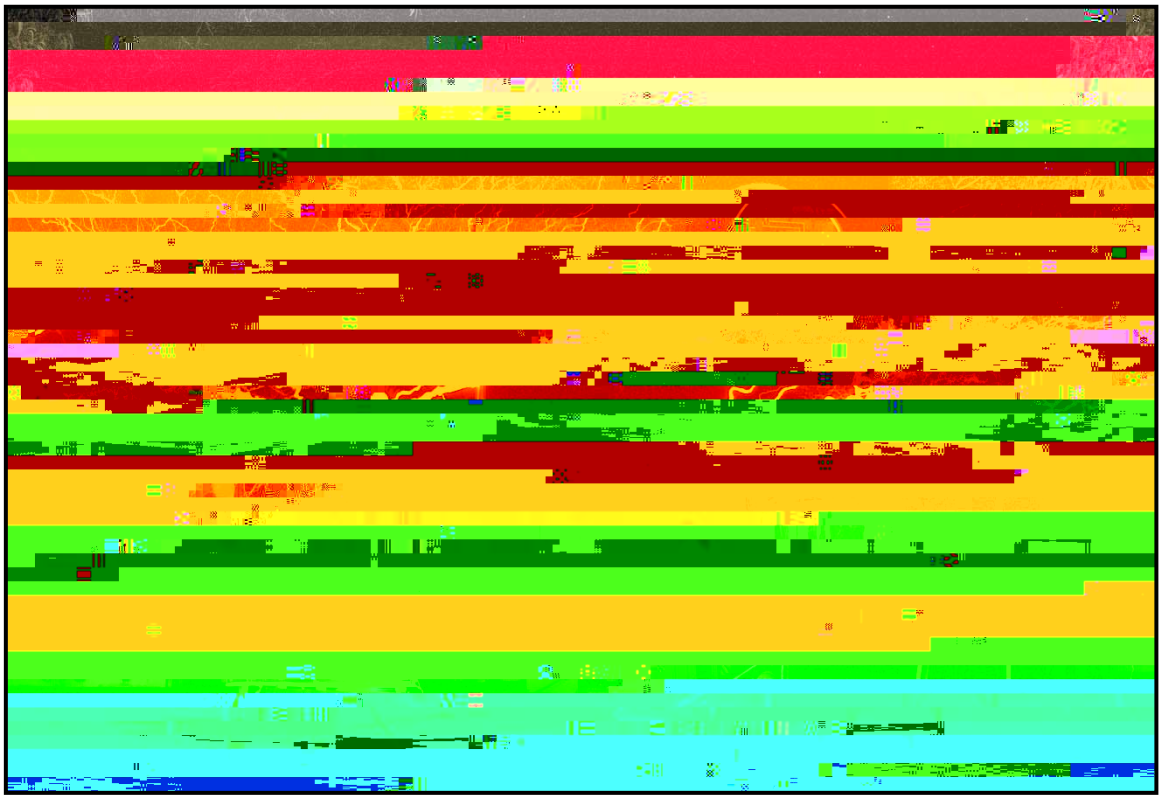
University of Alaska Fair anks Spring 2022

Physi s 342

Cla ical hy ic II: Electricity and Magneti m
4 Credit

In tructor – Dr. Mark Conde



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Overview

Description

This will be a standard undergraduate introduction to the vector-calculus based description of classical electricit and magnetism. Topics covered will include static and d namic electric and magnetic fields, both in vacuum and in the presence of materials, the Lorentz force law, Maxwell's equations, potential formulations, and Po nting's theorem. These concepts would be covered in three one-hour lectures per week plus one one-hour tutorial/recitation session. However, in 0 , the lectures will be replaced b independent stud , with onl the one tutorial session being conducted live.

The course will be closel linked to the assigned textbook (Griffiths) although we will cover the topics in a slightl different order.

Course goals and student learning outcomes

Upon completion of this course students will:

Be familiar with the classical description of electricit and magnetism in terms of Maxwell's equations
Be able to solve a wide variet of vector-calculus based problems in electricit and magnetism using Maxwell's equations.

M goal as an instructor is to provide ever student with maximum possible opportunit for success. This means that I tr to be as flexible as possible with the course requirements, to avoid creating needless hurdles. Nevertheless, some penalties for missed or late work are necessar m policies in this regard are outlined below.

Instructor information

Instructor:	Dr. Mark Conde
Office locations:	Reichardt room 113 and Elve room 706C.
Office Phone:	474-7741
Email:	mgconde alaska.edu
Office hours:	I do not intend to establish fixed office hours for this small class. I will alwa s be available immediatel after lectures, or at other times b arrangement. If ou need to see me, speak to me after class or send me an email, to setup a time.

App

Should it become apparent during the semester that students are not able to understand the course material without lectures, I ma be able to add extra class sessions each week. However, I am teaching this class as an overload, so I cannot guarantee that this will be possible.

Recitation essions

While I do not plan to present lectures this semester, I DO plan to conduct one s nchronous recitation per week, again using the class zoom link above. There are two purposes for these recitations. First, the will provide an opportunit for students to ask questions and seek help with concepts that need extra clarification. Second, I intend to use this session to work through example problems that I have chosen to correspond closel with homework assigned for that week. M current plan for scheduling the recitations is to use the Frida 0 :1 -03:1 pm time slot that, under more normal circumstances, would be assigned for a lecture. This will give students time after the recitation over the weekend to tackle the homework problems that will due on Monda s.

Homework

Homework will be assigned each week and will be due at 6 pm each Monda . I will assign homework b uploading the relevant problem sheet to the Blackboard and Gradescope sites for this class. Homework should be submitted via Gradescope – I will explain this process during the first class session.

You are encouraged to work with others, but ou are prohibited from simpl cop ing other's work. Homework will count heavil toward our final grade, as well as provide me with feedback regarding our understanding of the material.

Problems assigned in this class can often be solved in several wa s, with each solution involving a number of steps. So please be aware that even if ou submit a correct solution to a problem, I ma not recognize it as correct if it's poorl presented. While I will accept almost an work that ou turn in, it is unlikel that I'll award man points for a homework or exam solution unless it:

Is neatl laid out
Is largel free from crossing out ewrite- q c M c t Wo D t F : t F : 0 - c M c t Wu

- Exam 1: Feb 14 - Feb 18
- Exam : Mar 1 - Mar
- Final: Apr - Apr 9

Complex formulae and ph sical constants will be provided for exam problems that require them. I although, of course, the take-home format will also allow students to lookup an required formulae on their own.

Course policies

Grading

The course grade will consist of the following components

Two one-hour midterm exams	30%	(1 % each exam)
One two-hour final exam	30%	
Homework	40%	

I will post all grades online, using the UAF's "Blackboard" s stem (http://classes.uaf.edu).
All registered students have access to this s stem for checking their grades. I p e ra x t r ai d ri e o U

Missed or late work

Two midterms and a final exam will be given in this course. In the case of documented illness, clash with another UAF commitment, or other emergency, a make-up exam may be given, at the discretion of the instructor. An unexcused absence for an exam will lead to 0 points earned on that exam.

Problem sets will generally not be accepted after the due date, without documented evidence of illness or genuine emergency. Students have ten days to submit late problem sets.

COVID-19 tatement

COVID-19 statement: Students should keep up-to-date on the Universit of Alaksa policies, practices, and mandates related to COVID-19 b regularl checking this website:

https://sites.google.com/alaska.edu/coronavirus/uaf/uaf-students?authuser=0

Further, students are expected to adhere to the universit 's policies, practices, and mandates and are subject to disciplinar actions if the d