

# PHYS 2421 – Introductory Electromagnetism, Fall 2019 - CRN 11008

TR 3:00 – 4:20 PM, LART 107

**Instructor:** Jorge A. López

**Coordinates:** Office: PSCI 311, 747-7528, jorgelopez@utep.edu

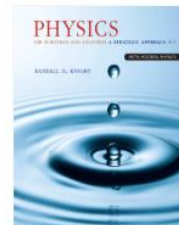
**Office hours:** Without appointment: TR 11:00 - 1:00 PM

With appointment: MW 1:00 - 4:00

**Prerequisite Courses:** PHYS 2420 or Instructor approval

**Textbook and materials needed:**

- Physics for Scientist and Engineers, Knight, Field, 4<sup>th</sup> Ed.
- Scientific calculator (no phone or tablet like calculators)



Physics for Scientists and Engineers, 4e

Knight

**Learning outcomes and objectives:**

Introductory Electromagnetism is the second part of a sequence of calculus-based introductory physics courses whose main objectives are to provide students with a rigorous description of electricity and magnetism (Charges, electric forces, electric fields and potential, current and magnetism, induction, time varying fields and electromagnetic waves) and to improve student's problem-solving abilities.

**Activities:** Class will be composed of two 1.5-hour weekly lectures with the instructor, a 1-hour weekly workshop/seminar, and a 2-hour weekly laboratory.

**Objectives:** Topics to be covered are shown in the list below. The pace will be about one chapter per week.

- Ch. 22: Electric charges and forces
- Ch. 23: Electric field
- Ch. 24: Gauss' Law
- Ch. 25: Electric potential
- Ch. 26: Potential and field
- Ch. 27: Current and resistance
- Ch. 28: Fundamentals of circuits
- Ch. 29: Magnetic field
- Ch. 30: Electromagnetic induction
- Ch. 31: EM fields and waves
- Ch. 32: AC circuits

**Assessment of Course:** Assessment will be through weekly quizzes, a final exam and the laboratory grade. Grade corrections of individual quizzes should be made within a week of receiving them, no grade changes of individual quizzes will be allowed after the end of the semester. Grade distribution:

- |                                 |     |
|---------------------------------|-----|
| • Weekly quizzes                | 55% |
| • In-class questions (iClicker) | 5%  |
| • Seminar/Workshop              | 5%  |
| • Final exam                    | 20% |
| • Laboratory                    | 15% |

**Homework:** Homework problems will be assigned but not collected nor graded, but solutions will be discussed in class and posted on Blackboard.

**Quizzes:** Weekly quizzes based on the homework and topics covered in the lecture of the previous week will be given every Thursday in the last 20 minutes of class. The use of a formula sheet is allowed, the formula sheet will be provided ahead of time through Blackboard, and students are responsible for downloading it and printing it, please do not add any material to it. In lieu of make-ups, the lowest two quiz grades will be dropped.

**Laboratory:** Attending the Laboratory is mandatory and the lab grade will count 15% of your total grade. **You must approve the lab with a minimum of 70% in order to approve the class.**

**Workshop/Seminar:** Attendance is mandatory. The grade for the workshop is worth 5% of the semester grade, and it will be based on attendance (1%) and a quiz over what was covered in the workshop (4%).

The workshops are:

- 12571 PHYS 2421, R 1:00 – 1:50 PM Quinn Hall 103
- 11092 PHYS 2421, T 10:00 – 10:50 PM EDUC 318

**If you cannot enroll due to capacity or a time conflict**, please send me a request for an over-write with your official name and UTEP ID number to give you permission to enroll in the workshop of your preference.

**Final Exam:** There will one comprehensive final exam based on the weekly quizzes and homework. The final exam will be worth 20% of the semester grade.

**In-class questions:** We will be using iClicker polling in class to grade multiple-choice questions. There will be about 100 questions in the semester. All questions will be worth up to 5% of your grade.

