Physics 2A Spring 2019

Section	PHYS-2A-03 & -04 CRN: 46294 & 46295
Lecture Instructor	Samuel MaQuilon
Email	maquilonsamuel@fhda.edu
Office Hours	Fri 12:30pm-1:30pm; Or by Appointment.
Lecture Hours	Mon-Thurs 9:30-10:20am
Lecture Room	MLC111
Textbook	Fundamentals of Physics, 9th/10th ed, Halliday, Resnick, Walker
Prerequisites Co-requisite:	Math 1A
Final Exam Date	Tuesday, Dec 11, 9:15-11:15 a.m.
SLO	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.

Topics

This course introduces Newtonian Classical Mechanics with limited calculus. Students should leave this course with an understanding of how to make mathematical models of systems of interest and then apply basic Newtonian principles to discover how these systems behave. This sort of quantitative reasoning is useful not only for understanding the physical world we see around us, but also in any technical field including engineering and computer science. We will cover kinematics, which is motion of objects in 1 and 2 dimensions with some knowledge of their accelerations and other quantities, but without regard to forces acting on them. This will include projectile motion, circular motion, and relative motion. We will also cover dynamics, which determines the motion of objects by reasoning about forces acing on them, using Newton's laws, study different types of forces, and introduce work, energy, and power. We will also study momentum, rotational motion, gravitation, oscillations, and waves.

Chapters covered in the Book:

Chapter 1: Intro & Measurement
Chapter 2: 1-D Motion & Kinematics
Chapter 3: Vector Analysis
Chapter 4: 2-D Kinematics & Projectile, Circular and Relative Motion
Chapter 5: Newton's Laws
Chapter 6: Frictional Forces, String and Springs
Chapter 7: Work & Kinetic Energy
Chapter 8: Potential Energy & Conservation of Energy

Chapter 9: Linear Momentum
Chapter 10: Rotation
Chapter 11: Torque & Angular Momentum
Chapter 13: Gravitation
Chapter 15: Oscillations
Chapter 16: Waves
Chapter 17: Sound Waves (If time permits)

Attendance

In order to comply with federal guidelines De Anza College requires students to attend class and class attendance records to be kept. A student may miss a few classes for medical or personal reasons, however, **unexplained absence of more than 2 consecutive days or frequent absence may result in a student being dropped from the course**, and **unexcused missed quizzes cannot be made up**. Late arrivals count as absences at my discretion. All labs must be attended unless there is a strong medical reason for absence. Missing more than 2 labs can result in being dropped from the course.

Homework

I will be assigning selected homework's from each Chapter in the textbook that will count towards your grade. (See grading scale) If you are absent on the day homework is due, you must scan and email the homework to me by no later than 2 hours after the class. You must then bring a hard copy of your homework the next day. If you have an issue that prevents you from finishing a piece of homework on time, you must talk to me or email me about it at as soon as you realize it and least 1 day prior to the due date. I will consider each request on a case-by-case basis. Late homework will be accepted only at my discretion and if accepted I will deduct points for late Homework. For the homework questions that are not selected to be turned in will not be collected or count towards your grade, however, it is very important to work on both collected and uncollected homework's as part of your study! I have also worked out some example problems in the class notes which I will send you after every lecture. This will make concrete the ideas discussed in the lectures by allowing you to apply them immediately. When I write the Quizzes and Exams I will base the questions from **both collected and uncollected HW and the class notes**. I will also try to set almost exclusively problems that have answers in the back of the textbook. If you have difficulty with the homework you can come to office hours, ask me just before or after a lecture, work together with other students, or go to the Math and Science Tutorial Center (**Student Success Center**). Doing these problems will help you prepare for the tests and quizzes! The set problems should not be viewed as the only problems you can do: you are strongly encouraged to look through all of the problems at the end of each chapter and consider how each should be approached. You should read the textbook and make notes from it.

Quizzes

There will be 3 quizzes on the material covered in the lectures. These quizzes will typically be given prior to the Midterms. The quiz questions will be based on homework questions or problems discussed in class. Make sure you do the homework, both collected and uncollected, so you can do well on the quizzes!

Tests

There will be two midterm tests set in class time, in addition to the final exam. In order to do well on the tests, read the textbook, review the lecture notes and do the collected & uncollected homework problems. Note: If there is any dispute about marking, I will consider it only within two school days of the paper being returned to you. Grades for the final exam are final and not subject to dispute.

Cheating

In the case that a student is found to be cheating on a piece of work or test, the grade for that will be zero. Plagiarism, which includes copying answers found on the internet, is cheating. You are encouraged to use resources you find online, but you must write up answers on your own, in your own style, and you must understand what you are writing.

Evaluation

Quizzes 16%
HW 4%
Midterms 32% (16% each)
Labs 16%
Final 32%

Projected Grading Scheme:

96% → 100% = A+
90% → 95.9% = A
88% → 89.9% = A-
86% → 87.9% = B+
78% → 85.9% = B
76% → 77.9% = B-
74% → 75.9% = C+
65% → 73.9% = C

54% → 64.9% = D

0% → 53.9% = F

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

*In order to test lab skills students are expected to gain 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.