PHYSICS 4A

Spring 2026
Instructor: Stephanie Dickson
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Office hours: Mondays and Wednesdays S13, 12:30 PM – 1:20 PM, Fridays on Zoom 2:30 - 2:55 PM

Final exam date: Tuesday, June 23, 1:45 to 3:45 PM

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

Prerequisites: Successful completion of Math 1A, Physics 50, and concurrent enrollment in Math 1B.

The goals of this course are to understand the three conservation laws of mechanics: energy, momentum, and angular momentum. fluids, thermodynamics, waves, and optics, and to solve the variety of problems in those topics. 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 in person Monday through Thursday and remotely on Friday. The Friday class will meet synchronously; the Zoom link is available through the Canvas platform.

Homework: Working problems is the best way to learn this challenging subject. Each module has a homework problem set available in Canvas. Working additional problems from the text is recommended. The homework will not be collected, but one question will be similar to an in-class quiz on the due date.

Quizzes based on the homework will be held weekly. There will be a second quiz, sometimes an in-class quiz, and other times a multiple choice quiz at the end of Friday's Zoom lecture. Your lowest quiz scores will be dropped.

Midterm Exams: There are two midterm exams consisting of four questions each. Make-ups for midterms will be available only with prior consent. The make-up should be completed within three days of the exam date.

The final exam is a comprehensive in-class exam.

To pass the class you *must* take the final exam (in both lab and lecture) and both midterm exams.

Lab attendance is required to pass the class.

An "incomplete" can only be assigned if the student has completed 90% of the class work. The compelling reason would be a serious illness or equivalent.

There is no extra credit.

A student caught cheating will receive a zero score for the assignment in question.

Your grade will be based on:

Quizzes: 15%

Lab: 15%

Midterms: 40%

Final: 30%

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

Student Learning Outcome(s):

• Examine new, previously un-encountered problems by critically analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.

• Acquire skill and 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.

Office Hours:

M,W	12:30 PM - 1:20 PM	S13
F	2:30 PM - 2:55 PM	Zoom