



DEPT. OF PHYS. and ASTRO.

PHYS 272

Electric & Magnetic Interactions

Spring 2022

<http://www.physics.purdue.edu/phys272/>

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Textbook and Required Materials:

Matter & Interaction II – Electric and Magnetic Interactions, 4th Edition, , Ruth Chabay and Bruce Sherwood, Publisher: Wiley, or any of the options listed on the [course website](#).

Physics 27200 Laboratory Manual will be posted each week on the Brightspace website.

iClicker2, Audience response device, Publishers Bedford, Freeman and Worth

Course Webpage:

You will find everything you need on the Brightspace website and course website, including this syllabus, textbook information, course announcements, Help Center hours, and other important resources.

Course Components:

Lecture

Get points for coming to lecture! Expect iClicker questions every lecture; these are just attendance points requiring to participating at least one poll and count towards your final grade. *Register your iClicker in Brightspace.*

Reading

Make your life easier! Read the assigned parts of the text *before* each lecture. Lecture notes will be posted before each class. Here's a hint for making your brain a lean, mean, thinking machine: when you see the “?” in the text, stop and answer the question before continuing.

Homework

Homework will be assigned on Brightspace using a system called WileyPlus. The system contains a compendium of problems that we will use for our course. Two homework assignments will be due each week with DEADLINE: 11:59 PM on the day indicated in the course schedule. LATE POLICY: 50% credit is given until $24 \times 7 = 168$ hours after the deadline and within the allowed number of attempts. No credit will be given after that! You will have 10 attempts per question in each homework assignment.

Recitation

Weekly recitation sessions meet for one hour. You are required to attend the recitation section assigned to you by the Registrar. Recitations begin the *first week* of class.

Laboratory

Weekly laboratory sessions meet for two hours. You are required to attend the lab section assigned to you by the Registrar. Labs begin the *first week* of class.

Exams

Attendance is required for ALL THREE EXAMS.

The two midterm exams are scheduled to be given on:

Exam 1: Monday 02/14, 6:30-7:30pm, STEW 183

Exam 2: Monday 3/28, 8:00-9:00pm, EE 129 & LILY 1105

The final exam schedule is here:

<https://roomschedule.mypurdue.purdue.edu/Timetabling/exams.do>

The date for the final exam schedule is set by the Registrar later in the semester. Do not make arrangements to leave campus before this date!

Grades

Grades will be determined from points earned in each of these categories:

midterm Exams (2)	30%
Final Exam	20%
Labs	15%
Homework (WileyPlus access via Brightspace)	15%
Recitation	15%
iClicker (Lecture)	5%
TOTAL	100%

We will use an absolute scale to set the grades as given in the table below. *At the end of the semester, if the grades are lower than we think is fair then we may lower the grade thresholds, but we will not raise the thresholds.* (This means if you get at least 89%, you are guaranteed to get an A- or better.)

Grade	Percentage
A+	95%
A	92%
A-	89%
B+	85%
B	82%
B-	79%
C+	75%
C	72%
C-	69%
D+	65%
D	62%
D-	59%
F	<59%

Please check your scores at any time. It is your responsibility to ensure that the grades are accurate. *Report any errors to your recitation instructor and the professor within 2 weeks from when the grades are recorded.*

iClicker Scoring: Points can be earned every lecture (except the first). Please report any technical issue to Dr. Huckleberry via. dhuckleb@purdue.edu

Learning Outcomes

By the end of the course, you will be able to:

- Understand the concepts of electric field, magnetic field, and an atomic description of matter to describe polarization.
- Calculate electric fields and electric potentials produced by charge distributions, analyze and solve electrical circuits, calculate magnetic forces, induction, and related topics using calculus-based mathematical tools.
- Have a general understanding of the Maxwell's equations and the electromagnetic radiation.
- Construct computational models using VPython and perform experiments based on physics principles learned in the lectures.

Help!

This course is hard. Plan to study hard! Here are some ways to get a better grade:

A. Go to the Physics Help Center, Room 290 in the physics building. It is staffed during regular hours all day long on Tuesday and Friday by Teaching Assistants who are trained in this material.

B. Ask your instructor during lab, recitation, or lecture.

C. See the instructor or TA's during office hours. We are happy to work through physics problems with you.

D. Use the buddy system: study with a friend in class. You are encouraged to work on homework together – discussing ideas and concepts reinforces the material for everyone involved in the conversation. Just be sure that what you turn in is your own work that you fully understand.

Requesting Extension of Deadlines

Life happens. If you have a valid reason (such as illness, family emergency, or multiple exams the same day), you may request an extension of up to one week for anything due on Brightspace. Do not abuse this privilege! We will reject excessive or undocumented requests.

To request a homework extension, email your instructor providing documented proof of the reason for extension within 48 hours of the deadline. Homework extensions requested after 48 hours of the deadline will not be considered.

