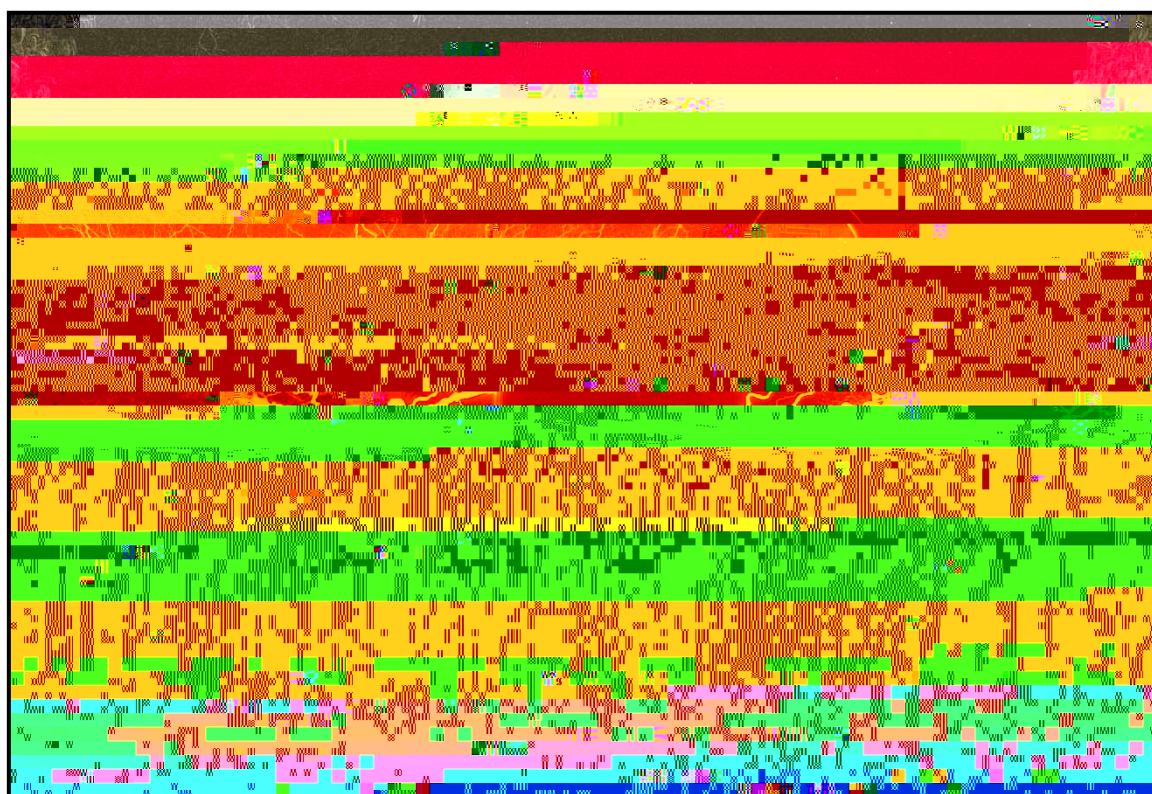

Physics 342

Classical Physics II: Electricity and Magnetism
4 Credit

Instructor – Dr. Mark Conde



<http://tealadownload.com/Teal18Week2FullBright3000.jpg>

Overview

Description

This will be a standard undergraduate introduction to the vector-calculus based description of classical electricity and magnetism. Topics covered will include static and dynamic electric and magnetic fields, both in vacuum and in the presence of materials, the Lorentz force law, Maxwell's equations, potential formulations, and Poynting's theorem. These concepts would be covered in three one-hour lectures per week plus one one-hour tutorial/recitation session. However, in 2022, the lectures will be replaced by independent study, with only the one tutorial session being conducted live.

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

Course goals and student learning outcomes

Upon completion of this course students will:

- Be familiar with the classical description of electricity and magnetism in terms of Maxwell's equations

- Be able to solve a wide variety of vector-calculus based problems in electricity and magnetism using Maxwell's equations.

My goal as an instructor is to provide every student with maximum possible opportunity for success. This means that I try to be as flexible as possible with the course requirements, to avoid creating needless hurdles. Nevertheless, some penalties for missed or late work are necessary. 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 always be available immediately after lectures, or at other times by arrangement. If you 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 may 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 sessions

While I do not plan to present lectures this semester, I DO plan to conduct one synchronous recitation per week, again using the class zoom link above. There are two purposes for these recitations. First, they will provide an opportunity 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 closely with homework assigned for that week. My current plan for scheduling the recitations is to use the Friday 02:10-03:10 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 be due on Mondays.

Homework

Homework will be assigned each week and will be due at 6 pm each Monday. I will assign homework by 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 you are prohibited from simply copying other's work. Homework will count heavily toward your final grade, as well as provide me with feedback regarding your understanding of the material.

Problems assigned in this class can often be solved in several ways, with each solution involving a number of steps. So please be aware that even if you submit a correct solution to a problem, I may not recognize it as correct if it's poorly presented. While I will accept almost any work that you turn in, it is unlikely that I'll award many points for a homework or exam solution unless it:

- Is neatly laid out

- Is largely free from crossing out notes

- Exam 1: Feb 14 - Feb 18
- Exam 2: Mar 21 - Mar 2
- Final: Apr 2 - Apr 29

Complex formulae and physical constants will be provided for exam problems that require them. 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% (15% each exam)
One two-hour final exam	30%
Homework	40%

I will post all grades online, using the UAF's "Blackboard" system (<http://classes.uaf.edu>).

All registered students have access to this system for checking their grades. **Impairment kri e ri o r 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 the opportunity to make up missed work.

COVID-19 statement

COVID-19 statement: Students should keep up-to-date on the University of Alaska policies, practices, and mandates related to COVID-19 by regularly checking this website:

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

Further, students are expected to adhere to the university's policies, practices, and mandates and are subject to disciplinary actions if they do not.

