The following types of misconduct for which students are subject to disciplinary sanctions apply at all times on campus as well as to any-off campus functions sponsored or supervised by the college: cheating, plagiarism or knowingly furnishing false information in the classroom or to a college officer"

Violating the Academic Integrity Policy will result in a grade of "F" in the class and the incident will be reported to the college disciplinary office.

DISABILITY SUPPORT PROGRAMS AND SERVICES

Students who have been found to be eligible for accommodations by Disability Support Services (DSS), please follow up to ensure that your accommodations have been authorized for the current quarter. If you are not registered with DSS and need accommodations, please go to the DSS office in the Registration & Student Services Building (RSS) – Room 141 for information on eligibility and how to receive support services. You can also go online to https://www.deanza.edu/dsps/
Links to an external site. for additional information.

GRADING

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

Assignments:	15%
Exam 1:	20%
Exam 2:	20%
Lab:	15%
Final Exam:	30%

Grades will be determined as follows:

87% ---> 90% = A-	91% --->100% = A
75% ---> 79% = B-	80% ---> 86% = B
65% ---> 69% = C-	70% ---> 74% = C
51% ---> 59% = D-	60% ---> 64% = D
0 ---> 50% = F	

Here are some tips to succeed in the class:

1. Attend the classes
2. Take good notes
3. Do the homework and read the textbook assigned sections
4. Ask if you don't understand a concept and attend office hours

PHYS 4A SCHEDULE

This is a preliminary schedule. It will be changed during the semester based on class progress. Any changes to the schedule will be announced during class or through canvas.

Week	Date	Topics, Readings, Assignments, Deadlines
1	April 7	Syllabus Chapter 1: Physics and Measurement
1	April 9	Chapter 2: Motion in One dimension
2	April 14	Chapter 2: Motion in One dimension Chapter 3: Vectors
2	April 16	Chapter 4: Motion in Two dimensions
3	April 21	Chapter 4: Motion in Two dimensions
3	April 23	Chapter 5: The Laws of Motion
4	April 28	Chapter 5: The Laws of Motion
4	April 30	Chapter 6: Circular Motion and Applications of Newton's Laws
5	May 5	**Exam 1 (Ch 1,2,3,4,5)**
5	May 7	Chapter 6: Circular Motion and Applications of Newton's Laws
6	May 12	Chapter 7: Energy of a System
6	May 14	Chapter 8: Conservation of Energy
7	May 19	Chapter 9: Linear Momentum and Collisions
7	May 21	Chapter 10: Rotation of a Rigid Object about a Fixed Axis
8	May 26	**Holiday – no classes**
8	May 28	**Exam 2 (Ch 6,7,8,9)**
9	June 2	Chapter 11: Angular Momentum
9	June 4	Chapter 11: Angular Momentum
10	June 9	Chapter 12: Static Equilibrium and Elasticity
10	June 11	Chapter 13: Universal Gravitation
11	June 16	Review
11	June 18	Review
Final Exam	**Monday, June 23**	**6:15 pm to 8:15 pm (Cumulative)**

Student Learning Outcome(s):

• Examine new, previously un-encountered problems by critically analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.
• Acquire skill and confidence in taking precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.

Office Hours:

MLC105	M	4:50 PM - 5:30 PM