- 1) You can use an existing iClicker account. Students who do not have an iClicker account, need to go to <https://www.iclicker.com/students> and open one. To be able to transfer grades to Blackboard you should use your EXACT UTEP name and miners email address (username@miners.utep.edu) when creating your account. If you have an account and need to change your email address edit your account profile. If you have more than one account make sure to use only one of them for this class as you will only receive credit from a single account. When asked to register a remote device, choose “not at this time”; you do not need to purchase a subscription to use REEF/iClicker Polling as it is provided to you for free.
- 2) Using your smartphone, laptop, or tablet download the iClicker Polling app from the App Store or Google Play; iPad users need to change the search to iPhone App.
- 3) To participate in class your device should be able to connect to the university’s Wi-Fi (UTEPSECURE) or to your mobile data plan.
- 4) Add PHYS 2421 to your iClicker account by logging in at <https://www.iclicker.com/> and searching by Institution (UTEP) and adding PHYS 2421.
- 5) Finally, connect your Blackboard to your iClicker account by clicking on the following icon in your Blackboard account:



## **iClicker**

Dear students, please click [this link](#) to launch a special instance of iClicker, then log in or create a new iClicker account if you don't already have one. Signing into iClicker REEF through [this link](#) will allow me to synchronize your iClicker REEF scores with this Blackboard course.

To answer in-class iClicker questions **you have to be present in the classroom**. Please do not login and answer questions if you are not physically in the classroom, answering from a remote location will result in the loss of all iClicker points previously earned. Similarly, answering questions for another student is a violation of the University Honor Code, if you are caught voting for another student you will face disciplinary action.

**Make-up Policy:** There will be no make-up quizzes. Instead of make-ups, the lowest two quiz grades will be dropped. If more than two quizzes are missed, make-up quizzes will be given in cases of approved excuses (medical emergencies, personal situation, military duties, etc., all with written evidence). Make-up policy for the laboratory will be given by the lab instructor. There will be no make-ups for the final exam.

**Attendance Policy:** Attendance is not taken into account for the grade, but not attending the class will result in missing quizzes.

**Academic Integrity Policy:** Any student who commits an act of academic dishonesty is subject to discipline. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, and any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures, and available on the homepage of the Dean of Students at <http://sa.utep.edu/studentlife/>, may result in sanctions ranging from disciplinary probation, to a failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

**Civility Statement:** During class, please do not eat, sleep or read newspapers or any other material not related to class. Turn off cell phones, ipods, and any other devices which might disturb class. Use computers and tablets only for class purposes, and do not talk excessively (definition of "excessive" is up to the instructor).

**Disability Statement:** 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](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass).

**Military Statement:** Students being called for military duties need to contact the instructor as soon as possible.

**Drop deadline:** The College of Science will not accept any requests for class drops after the deadline.

## TENTATIVE CALENDAR

WEEK	CONTENT	OBSERVATIONS	QUIZ
8/26-30	Intro + Ch. 22.1 - 3		No quiz, lab or workshop.
9/2-6	22.4-5	Monday is a Holiday	1: 22.1 – 3
9/9-13	23.1 - 3		2: 22.4 – 5
9/16-20	23.4 – 7		3: 23.1 – 3
9/23-27	24.1 – 6		4: 23.4 – 7
9/30-10/4	25.1 – 7		5: 24.1 – 6
10/7-11	26.1 – 7	No classes – video lectures	
10/14-18	27.1 – 5		6: 25.1–7; 7: 26.1–7
10/21-25	28.1-5		8: 27.1 – 5
10/28-11/1	28.6– 9	Drop deadline: 11/1	9: 28.1 – 5
11/4-8	29.1 – 7		10: 28.6 – 9
11/11-15	29.8 – 10		11: 29.1 – 7
11/18-22	30.1 - 10		12: 29.8–10
11/25-29	31.1 – 7	Thanksgiving 11/28-29	
12/2-6	32.1 – 6	12/6 is dead day	
12/9-13		Final exam: Thursday, Dec. 12, 4:00 pm – 6:45 pm	