

**THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF PHYSICS**

Course #:	PHYS 2421, CRN 12260 Three workshops: CRN 10977, 11626, 11627 (Enroll in one) Enroll in Labs: Instructor Karla Carmona kcarmona@utep.edu
Course Title:	Introductory Electromagnetism
Credit Hrs:	4.0
Term:	Fall 2021
Course Meetings & Location:	MW 12:00 – 1:20 p.m. Lectures and workshops online, exams on campus
Prerequisite Courses:	-
Instructor:	Dr. Chunqiang Li
Office Location:	PSCI 221E
Contact Info:	Phone #: (915) 747-7537 E-mail: cli@utep.edu Fax #: (915) 747-5447
Office Hours:	Monday 11am-12pm, or by appointment
Final Exam:	Friday, December 10 th 2021, 1:00-3:45 pm
Safety Rules:	<p>Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.</p> <p>The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.</p>
Course Delivery:	<p>1. I will give live lectures on Blackboard at scheduled times, i.e. MW 12-1:20 pm. These sessions will be recorded.</p> <p>2. TAs will give workshops and quizzes at scheduled times.</p>
Textbook(s), Materials:	<p>Physics for Scientists and Engineers, by Randall D. Knight, 4th Ed., Pearson. Chapter 22-32. ISBN: 978-0134081496</p> <p>Please try to complete the weekly reading before lecture. Lectures will be more effective and you will be ready to ask questions on topics that may have not been clear from the reading.</p>

Course Objectives (Learning Outcomes):	This semester you will be learning about the amazing world of electricity and magnetism and it all revolves around the physical property known as “charge”. A simple way to think about EVERYTHING you will learn in this course is that you will learn about 1) stationary charges, 2) flowing charges (moving together with more or less constant velocity), 3) accelerating charges. Also you will learn the coupling between electricity and magnetism, which induces electromagnetic waves!
Grading Policy:	40% Final Exam: cumulative with emphasis on most recent 40% Midterm Exams: two exams during the semester 20% Lab: A student will receive an incomplete for the course if he/she doesn't pass the laboratory. 10% (extra) Quiz during workshops

<p>Course Activities/Assignments:</p>	<p>Workshop TAs will solve exemplar problems during each workshop session, and give quizzes.</p> <p>Home work Supplementary reading, answering questions, and solving problems will be assigned in advance in the lecture. Also, our textbooks come with problems at the end. Homeworks will be assigned after each chapter.</p> <p>It is essential that students become well versed in problem solving methods, which means developing the writing skills to set up a problem, including diagrams and mathematical manipulation to achieve the final answer. A numerical score will be assigned for each homework set based on graded and counted problems.</p> <p>Feel free to form study groups with your classmates and seek help from any lecture instructor during his or her office hours as you attempt to solve the problems. Make sure that you understand the solutions and write them up yourself. There is a strong correlation between homework scores and exam scores!</p> <p>Exams Exams will consist of problems very similar to the worked example problems in the text and the assigned homework problems. Exams will be strictly closed-book. You should bring with you a pocket calculator to work out the answers to numerical problems: make sure the battery is charged!</p> <p>No cell phones allowed in the exams!</p> <p>Full credit on exams will be awarded for complete solutions including drawing a figure and deriving necessary relations if appropriate, and for numerically accurate answers with units. Partial credit may be given for correct derivations if the answer is numerically incorrect due to arithmetic errors. No credit will be given for relations written down at random or for numerical answers that are not supported by a reasonably complete derivation.</p> <p>The best way to prepare for the exams is to study the example problems and work out the assigned homework problems regularly. You should work as many additional problems from the text as you can: this is the best way to ensure your understanding of the material.</p>
<p>Make-up Policy:</p>	<p>An extension of the due date for the homework as well as the make-up of missing exams will be granted only in extraordinary circumstances.</p>
<p>Attendance Policy:</p>	<p>No credit will be granted for just attending the class.</p>
<p>Academic Integrity Policy:</p>	<p>Please see: http://academics.utep.edu/Default.aspx?tabid=23785</p>

Civility Statement:	<ul style="list-style-type: none"> • Cell phones and pagers should be turned off during class time. • When absences occur, it is your responsibility to obtain handouts and notes from your peers. When possible you will complete the activities you have missed. • Academic integrity is to be practiced at all times.
Disability Statement:	<p>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 Building, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.</p> <p>The student is responsible for presenting to the instructor any accommodation letters and instructions.</p>
Military Statement:	<p>If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor at the beginning of the semester.</p>
Recruitment of Note-Taker	<p>The Center for Accommodations and Support Services (CASS) provides services for students with disabilities. Some students can benefit from Peer Note Takers. If you are a good note taker and are interested in earning a stipend of \$100 for being a Note-Taker for the semester, please log into http://cassportal.utep.edu to sign up. Help a fellow student in being successful at UTEP, do not forget to include your Note Taker assignment in your resume.</p>

Course Tentative Schedule

Instructions: PHYS 2421, Instructor: Chunqiang Li

Week 1 Readings	In preparation for Week 1's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 22 Electric Charges and Forces
Week 2 Readings	In preparation for Week 2's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 23 Electric Field (part)• Field models and some examples
Week 3 Readings	In preparation for Week 3's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 23 Electric Field (part)• Parallel plate capacitor
Week 4 Readings	In preparation for Week 4's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 24 Gauss's law
Week 5 Readings	In preparation for Week 5's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 25 Electric Potential (part)• Electric potential energy
Week 6 Readings	In preparation for Week 6's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 25 Electric Potential (part)• Electric potential of several examples
Week 7 Readings	In preparation for Week 7's objectives, please read the following course materials. <ul style="list-style-type: none">• Ch 26 Potential and Energy• Prepare for midterm exam 1 (Ch 22-26)
Week 8 Readings	In preparation for Week 8's objectives, please read the following course materials. <ul style="list-style-type: none">• Midterm exam 1 Ch 22-26

Blackboard

	<ul style="list-style-type: none">• Review of midterm exam• Ch 27 Currents and resistances (part)
Week 9 Readings	<p>In preparation for Week 9's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 27 Currents and resistances (part)• Conductivity and resistivity
Week 10 Readings	<p>In preparation for Week 10's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 28 Fundamental of circuits
Week 11 Readings	<p>In preparation for Week 11's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 29 Magnetic field (part)
Week 12 Readings	<p>In preparation for Week 12's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 29 Magnetic field (part)• Ch 30 Electromagnetic induction (part)
Week 13 Readings	<p>In preparation for Week 13's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 30 Electromagnetic induction (part)
Week 14 Readings	<p>In preparation for Week 14's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 31 Electromagnetic Fields and Waves (part)• Prepare for midterm exam 2 (Ch 27-31)
Week 15 Readings	<p>In preparation for Week 15's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Ch 31 Electromagnetic Fields and Waves (part)• Prepare for midterm exam 2 (Ch 27-31)• Midterm exam 2 (Ch 27-31)
Week 16 Readings	<p>In preparation for Week 16's objectives, please read the following course materials.</p> <ul style="list-style-type: none">• Review of midterm exam 2• Ch 32 AC Circuits (part)