

PHYSICS 4A (L2 #22095)
Spring 2019
(Jan 22-May 24)
Laney College

Instructor: Dr. Mohebi

Class Room: L-D200

Lab: A274

Office: Room A272

Text: *Physics for Scientists and Engineers, Vol I& II, 4th ed., D. Giancoli*

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Lec. hrs: Tu 5:30-8:20 PM; Th 5:30-6:20 PM

Lab hrs: Tu 2:30-5:20; Th 6:30-9:20 PM

Office hrs: Tu 1:30-2:30; Th 4:30-5:30 PM,

Course Description: This course is the first in the physics sequence for students who had calculus. It is a comprehensive study of major topics of physics: Motion, forces, gravity, energy, momentum, rotation, equilibrium, fluids, oscillations, waves, and sound. Several technological applications of these principles are discussed. A problem solving approach is used, emphasizing both conceptual understanding and mathematical techniques. This course is transferable to UC/CSU. 5 Units.

Prerequisites: Calculus, Geometry, Trigonometry, with grade >C.

STUDENT LEARNING OUTCOMES: Students explain and discuss both verbally and in written language the physics concepts listed in course content, as well as their relevance to everyday events and circumstances in a broad interdisciplinary context.

Students use algebra, trigonometry, and calculus to set up mathematical descriptions of physical systems and to calculate measurable quantities that provide an understanding of the physical environment in terms of the concepts listed in the course content.

Students set up laboratory equipment safely and efficiently, plan and carry out experimental procedures, identify possible sources of error, implement techniques that enhance precision, reduce and interpret data, and report verbally and in written language the experimental data, results, and assessment of reliability.

Homework: Homework assignments will be given for each chapter. All homework assignments are to be completed and submitted on line using the MasteringPhysics web page provided by the Pearson. (<https://www.pearsonmylabandmastering.com/northamerica/masteringphysics/>). Students must register and pay a fee to have access to the course. In order to register on line a course ID is required. MasteringPhysics course ID is MPMOHEBI69953. *Only enrolled students are permitted to use this ID.* Homework due dates are given in the table below.

Laboratory: The lab report is due one week after the experiment is performed. Experiments in the laboratory are designed to give students the opportunity to explore the concepts discussed in the lecture more closely. Each experiment is setup, and performed by the students in small groups. Measurements are made, calculations are performed, and the results are returned in a lab report. Group members who do not fully participate will not receive full grade even if the lab report is complete. The grade for two labs will be dropped. ***There will be no opportunity to make up a missed Lab.*** On time attendance is required for both lab and class time.

Exams: There will be 2 (2-hr) exams, and a final comprehensive exam, ***no make-up exams.***

Grade: Homework 15%, Lab reports 10%; Midterm Exams 20% each; Final 35%.

Final Grade: 90%-100%=A, 80%-89.9%=B, 70%-79.9%=C, 60%-69.9%=D

Attendance: Students are expected to attend all scheduled classes and stay during the entire time in order to learn the material. Students may be dropped from the course if they miss class, are late to come, and early to leave more than four times. Students who are missing a class are responsible for the material given in that period, such as

homework, worksheets, etc. Dropping the course is the student's responsibility. Students who are not registered in the class are not allowed to attend the class.

Important Dates & Approximate Schedule

02/03	Last day to drop a course with a refund, without "W"
02/15-18	Washington's B-Day
04/1-7	Spring Break, (No Class)
03/21	Professional day (No Class)
04/26	Last day to drop a course with a "W"
05/21	Final Exam (Tuesday 5:30-7:20 PM)

W	Date	Tu Lab 2:30-5:20	Tu Lec. 5:30-8:20	Th Lec. 5:30-6:20	Th. Lab 6:30-9:20	HW Problems
1	01/22	L1	Intro, Ch1	Ch2	L1: Measurement	C1: 5,10,17,21,24,31,41,53,56,57
2	01/29	L2	Ch2	Ch3	L2: Const. Acceleration, HW1	C2: 7,11,21,27,33,44,51,57,58,72
3	02/05	L3	Ch3	Ch4	L3: Projectile Motion, HW2	C3: 7,8,10,17,22,24,32,46,54,80
4	02/12	L4	Ch4	Ch5	L4: Atwood's Machine, HW3	C4: 10,16,18,27,32,35,46,48,52,70
5	02/19	L5	Ch5	Rev	L5: Vectors, HW4	C5: 6,10,17,18,20,29,35,52,55,59
6	02/26	Rev	Ex1(1-5)	Ch6	L6: Friction, HW5	C6: 7,9,14,24,26,29,31,33,39,57
7	03/05	L6	Ch6,7	Ch7	L7: Work & Energy,	C7: 11,15,18,23,25,35,43,55,56,57
8	03/12	L7	Ch7	Ch8	L8: Energy Conservation, HW6	C8: 8,14,16,18,20,34,35,36,43,88
9	03/19	L8	Ch8	PDNC	PDNL	C9: 12,16,25,26,34,41,56,59,64,77
10	03/26	L9	Ch9	Ch9	L9: Ballistic Pendulum, HW7	
11	04/02	SBNC	SBNC	SBNC	SBNC	
12	04/09	L10	Ch10	Ch10	L10: Rotational Inertia, HW8,9	C10: 15,23,26,28,35,46,51,56,67,81
13	04/16	L11	Ch11	Ch11	L11: Rolling, HW10	C11: 7,24,29,36,37,38,39,48,50,54
14	04/23	Rev	Ex2 (6-11)	Ch12	L12: Static Equilibrium, HW11	C12: 7,11,15,21,26,28,38,39,48,58
15	04/30	L12	Ch12	Ch13	L13: Archimedes Pr.	C13: 5,6,9,15,18,20,29,30,42,56
16	05/07	L13	Ch13	Ch14	L14: Harmonic Osc. HW12	C14: 10,17,20,27,32,33,36,39
17	05/14	L14	Ch14	Ch15	Review, HW13, HW14	C15: 9,16,24,44,48,52,60
18	05/21	Rev, HW15	FEx(1-15)			

How to succeed in this course: Read and keep this syllabus. Attend all scheduled classes and laboratories. Actively participate in the lab and class. Ask questions. Speak your mind. Do all the homework assignments on time. The homework is done on line, however, get a print out of the problems, make a notebook and write all your solutions in the notebook in an organized manner and keep for your study before exams. Do read the textbook. Find answers to your questions. Don't miss a review session right before an exam. Don't miss an exam or a lab. Use your extra time in the exam to check your results. Have fun and *just do it*.

Role of Mathematics: This course is based on calculus; however it is a physics course with the primary focus on physics. Math is a tool to help understand the physics. Do not allow your mathematical skill (or lack of it) get in the way of understanding physics.

Academic Dishonesty and Misconduct: Students are expected to exhibit a respectful behavior for other students and instructor. Students may be asked to leave the classroom if they are disrupting the class. Academic dishonesty will not be tolerated. Anyone caught cheating on an exam will receive zero point for that exam. No Bathroom breaks during exams, and the only electronic equipment allowed is a calculator.

Class Etiquette: Come to class on time. Turn off all electronic equipment in class. Remain in class during the entire session. Inform your instructor if you are going to miss a class. Do not eat or drink (water is ok) while in class. Only enrolled students are allowed in the classroom.

NOTE: Instructor reserves the right to change this syllabus to improve the learning in the class or to account for unforeseen circumstances. Students will be notified of any changes.