

Syllabus – Spring 2021

PHYS F342: Classical Physics II – Electricity and Magnetism

Course Information

Credits	: 4 credits
Meeting Times	: MWF – 2:15pm ~ 3:15pm, R – 2:45pm ~ 3:45pm
Meeting Locations	: Zoom Meeting
Course Website	: Google classroom

Instructor Information

Instructor	: Prof. Hyunju Kim Connor
Office	: 706B Elvey, Reichardt 120
Email	: hkconnor@alaska.edu
Phone	: (907) 474-5421
Office Hours	: MW – 3:15pm ~ 4:15pm (Zoom), R – 3:45 ~ 4:45pm (Zoom), or by appointment (Zoom)

Prerequisites

Physics 341 or permission of instructor

Textbook

Introduction to Electrodynamics by D. J. Griffiths, 4th edition, Prentice Hall Publishing.

Course Description

Statics and dynamics of electric and magnetic fields in vacuum and in the presence of materials. Lorentz force law. Maxwell's equations.

Course Goals

To acquire a basic understanding of foundations of electrodynamics.

Student Learning Outcomes

1. Students will be familiar with the classical description of electricity and magnetism in terms of Maxwell's equations.
2. Students will be able to solve a wide variety of vector-calculus based problems in electricity and magnetism using Maxwell's equations.

Instructional Methods

Four 1-hr online lectures per week

- Synchronous lectures will be held on MWF from 2:15 – 3:15 pm and R from 2:45 – 3:45pm via [Zoom Meeting](#). Students are expected to attend the virtual lectures at the scheduled time.
- Every Zoom class will be recorded and provided to students via [Google classroom](#) in case that their internet connection is not ideal.

Course Schedule

We will cover Chapters 1- 8 of Griffiths in this course. Here is a tentative schedule.

Week	Dates	Class Topics
1-2	Jan 11 – Jan 21	Chap. 1 Vector Analysis
3-5	Jan 25 – Feb 04	Chap. 2 Electrostatics & Gravitational potential
6	Feb 08 – Feb 18	Chap. 3 Special Techniques
7-8	Feb 22 – Mar 04	Chap. 5 Magnetostatics
9	Mar 08 – Mar 11	Spring Break (No Classes)
10-11	Mar 15 – Mar 25	Chap. 4 Electric fields in Matter
12-13	Mar 29 – Apr 08	Chap. 6 Magnetic fields in Matter
13	Apr 12 – Apr 15	Chap. 7 Electrodynamics
14-15	Apr 19 – Apr 26	Chap. 8 Conservation Laws

Grading:

Homework	35%
Attendance/Participation	5%
Midterm #1 (Feb 26, 2:15 – 3:15 pm)	20%
Midterm #2 (Mar 26, 2:15 – 3:15 pm)	20%
Final exam (Apr 29, 1:30 – 4:00 pm)	20%
Total	100%

Final grades will be returned as letter grades with plus/minus modifiers. These will be derived from your overall percentage grade. The approximate conversions for each letter grade will be as follows: A+ (>97.5), A(>87.5), A-(>85), B+(>82.5), B(>72.5), B-(>70), C+(>67.5), C(>57.5), C-(>55), D+(>52.5), D(>42.5), D-(>40), F (<40)

Course Policies:

- Attendance and participation in class is expected of all students.
- Homework will be posted and collected via the [Google Classroom](#). Please scan or take photos of your homework and submit the electronic file (pdf, jpg, or any other format) to the [Google Classroom](#) by the deadline. Late homework will not be accepted without evidence of illness or genuine emergency.
- Students are encouraged to work together on the homework problems. However, the final materials must be their own answers.
- Plagiarism and cheating are not accepted with no exception.

Covid-19 Information

Students should keep up-to-date on the university's 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 comply.

Academic Honesty

UAF expects and requires academic honesty from all members of the University community, and takes any act of plagiarism and cheating seriously. It is expected that all assignments, including homework and reports, that are turned in for this course must be the original work of the individual student. Failure to comply with this policy will result in penalty as stipulated under UAF regulations.

Student Protections and Services

Every qualified student is welcome in my classroom. As needed, I am happy to work with you, disability services, veterans' services, rural student services, etc. to find reasonable accommodations. Students at this university are protected against sexual harassment and discrimination (Title IX), and minors have additional protections. As required, if I notice or am informed of certain types of misconduct, then I am required to report it to the appropriate authorities. For more information on your rights as a student and the resources available to you to resolve problems, please go to the following site: www.uaf.edu/handbook/.

UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual: <https://alaska.edu/nondiscrimination/>.

Your instructor follows the University of Alaska Fairbanks Incomplete Grade Policy: “The letter “I” (Incomplete) is a temporary grade used to indicate that the student has satisfactorily completed (C or better) the majority of work in a course but for personal reasons beyond the student’s control, such as sickness, has not been able to complete the course during the regular semester. Negligence or indifference are not acceptable reasons for an “I” grade.”

Disabilities Services

The UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. Any student who may need assistance with disabilities, should feel free to contact the instructor or directly to the Office of Disabilities Services (208 WHIT) by calling 907- 474-5655, or through email: uaf-disability-service@alaska.edu.

Effective Communication

Students who have difficulties with oral presentations and/or writing are strongly encouraged to get help from the UAF Department of Communication’s Speaking Center (907-474-5470, speak@uaf.edu) and the UAF English’s Department’s Writing Center (907-474-5314, Gruening 8th floor), and/or CTC’s Learning Center (604 Barnette Street, 907-455- 2860).