

**Syllabus**  
**Physics 4210, Electricity and Magnetism**  
**Fall 2025**

Regular Class Meeting Times: MoWeFr 9:00AM - 9:50AM, Phys 115

Recitation Meeting Times: We 1:00PM - 2:50PM, Phys 115

Instructor's Office Hours: MoWeFr 9:50AM - 10:50AM or by appointment

Instructor: Dr. Carlos Ordonez (or-dawn-ez)

Office: PHYS 302; Phone: 940-565-4860; Email: cao@unt.edu

Course Packet: A course packet is required for all meetings, exams and assignments for this class. PHYS 4210 Course Packet by C. A. Ordonez is available at Eagle Images, University Services Building, Room 124.

Scientific Calculator: A scientific non-communicating calculator is required for each class. The calculator should have the  $\sqrt{x}$ ,  $\ln(x)$ , and  $y^x$  functions and scientific notation.

Textbook: A textbook is required: Introduction to Electrodynamics, 5th Edition, by D. J. Griffiths, Cambridge University Press (2023). (The 4th edition can be used instead, as there is not much of a difference between the 4th and 5th editions. The course packet was written using the 4th edition.)

Attendance: Attendance is required.

Prerequisite(s): PHYS 1520 (or PHYS 2220) and MATH 2730.

Course Requirements:

Three Exams: Each Counts 30%

Final Exam: Counts 30%

Assignments: Count 10%

Exams: The lowest of the four exam grades is dropped. If an exam is missed for any reason, it will be the one dropped. Make-up exams will **not** be given. Exams are multiple choice and open: book/notes/course packet. Answer sheets are provided. If you are more than 20 minutes late to an exam, you will not be allowed to take the exam. If you turn in your exam, you must leave the room.

Assignments: Each assignment is due at the beginning of class one week following the designated start date. Any assignments that have start dates during the first week of class may be turned in up to one week late without penalty. You may only turn in assignments for credit during class, and assignments may not be turned in after the class period that precedes pre-finals days. You may help each other when working assignments (but not when working exams). However, each person must submit separate work. After you finish an assignment, you will be responsible for having it graded (if a grader is available) or grading it yourself (if answers are provided). You may revise your work and regrade the assignment up to the due date. An assignment is penalized 30 points (out of 100) if turned in late by up to one week. Assignments are not accepted more than one week late. Staple each assignment separately and put your name on each. (The instructor has a stapler if you need one.)

Learning Objective: To develop analytical problem-solving skills and learn about electricity and magnetism. The class meetings are optimized to maximize the efficiency at which problem-solving skills are developed. A typical class meeting includes a class lecture with an interactive problem-solving component.

Learning Activities: Typical learning activities should include attending class, reading the course packet, reworking the examples worked in class, working the assignment problems, and working the extra practice problems before each exam. Note: You can take to each exam a hardcopy of your written solutions for problems that you work.

Some textbook-notation changes may be used including the following: Cartesian unit vectors  $\hat{x} \rightarrow \hat{i}$ ,  $\hat{y} \rightarrow \hat{j}$ ,  $\hat{z} \rightarrow \hat{k}$ ; radial cylindrical coordinate  $s \rightarrow r$  or  $s \rightarrow \rho$ ; vector position of a “source” point  $\mathbf{r}' \rightarrow \mathbf{r}_s$ ; longhand symbol for the letter  $\mathbf{r} \rightarrow \mathbf{R}$ , where  $\mathbf{R} = \mathbf{r} - \mathbf{r}_s$  and  $\mathbf{r}$  is the vector position of a “field” point.

## **Additional Information**

**Academic Integrity Standards and Consequences.** According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. A finding of academic dishonesty associated with an exam would result in a grade of zero for the exam.

**ADA Accommodation Statement.** The University of North Texas makes reasonable accommodation for students with disabilities. Students needing a reasonable academic accommodations must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the student will request their letter of accommodation. ODA will provide faculty with a reasonable accommodation letter via email to begin a private discussion regarding a student's specific needs in a course. Students may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to meet with faculty regarding their accommodations during office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the Office of Disability Access website.

**Emergency Notification & Procedures.** UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to the UNT Learning Management System (LMS) for contingency plans for covering course materials.

### Schedule

Aug. 18, 20, 22	MWF	Mathematics Review (B06)
Aug. 25, 27	MW	Mathematics Review (B07)
Aug. 29	F	Mathematics Review (B09)
Sept. 1	M	Labor Day (no class)
Sept. 3	W	Mathematics Review (B09)
Sept. 5	F	Vacuum Electrostatics (E01)
Sept. 8, 10, 12	MWF	Vacuum Electrostatics (E01)
Sept. 15, 17, 19	MWF	Vacuum Electrostatics (E01)
Sept. 22	M	Practice Problems
Sept. 24	W	Non-Vacuum Electrostatics (E02)
Sept. 24	W	<b>Exam 1</b> (during the recitation meeting time)
Sept. 26	F	Non-Vacuum Electrostatics (E02)
Sept. 29, Oct. 1	MW	Non-Vacuum Electrostatics (E02)
Oct. 3	F	Vacuum Magnetostatics (E03)
Oct. 6, 8, 10	MWF	Vacuum Magnetostatics (E03)
Oct. 13	M	Vacuum Magnetostatics (E03)
Oct. 15, 17	WF	Non-Vacuum Magnetostatics (E04)
Oct. 20	M	Practice Problems
Oct. 22	W	Electrodynamics
Oct. 22	W	<b>Exam 2</b> (during the recitation meeting time)
Oct. 24	F	Electrodynamics
Oct. 27, 29	MW	Electrodynamics
Oct. 31	F	Electrodynamics
Nov. 3, 5, 7	MWF	Miscellaneous Statics Topics (E06)
Nov. 10, 12, 14	MWF	Electromagnetic Waves (E07)
Nov. 17	M	Practice Problems
Nov. 19	W	Review
Nov. 19	W	<b>Exam 3</b> (during the recitation meeting time)
Nov. 21	F	Review
Nov. 24, 26, 28	MWF	Thanksgiving Break (no class)
Dec. 1	M	Review
Dec. 3	W	Pre-finals Day
Dec. 5	F	Reading Day (no class)
Dec. 10	W	8:00AM - 10:00AM <b>Final Exam</b>