Physics 50: Preparatory Physics - Winter 2021 Syllabus

Instructor: Peter Ho
Contact: hopeter@fhda.edu
Days: MW, 5:30 - 7:30 PM
Location: Online, Zoom meetings to be scheduled on Canvas with link
Office Hour: TTh, 5:30 - 7:30 PM
Textbook: OpenStax, *College Physics* is free to access online
Required Materials: Scientific Calculator

Course Description and Objective

In this course, we will work with concepts from physics to develop and solve problems through critical thinking and analyzing real world problems. We will be working with concepts involving kinematics, force, momentum, energy, and rotation. With these ideas, we will be applying knowledge taken from foundations in math by solving algebraic expressions to graphing functions.

Grading Criteria

The course will have three exams and quizzes along with daily homework assignments. If time permits, a project dedicated to group discussion and participation may be assigned. The total for the course is to be out of 100 percent with exams given equal weight.

Exam	20 %
Exam 2	20 %
Exam 3	20 %
Quizzes	15 %
Homework & Attendance	5 %
Final Exam	20 %
Total	100 %

Note: There is more emphasis on doing the homework assignments as the total amounts to a graded exam. Keep this in mind!

This course will not be graded on a curved scale. Therefore, the grade distribution follows the standard grading scheme (A: 90-100, B: 80-90, etc.)

On Student Commitment

Learning physics for the first time can both be rewarding and demanding. For every reward, there is an equal amount in the demand to maintain an understanding of the material. A recommendation is to commit at least eight hours per week, or double the amount in class time outside of the classroom to complete assignments and prepare for the exams. Furthermore, to some level of abstraction, the ability to connect physics concepts to mathematical formulation is a necessary component to this course. Solving problems through the means of linear expressions, graphs of functions, and some direct relationships are needed.

Exams

There will be three midterm exams for the quarter followed by a final exam at the end. Exam coverage comes for all previous homework and quiz topics leading up to the exam (i.e. cumulative).

On the format of the exam: exams will be an open note and open book type of exam due within a certain time limit. The time limit is up to the discretion of the instructor, but may range from 12 to 24 hours to complete, sign, and submit through canvas. Students must show all work in order to show reasoning that guides the reader to the desired solution.

Quizzes

There are a total of seven quizzes to be given on Wednesdays at the end of lecture as a take-home assignment in addition to homework. The first quiz will focus solely on mathematical principles taken from algebra to precalculus to ensure understanding before we apply these ideas to physics problems.

Homework

Homework will be assigned for lecture held, meaning that there will be an assignment due the following day it is assigned. Because this is a large class, homework will not be graded based on correctness. With that, **grading will be based on completeness**. Please show all your work in order to receive full credit. Homework will be graded out of three points with three being complete.

Attendance and Classroom Policy with Extra Credit

Important!! While there is no requirement to turn on your camera during class, it is also courteous to have all microphones muted except for the instructor. Please be present as possible with some classroom participation. Participation lends to bonus and/or extra credit applied to the final grade. Attendance will be taken, and will be accounted for when deciding final grade outcomes.

Tentaive Class Schedule of Topics

Week	Topics Covered	Assignments	Exam/Quiz/Review
1/4 - 1/7	Review Math	Class notes	Quiz 0
1/11 - 1/14	Vector Application	§2.1 - §2.8	Quiz 1
1/18 - 1/21	Kinematics: Part I	§3.1 - §3.3	Quiz 2
1/25 - 1/28	Kinematics: Part II	§3.4 - §3.5	**Exam 1**
2/1 - 2/4	Newton's Laws: Part I	§4.1 - §4.5	Quiz 3
2/8 - 2/11	Newton's Laws: Part II	§5.1 - §5.3	Quiz 4
2/15 - 2/18	Linear Momentum	§8.1 - §8.7	**Exam 2**
2/22 - 2/25	Work and Energy	§7.1 - §7.5	Quiz 5
3/1 - 3/4	Work-energy Theorem	§7.6 - §7.9	Quiz 6
3/8 - 3/11	Rotational Dynamics	§10.1 - §10.3	**Exam 3**
3/15 - 3/18	Angular Momentum	§10.3 - §10.4	Review
3/22 - 3/26	**Final Exam**	**Final Exam**	**Final Exam**

Note: Please keep in mind this is a tentative schedule and is subject to change.

On Academic Integrity - Agreement to Terms

Physics 50 will be held online for the rest of Winter 2021 quarter. This means that academic integrity is at the forefront of leading issues for students and instructors taking classes online today. We are committed to upholding the values of De Anza College as a community college to ensure the integrity of student work and personal effort in their academic role. As an agreement to these terms and criteria, each student must sign the following statement to their role upholding the values of academic integrity.

"As an enrolled student of De Anza college in Physics 50, I, _____ agree to the terms that by upholding the values put forward by De Anza's statement on academic integrity. I will accept that in the event, or by taking on the risk of copying the work of others without credit that I accept a zero for the assignment or a failing grade for the course will be given. In addition to the risks, I am aware of online services such as Chegg, Slater, and other forums where students may post questions for answers. Therefore, **I will not rely** on these resources other than for understanding course material leading up to a test or quiz. Other resources include and are not limited to: working with others over Discord, Skype, and other communication software during an exam. Lastly, I have reviewed the course syllabus, and agree to abiding to the course structure."

Signature _____   Date _____

Student Learning Outcome(s):

*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.