PHYSICS 4A Spring 2021

Instructor: Stephanie Dickson

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Office hours: Mondays and Thursdays-12:30 to 2:20 P.M.

Final exam date: Tuesday, June 22, 1:45 to 3:45 P.M.

Text: *Physics for Scientists and Engineers*, 9th edition, by Serway and Jewett or equivalent

Prerequisites: Concurrent enrollment in (or successful completion of) Math 1B.

The goal of this course is to cover the three conservation laws of classical mechanics: energy, momentum, and angular momentum, along with oscillations. This includes the necessary details to successfully manipulate those laws: kinematics, vectors, problem solving techniques, mathematical techniques, and various definitions including Newton's universal law of gravitation.

The class will meet Monday through Friday at 1:30 P.M. via ConferZoom available only through the Canvas platform. Please have a web cam or cell phone camera on during lecture. You may use the chat window to ask questions, or raise your hand and un-mute yourself.

Quizzes will be held once a week and are based on the homework sets. The quiz question will be presented toward the end of class; your solution will be a pdf or jpg scanned and uploaded to Canvas. Quizzes are time-limited, closed notes, closed book, closed internet, camera on, pen only, starting with a blank piece of paper and ending with a complete, detailed solution. A quiz submission identical to the homework problem instead of the quiz question will be scored a zero. No late submissions will be accepted. There are no make up quizzes. Your lowest quiz score will be dropped.

Midterm Exams: There will be eight midterm questions spread throughout the quarter to comprise your midterm grade. Each question is worth 25 points and will be presented toward the end of class. As with the quizzes, there will be a short time window, also camera on, closed notes (book, internet), starting with a blank piece of paper and worked in pen, scanned and submitted through Canvas. No late submissions or email submissions will be accepted. In order to pass the class, you must take all midterm exam questions. Make ups for midterms will be available only with prior consent. The make up must be completed within three days.

The final exam will be held during the scheduled time: June 22, 1:45 to 3:45 P.M. The final exam will consist of questions similar to the midterm exam questions requiring your detailed solution scanned as a pdf and submitted into Canvas within the specified time window. In order to pass the class, you must take the final exam.

There is no extra credit.

A student caught cheating will receive a zero score for the assignment in question. Subsequent incidents will be referred to the division dean.

Labs meet once a week through ConferZoom. Lab attendance is required. You may miss one unexcused lab only. A quadrille-ruled bound notebook, pen, scientific calculator, and ruler are required.

Your grade will be based on:

Quizzes: 20%

Lab: 15%

Midterms: 35%

Final: 30%

A: 92 %
A-: 90 %
B+: 88 %
B: 82 %
B-: 80 %
C+: 78 %
C: 60 %
D: 50 %
F: 49% and below

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.

*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.