De Anza College Physics 50 Syllabus
Spring 2025

Course Details:
Lectures: Mondays and Wednesdays 5:30 pm - 7:20 pm
Location: Online via Zoom
4 Units
Instructor: David Laubner
Email: laubnerdavid@fhda.edu
*This is the best way to reach me!
Office Hour: Wednesdays 4:00 pm - 4:50 pm or by appointment

Key Dates:
April 20th - Last Day to add 12-week classes
April 20th - Last Day to drop without a W
May 26th - Memorial Day Holiday - no classes!
June 19th - Juneteenth Holiday - no classes!
May 30th - Last Day to drop with a W

Final Exam Date: Monday, June 23rd from 6:15 pm - 8:15 pm, held synchronously online

Requisite/Advisory:
PHYS 10 and MATH 43/MATH 43H

Text:
Physics 5th Edition by James Walker

Course Description:
This is an algebra-based course in Classical Mechanics. The main objective of this course is to understand the laws of Classical Mechanics in order to better understand the world. To that end, we study Newton's Laws of Motion both conceptually and mathematically. This course will also help you develop the problem-solving skills necessary for success in Physics 4A. Throughout the quarter, we will be studying both kinematics and dynamics.

Kinematics: The description of motion of an object or a system regardless of the forces at play. We will study kinematics in one and two dimensions.
Dynamics: The description of motion with regard to the forces at play. We will use Newton's Laws to describe the motion of the object or system.

Course Objectives in Brief:

A. Review relevant mathematics
B. Examine kinematics
C. Analyze Newton's laws
D. Investigate momentum
E. Categorize and investigate energy
F. Discuss rotation with applications to problem solving

Course Objectives in Detail:

A. Review relevant mathematics
    1. Discuss basic algebra concepts
    2. Examine graphing techniques
    3. Explain trigonometry
    4. Analyze vector methods
B. Examine kinematics
    1. Discuss displacement
    2. Define velocity
    3. Define acceleration
    4. Analyze the kinematical equations and problem solving
        a. Discuss one dimensional kinematics
        b. Discuss two dimensional kinematics
C. Analyze Newton's laws
    1. Discuss Newton's first law
    2. Discuss Newton's second law
        a. Define forces
        b. Analyze in detail extensive problem solving utilizing the second law
    3. Discuss Newton's third law
D. Investigate momentum
    1. Define momentum

2. Explain the conservation of momentum

E. Categorize and investigate energy
    1. Explain work
    2. Define the forms of energy
        a. Discuss kinetic energy
        b. Define potential energy
    3. Discuss the work-energy theorem

F. Discuss rotation with applications to problem solving
    1. Explain rotational kinematics
    2. Analyze rotational dynamics
    3. Define angular momentum

Attendance:

Attendance is required for this course. If you miss more than three lectures, then you may be dropped from the course. Written communication is required to excuse an absence.

Homework:

Homework will be submitted online via Expert TA. Late homework will be accepted with deductions on a question-by-question basis. Late questions will receive a 20% per day penalty.

Quizzes:

Each week, one quiz will be assigned to be completed online via Canvas. These will be short quizzes, and will primarily be conceptual questions. They will feature eight multiple choice questions and two short answer questions. If you email me a picture of a cute dog, cat, or other animal of your choice, then I will award you one extra quiz point.

Exams:

Throughout the quarter, there will be two exams during week 4 and week 8, respectively. They will feature short answer questions and extended response problems to be worked out. More details will be given closer to the exam dates. No makeup exams will be given unless under extenuating circumstances.

Inclusive Language

To foster civility and model effective academic collegiality, we use inclusive language in this course. As formulated in guidelines drafted by the Linguistic Society of America, such language "acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities."

I encourage you to share your preferred pronouns and terms of address, which we will use. In discourse and course materials, we will avoid gender-specific words when referring to people in general (people, for example, is preferred to mankind), and we will use gender-neutral pronouns unless gender needs to be specified. This includes they as a singular non-gendered pronoun, which is now widely considered standard usage.

Inclusive Teaching

As an educator who cares for all students and respects our college's core values of anti-racism, diversity, equity, inclusion, and accessibility, I value the diverse backgrounds and perspectives you bring to our course. My goal is to build on your prior educational successes, activate prior learning, reduce opportunity gaps and achievement gaps, and foster educational growth. In order to achieve this goal, I plan to get to know each of you individually, allowing me to connect you with the resources that will best support your well-being and academic excellence. I have high expectations for you, and I want you to succeed. I value your input, and I appreciate your constructive suggestions about how to further improve our course so all students feel they belong here.

Student Learning Outcome(s):

Examine critically 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.

Grade Distribution:

Assignment	Percentage
Homework	30%
Quizzes	10%
Exam 1	15%
Exam 2	15%
Final	30%

Grade Scale:

Grades will be assigned according to the following chart.

A+	98 - 100
A	93 - 97.9
A-	90 - 92.9
B+	88 - 89.9
B	83 - 87.9
B-	80 - 82.9
C+	78 - 79.9
C	70 - 77.9
D	60 - 69.9
F	Less than 60

Rough outline of the course:

This is a rough look at what the course may look like over the course of the quarter. Please note that this is subject to change as the quarter continues.

Week of	Topics	Assignments	Tests
April 7 - April 11	Introduction to Physics/1-D Kinematics	Hw 1	Quiz 1
April 14 - April 18	1-D Kinematics/Vectors	Hw 2	Quiz 2
April 21 - April 25	Vectors/2-D Kinematics	Hw 3	Quiz 3
April 28 - May 2	Newton's Laws	Hw 4	Exam 1, Quiz 4
May 5 - May 9	Applications of Newton's Laws	Hw 5	Quiz 5
May 12 - May 16	Work and Energy	Hw 6	Quiz 6
May 19 - May 23	Work and Energy/Potential Energy and Energy Conservation	Hw 7	Quiz 7
May 26 - May 30	Energy Conservation / Linear Momentum and Collisions	Hw 8	Exam 2, Quiz 8
June 2 - June 6	Linear Momentum and Collisions / Rotational Kinematics and Energy	Hw 9	Quiz 9
June 9 - June 13	Rotational Dynamics and Static Equilibrium	Hw 10	Quiz 10
June 16 - June 20	Gravity and Special Topics, if there is time	Hw 11	Quiz 11
Monday, June 23rd	6:15pm-8:15pm	STUDY!	Final Exam

Student Learning Outcome(s):

• Examine critically 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.

Office Hours:

Zoom	W	4:00 PM - 4:50 PM
Zoom	M	4:00 PM - 4:50 PM