PHYSICS 4B

Spring 2022
Instructor: Stephanie Dickson
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Office hours: Mondays and Wednesdays 12:30 PM – 1:20 PM
Final exam date: Tuesday, June 21, 1:45 to 3:45 PM

Text: https://archive.org/details/physicsforscient01tipl
https://archive.org/details/physicsr01resn
Physics for Scientists and Engineers, 9th edition, by Serway and Jewett or equivalent

Prerequisites: Successful completion of Math 1B, Physics 4A and concurrent enrollment in Math 1C.

The goal of this course is to understand the four Maxwell equations of classical electro-dynamics in integral form and the Lorentz force equation and solve problems using them.

The class will meet Monday through Friday at 1:30 PM via Zoom available 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.

Class Notes: To encourage both good study skills and attendance, your daily class notes submitted to Canvas at the end of lecture will be given one (1) point per day for a total of five (5) points per week. The upload window will close at the end of class. There is no credit for notes submitted from the recording in the event you miss the class.

Homework: Homework assignments are due prior to the beginning of class on the due date. Homework will be given one (1) point per successfully completed problem.

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 scanned and uploaded to Canvas. Quizzes are ten points per problem, time-limited, closed notes, closed book, closed internet, camera on, pen preferred, 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. If you need to take a make-up quiz, you must have prior consent, and it can be no more than three days later. 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, pen preferred, 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.

Labs meet once a week through Zoom. Lab attendance is required. You may miss one unexcused lab only. A quadrille-ruled bound notebook, pen, scientific calculator, and ruler are required. Grading for lab is based on weekly quizzes, lab reports and the lab final.

The final exam will be held during the scheduled time: June 21, 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.

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

An "incomplete" will only be assigned as a final course grade when a *serious* illness or some other severe problem is encountered by the student.

There is no extra credit.

Photo ID is required by all students at every exam.

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

Your grade will be based on:
Class notes: 5%
Homework: 5%
Quizzes: 15%
Lab: 15%
Midterms: 30%
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):

*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 electricity and magnetism.
*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.