Course Description and Objectives

In this course, you will learn basic concepts of electricity and magnetism. “Charge” is one of the most fundamental properties of particles, and electrical fields and potentials arise from the charges. Moving charges (“current”) causes the magnetic field. The relations between the charge and the electric and magnetic fields are summarized in the Maxwell’s equations. Electricity and magnetism are closely connected and they can form the electromagnetic waves.

1) Learn the basic concepts of electromagnetism: charge, field, potential
2) Understand the connection between electricity and magnetism
3) Learn how to set up and solve problems applying concepts and mathematical tools learned in class.

Communication

The main communication method is the Blackboard announcement and email. **Do NOT use the Course Messages in Blackboard. I am not checking it.**

When you email me, include the following:
- Your name and UTEP ID
- The course name and CRN

Seminars (Workshops)

You need to sign up for one of the seminar courses. TA's will solve example problems in each workshop session and give quizzes.

You should sign up for one of the following Seminar courses.

- 15212 R 12:00pm-12:50pm Bell Hall 130A  TA: Gabriel Rodriguez (grodriguez72@miners.utep.edu)
- 15255 R 4:30pm-5:20pm  UGLC 334  TA: Monica Herrera (mmherrera3@miners.utep.edu)
- 15256 F 1:30pm-2:20pm  UGLC 208  TA: Monica Herrera (mmherrera3@miners.utep.edu)

Seminars will begin on week 2 (week of September 4).
Lab for PHYS2321

If you signed up for the associated lab course (PHYS2121), the lab is managed independently. Any questions about the lab should be sent to the lab coordinator, Karla Carmona (kcarmona@utep.edu). Labs will begin on the week of September 11th (The first lab will be on Sep. 13th Wednesday). See the Blackboard for the lab course for more details. You will get a separate grade for the lab course.

Miner Learning Center Tutoring Service

This course is supported by the Miner Learning Center (MLC) with complimentary tutoring services. Watch for announcements on Blackboard for details.

Grade

Grading Policy:

- Syllabus exam: 5%
- Attendance: 10%
- Homework: 30%
- Seminars: 10%
- Mid-term exam: 20%
- Final exam: 25%

The final grade will be determined by your score and the overall performance of the class.

If your final score is
- 90 or above: your grade will be A.
- 80 or above and below 90: your grade will be B or better.
- 70 or above and below 80: your grade will be C or better.
- 60 or above and below 70: your grade will be D or better.

DO NOT ASK FOR ANY EXTRA CREDIT.

Late submission of homework will be penalized by 10%/day. Make-up exams will be granted only in extraordinary circumstances, and you will have to provide documentations to prove the emergency.

Exams: Syllabus exam + Midterm exams + Final exam

Syllabus exam (5%):
The syllabus exam will be on Blackboard. Finish it by September 8th.
BB Home Page ➔ Exams ➔ Syllabus exam

Midterm exam (20%):
The midterm exam will be on Thursday, October 19, 1:30pm – 2:50pm.
It will cover chapters 22 – 27.
Midterm exams will be taken during class hour.

Final exam (25%):
The final exam is on Thursday, Dec 14, 1:00 pm – 3:45 pm.
It will be a comprehensive exam (covering chapters 22-32).

More details about midterm and final exams will be announced before each exam.
**Attendance**

Attendance will be checked during the class at random. If you can’t attend the class due to a legitimate reason, inform me in advance and get approval. **If you miss a class due to an emergency, you need to provide documents to prove the emergent situation as soon as possible.**

**Textbook and Homework**

**Textbook:**

Physics for Scientists & Engineers: A Strategic Approach (By Randall D. Knight, 5th Edition)

![Physics for Scientists & Engineers](image)

The class will follow the textbook, and homework problems will come from the problems at the end of the chapters. Renting or buying the textbook is strongly encouraged.

**Online homework:** Mastering Physics, Pearson  
Course name: PHYS2321_Shim_Fall2023  
Course ID: shim99942  
Student Registration Instruction for Mastering Physics is on the Blackboard.

Full access to the Mastering Physics website is required (Temporary access will expire in 14 days).

First homework (Homework #0) is now available on Mastering Physics. It is a review on physics and mathematics.

