

Syllabus
Physics 4210, Electricity and Magnetism
Fall 2020

Regular Class Meeting Times: MoWeFr 9:00AM - 9:50AM

Recitation Meeting Times: Mo 3:00PM - 3:50PM

Instructor's Office Hours: MoWeFr 9:50AM - 10:50AM (immediately following regular class meetings) or by appointment

Instructor: Dr. Carlos Ordonez (or-dawn-ez) Email address: cao@unt.edu

All meetings for this class will occur via Zoom. While listening to others, please turn off your microphone and camera for Zoom meetings involving more than a few people. If you wish to speak (e.g., to ask a question), turn on your microphone (and optionally your camera) to speak. The Zoom meeting ID number for each meeting is posted on Canvas. Information regarding Canvas and Zoom is available at
→ learnanywhere.unt.edu
and the links contained therein.

Course Packet: The course packet is required for all meetings, exams and assignments for this class. PHYS 4210 Course Packet by C. A. Ordonez is available on Canvas. The course packet must be viewed, while simultaneously viewing Zoom meetings, exams, or assignments for this class. Possibilities include using two display screens, using two windows on a single display screen, or using a printed hardcopy of the course packet.

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

Textbook: The course textbook is required: Introduction to Electrodynamics, 4th Edition, by D. J. Griffiths, Cambridge University Press (2017).

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, open book/notes, and a scientific calculator is required.

All exams and assignments for this class occur via Canvas. If there are issues with using Canvas for administering an exam, the exam will be sent by email at the scheduled start time, and exam answers must be sent back to the instructor via email by a time indicated either in the email or on the exam.

Assignment due dates are given on the schedule below. However, it is recommended that assignments be worked well before each scheduled due date. You may help each other when working assignments (but not when working exams). However, each person must submit separate answers on Canvas.

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

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

Schedule

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|---------------------|-----|--|
| Aug. 24, 26, 28 | MWF | Mathematics Review (B06) |
| Aug. 31, Sept. 2, 4 | MWF | Mathematics Review (B07) |
| Sept. 7 | M | Labor Day (no class) |
| Sept. 9 | W | Mathematics Review (B09) |
| Sept. 11 | F | Vacuum Electrostatics (E01) |
| Sept. 14, 16, 18 | MWF | Vacuum Electrostatics (E01) |
| Sept. 21, 23, 25 | MWF | Vacuum Electrostatics (E01) |
| Sept. 28 | M | Exam 1 (during the recitation meeting time) |
| Sept. 28 | M | Assignments Due: B06, B07 excluding 15 and 16, B09 excluding 1 to 3, E01A, E01B |
| Sept. 30, Oct. 2 | WF | Non-Vacuum Electrostatics (E02) |
| Oct. 5 | M | Non-Vacuum Electrostatics (E02) |
| Oct. 7, 9 | WF | Vacuum Magnetostatics (E03) |
| Oct. 12, 14 | MW | Vacuum Magnetostatics (E03) |
| Oct. 16 | F | Non-Vacuum Magnetostatics (E04) |
| Oct. 19, 21, 23 | MWF | Non-Vacuum Magnetostatics (E04) |
| Oct. 26 | M | Exam 2 (during the recitation meeting time) |
| Oct. 26 | M | Assignments Due: E02A, E02B, E03A, E03B, E04A, E04B |
| Oct. 28, 30 | WF | Electrodynamics (E05) |
| Nov. 2, 4, 6 | MWF | Electrodynamics (E05) |
| Nov. 9, 11, 13 | MWF | Miscellaneous Statics Topics (E06) |
| Nov. 16, 18, 20 | MWF | Electromagnetic Waves (E07) |
| Nov. 23 | M | Exam 3 (during the recitation meeting time) |
| Nov. 23 | M | Assignments Due: E05A, E05B, E06A, E07A |
| Nov. 25 | W | Review |
| Nov. 27 | F | Thanksgiving Break (no class) |
| Nov. 30 | M | Review |
| Dec. 2 | W | Pre-finals Day |
| Dec. 4 | F | Reading Day (no class) |
| Dec. 9 | W | 8:00AM - 10:00AM Final Exam |

Addendum to Course Syllabus

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You 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 deliver letters of reasonable accommodation during faculty 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 at <http://www.unt.edu/oda>. You may also contact ODA by phone at (940) 565-4323.

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, contingency plans for covering course materials will be distributed by email.

UNT's policy on Academic Integrity can be found at:

<https://vpaa.unt.edu/fs/resources/academic/integrity>

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.

Drop information is available in the schedule of classes at:

<http://registrar.unt.edu/registration/schedule-of-classes>