Absences and Excused (EX) Grades

If you are absent from a lab/recitation for a valid and documented reason, you may request an excused grade. To request an excused grade email the corresponding TA providing documented proof of the reason for excuse within 48 hours of the missed lab/recitation. Excuses requested after 48 hours of the missed lab/recitation will not be considered.

iClicker Questions: Any student with a valid approved reason for missing a lecture may receive an EX grade. To request an EX grade, email your instructor providing documented proof of the reason for excuse within 48 hours of the missed lecture. *Excuses requested after 48 hours of the missed lecture will not be considered.*

Exams: Unexcused absences from exams will receive a score of zero. Make-up exams will be given to any student with a valid, approved, and documented reason for missing an exam. The student should email the instructor (if possible in advance) and provide documented proof of the reason for missing the exam within 24 hours of the exam's date. Makeup exams requested after 24 hours of the exam's date will not be considered.

Makeup exams or EX grade will typically be given for these three circumstances: (a) illness; (b) personal crisis (e.g., automobile accident, death of a close relative, weather conditions which make it impossible to get to the university); and (c) required attendance at an official Purdue activity (e.g., exam conflict, athletic event, band concert). Contact the instructor IN ADVANCE (if possible) by email with documented proof. If you will be or have been out for five consecutive days, you must contact the Dean of Students; they will send us a letter.

- In case of illness, go to the Purdue University Student Health Center (PUSH). You should receive a slip from the Center with the date, doctor's name, and a telephone number. OR go to your private physician and obtain a written excuse. Send your excuse to the instructors and TAs via email. (We only need a doctor's excuse, not a diagnosis or any personal information.)
- Guidance on class attendance related to COVID-19 are outlined in the [Protect Purdue Pledge](#) on the Protect Purdue website.
- In case of accidents, funerals, etc., contact your instructor by email with evidence of your excuse (police accident report, funeral notice, etc.).
- In case of required attendance at an official Purdue activity, notify your TA and instructors via email at least a week in advance of the event, including documentation.

Academic Honesty

You are encouraged to work on homework together – discussing ideas and concepts reinforces the material for everyone involved in the conversation. Just be sure that what you turn in is your own work that you fully understand.

The following are examples of cheating:

- Any effort to present somebody else's work as your own, or allowing your work to be presented as somebody else's.
- Having somebody else solve problems assigned for you.
- Entering iClicker responses for anybody else.
- Being in possession of more than one iClicker in lecture.
- Have someone sign attendance for you (or sign for an absent student) in a Lab or Recitation.

If a student is found cheating, the incident will be thoroughly investigated by the Dean of Students, and appropriate disciplinary actions will be taken. In serious cases the Dean may suspend or expel the student from the university.

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breeches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Possible Changes

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. You can get information about changes in this course at the Brightspace website.

Classroom Guidance Regarding Protect Purdue

We will follow protocols from [Protect Purdue](#).

Any student who has substantial reason to believe that another person is threatening the safety of others by not complying with Protect Purdue protocols is encouraged to report the behavior to and discuss the next steps with their instructor. Students also have the option of reporting the behavior to the [Office of the Student Rights and Responsibilities](#). See also [Purdue University Bill of Student Rights](#) and the Violent Behavior Policy under University Resources in Brightspace.

Emergency Response

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 daily basis.

- To report an emergency, call 911.
- If you experience any symptoms of COVID-19 or suspect you may have been exposed to someone with COVID-19 stay home and call the Protect Purdue Health Center at 765-496-INFO.
- To obtain updates regarding an ongoing emergency, sign up for Purdue Alert text messages, view www.purdue.edu/ea.
- There are nearly 300 Emergency Telephones outdoors across campus and in parking garages that connect directly to the PUPD. If you feel threatened or need help, push the button and you will be connected immediately.
- If we hear a fire alarm during class we will immediately suspend class, evacuate the building, and proceed outdoors. Do not use the elevator.
- If we are notified during class of a Shelter in Place requirement for a tornado warning, we will suspend class and shelter in [the basement].
- If we are notified during class of a Shelter in Place requirement for a hazardous materials release, or a civil disturbance, including a shooting or other use of weapons, we will suspend class and shelter in the classroom, shutting the door and turning off the lights.

Please review the Emergency Preparedness website for additional information.
http://www.purdue.edu/ehps/emergency_preparedness/

Accessibility

Purdue University is committed to making learning experiences accessible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

Counseling and Psychological Services

- If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try [WellTrack](#). Sign in and find information and tools at your fingertips, available to you at any time.
- If you need support and information about options and resources, please contact or see the [Office of the Dean of Students](#). Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.
- If you find yourself struggling to find a healthy balance between academics, social life, stress, etc. sign up for free one-on-one virtual or in-person sessions with a [Purdue Wellness Coach at RecWell](#). Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is completely free and can be done on BoilerConnect. If you have any questions, please contact Purdue Wellness at evans240@purdue.edu.

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services \(CAPS\)](#) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office of the second floor of the Purdue University Student Health Center (PUSH) during business hours. CAPS also offers resources specific to COVID-19 on its [website](#). Topics range from "Adjusting to the New Normal" to "How to Talk with Professors about Personal Matters."

Basic Needs Security

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday. Considering the significant disruptions caused by the current global crisis as it related to COVID-19, students may submit requests for emergency assistance from the [Critical Needs Fund](#).

Nondiscrimination Statement

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 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. A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in our course Brightspace under University Policies.

CAPS Information:

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.