Regular homework will typically be available each Thursday and the due date is next Sunday, but it will vary depending on the course progress. (You will have about 10 days to finish each homework, except for the last homework.) Pay attention to the deadline. **Late homework submissions will be penalized by 10%/day.**
# Course Overview and Weekly Schedule

## Course overview

Ch. 22 Electric Charges and Forces  
Ch. 23 The Electric Field  
Ch. 24 Gauss’s Law  
Ch. 25 The Electric Potential  
Ch. 26 Potential and Field  
Ch. 27 Current and Resistance  
Ch. 28 Fundamentals of Circuits  
Ch. 29 The Magnetic Field  
Ch. 30 Electromagnetic Induction  
Ch. 31 Electromagnetic Fields and Waves  
Ch. 32 AC Circuits

## Weekly Course Schedule (subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Lecture</th>
<th>Homework</th>
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<tbody>
<tr>
<td>Week1</td>
<td>Aug 29 &amp; Aug 31</td>
<td>Intro/Chapter 22</td>
<td>Homework #0</td>
</tr>
<tr>
<td>Week2</td>
<td>Sep 5 &amp; Sep 7</td>
<td>Chapter 23</td>
<td>Homework #1</td>
</tr>
<tr>
<td>Week3</td>
<td>Sep 12 &amp; Sep 14</td>
<td>Chapter 23, Chapter 24</td>
<td>Homework #2</td>
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<tr>
<td>Week4</td>
<td>Sep 19 &amp; Sep 21</td>
<td>Chapter 24, Chapter 25</td>
<td>Homework #3</td>
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<tr>
<td>Week5</td>
<td>Sep 26 &amp; Sep 28</td>
<td>Chapter 25, Chapter 26</td>
<td>Homework #4</td>
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<tr>
<td>Week6</td>
<td>Oct 3 &amp; Oct 5</td>
<td>Chapter 26</td>
<td>Homework #5</td>
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<tr>
<td>Week7</td>
<td>Oct 10 &amp; Oct 12</td>
<td>Chapter 27</td>
<td>Homework #6</td>
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<tr>
<td>Week8</td>
<td>Oct 17 &amp; Oct 19</td>
<td>Review, Midterm Exam</td>
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<tr>
<td>Week9</td>
<td>Oct 24 &amp; Oct 26</td>
<td>Chapter 28</td>
<td>Homework #7</td>
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<tr>
<td>Week10</td>
<td>Oct 31 &amp; Nov 2</td>
<td>Chapter 29</td>
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<tr>
<td>Week11</td>
<td>Nov 7 &amp; Nov 9</td>
<td>Chapter 29, Chapter 30</td>
<td>Homework #8</td>
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<tr>
<td>Week12</td>
<td>Nov 14 &amp; Nov 16</td>
<td>Chapter 30</td>
<td>Homework #9</td>
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<tr>
<td>Week13</td>
<td>Nov 21 &amp; Nov 23</td>
<td>Chapter 31, Thanksgiving</td>
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<tr>
<td>Week14</td>
<td>Nov 28 &amp; Nov 30</td>
<td>Chapter 31, Chapter 32</td>
<td>Homework #10</td>
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<tr>
<td>Week15</td>
<td>Dec 5 &amp; Dec 7</td>
<td>Chapter 32, Review</td>
<td>Homework #11</td>
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<tr>
<td>Week16</td>
<td>Dec 14</td>
<td>Final Exam</td>
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Technology Requirements

Lectures are given person-to-person in the classroom. Some lectures may be online/pre-recording if necessary.

Lecture slides will be available on Blackboard after lectures.

Midterm and final exams will be in-person.
No use of anything that can access the internet is allowed during exams.

Course communication will be via email and Blackboard.
Ensure your UTEP email account is working.
Check the Blackboard for announcements.

When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

Homework is online at the Mastering Physics website.
You will have to get access to Mastering Physics and register for the course.
See the Registration Instruction on the course Blackboard page.

IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk (https://www.utep.edu/technologysupport/) as they are trained specifically in assisting with the technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

Course Policies

Illness Precautions:
Please stay home if you have symptoms of a communicable illness. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations.

Students with Disabilities:
If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at https://www.utep.edu/student-affairs/cass/. Accommodations might include but are not limited to note takers, readers, or extended time on exams and assignments. Please take care of this as soon as possible and before the first exam.

Scholastic Integrity:
Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones’ own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.