

# Physics 530 – Fall 2022

## **Prof. Marc W. Caffee**

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## **Course Information**

Fall, 2022

TTh: 900-1025

Location: PHYS 201

The course assignments and grade book are on BrightSpace.

## Course Description

This semester-long sequence is a review of the theory of electricity and magnetism. The topics are electrostatics, boundary value problems, magnetostatics, and electrodynamics.

## Prerequisites

Successful completion of the following courses: undergraduate level [PHYS 27200](#) and the equivalent of [PHYS 330](#) or [PHYS 430](#)

## Course Goals

- Review and understand the theory of electrostatics.
- Be able to solve boundary value problems relevant to electrostatic
- Develop and understanding of the nature of magnetism and magnetostatics.
- Develop the skills to solve electrodynamics problems.
- Develop the skills needed to succeed in a graduate level (600) electricity and magnetism course needed to complete the core curriculum.

## Learning Objectives

The emphasis of the course is on problem solving skills electrostatics and magnetostatics. We will consider problems in vacuum and in materials.

## Course Requirements

All students are required to take two mid-term examinations and a final examination.

Homework assignments will be given throughout the semester. Each homework problem will be given an assigned value of 5 points. Partial credit will be given. It is important that students hand in legible work. If the instructors cannot read the work and score of zero will be given for the work. Clear legible work is much likelier to be given partial credit. It is expected that homework will be handed in on time. To make other arrangements talk to me in class.

Quizzes may be given in class; they will be announced before hand. There may also be some pre-class quizzes. These will be available on Blackboard and then handed in during class.

The grade components for the course are as follows:

- Final – 30%
- Midterm 1 – 15%
- Midterm 2 – 15%
- Homework – 30%
- In-class quizzes – 10%

## Required Text

Text – Introduction to Electrodynamics  
Author – David J. Griffiths  
Publisher – Pearson, New York  
ISBN 13: 978-0-321-85656-2

## Policies

### General Course Policies

- **E-mail policy:** I will do my best to answer e-mail in a timely fashion. I do not mind trying to answer any course question using e-mail but you have to be specific and precise in your writing.
- **Late arrival/early departure:** I understand that there are often conflicts and you may either be late or have to leave early. Be courteous, we are in a big lecture room so just be courteous to your classmates by leaving or arriving quietly.
- **Cell phones/computers:** Please turn off the volume on computers and cell phones during lecture.
- **Class participation:** Be prepared to participate in the classroom by answering questions if asked or helping to work problems in groups.

### Grading

- A 92.00 – 100.00
- A- 90.00 - 91.99
- B+ 88.00 – 89.99
- B 82.00 – 87.99
- B- 80.00 – 81.99
- C+ 78.00 – 79.99
- C 70.00 – 77.99
- D 60.00 – 69.99
- F < 59.99

Changes in these guidelines may be necessary; the examination scores will be used to determine whether these guidelines will be modified.

### Academic Dishonesty

Any effort to represent somebody else's work as your own, or allowing your work to be represented as somebody else's, is cheating.

Working with another student on your homework is not cheating and, in fact, is encouraged. In the event that you work with other students on homework assignments it is your responsibility to hand in your own work. Copying the work from another student is cheating. Likewise, having somebody else solve assigned problems for you is cheating.

If a student is found cheating, he or she will receive an F for the course and be reported to the Dean of Students. In serious cases the Dean may suspend or expel the student from the university.

*Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples*

*of dishonesty." [Part 5, Section III-B-2-a, University Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]*

Purdue's student guide for academic integrity can be found at [www.purdue.edu/odos/osrr/academicintegritybrochure.php](http://www.purdue.edu/odos/osrr/academicintegritybrochure.php)

### **Attendance**

Purdue University policy is that student participation is expected in every regularly scheduled class. There are nevertheless instances when an absence is justified. The Purdue University Student Handbook describes the procedures for these eventualities. An excerpt is quoted below.

*Students are expected to be present for every meeting of the classes in which they are enrolled. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts or absences can be anticipated, such as for many University sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible...For unanticipated or emergency absences when advance notification to an instructor is not possible, the student should contact the instructor as soon as possible by email, or by contacting the main office that offers the course. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases of bereavement, the student or the student's representative should contact the Office of the Dean of Students,*

The Purdue University for absence can be found at <http://www.purdue.edu/odos/services/classabsence.php>

### **Grief Absence Policy for Students**

*Purdue University recognizes that a time of bereavement is very difficult for a student. The University therefore provides the following rights to students facing the loss of a family member through the Grief Absence Policy for Students (GAPS). GAPS Policy: Students will be excused for funeral leave and given the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for misses assignments or assessments in the event of the death of a member of the student's family.*

### **Missed or Late Work**

Students are expected to complete assignments by the due date. Homework can only be handed in late pending approval of the instructor. Homework not handed in will be given a grade of zero.

The mid-term examinations and final examination must be taken. Students are expected to take these examinations at the scheduled times. Failure to take tests will result in a score of zero for that examination. In the event of allowable absence, as determined by Purdue University policy, a make-up examination will be given as soon as possible after the examination time. Failure to make-up an examination will result in an incomplete score for the course.

Missed quizzes cannot be taken later. In the event that the absence is allowed an excused absence grade will be given. This grade is the average of the student's quiz grades. To receive an excused absence grade for a quiz the student must notify the instructor in writing either before the absence or within a week of the absence.

### **Violent Behavior Policy.**

*Purdue University is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent Behavior impedes such goals. Therefore, Violent Behavior is prohibited in or on any University Facility or while participating in any university activity.*

Additional information can be found at

<http://www.purdue.edu/policies/facilities-safety/iva3.html>

### **Students with Disabilities.**

*Purdue University is required to respond to the needs of the students with disabilities as outlined in both the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 through the provision of auxiliary aids and services that allow a student with a disability to fully access and participate in the programs, services, and activities at Purdue University.*

*If you have a disability that requires special academic accommodation, please make an appointment to speak with me within the first three (3) weeks of the semester in order to discuss any adjustments. It is important that we talk about this at the beginning of the semester. It is the student's responsibility to notify the Disability Resource Center (<http://www.purdue.edu/drc>) of an impairment/condition that may require accommodations and/or classroom modifications.*

### **Emergencies**

*In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.*

### **Nondiscrimination**

*Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.*

*Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in [Executive Memorandum No. D-1](#).*

This syllabus is subject to change.