

Syllabus
Physics 3310
Mathematical Methods in the Physical Sciences
Fall 2026

Regular Class Meeting Times: MoWeFr 11:15AM - 12:05PM, Phys 112

Recitation Meeting Times: We 2:15PM - 4:05PM, Phys 112

Instructor's Office Hours: MoWeFr 10:25AM - 11:15AM or by appointment

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

Office: PHYS 110; 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 3310 Course Packet by C. A. Ordonez is available at Eagle Images, University Services Building, Room 124.

Textbook: A textbook is recommended but not required: Essential Mathematical Methods for Physicists, Hans J. Weber and George B. Arfken, Elsevier, Academic Press, 2004, ISBN: 0-12-059877-9.

Attendance: Attendance is required.

Prerequisite(s): PHYS 1520 (or PHYS 2220). MATH 2700 may be taken concurrently.

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 mathematics used by physicists. 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 (if available) before each exam. Note: You can take to each exam a hardcopy of your written solutions for problems that you work.

Schedule

Aug. 17 to Nov. 18		A01 - A05, A07, A08 (no lectures)
Aug. 17, 19, 21	MWF	B01 Complex Numbers
Aug. 24, 26, 28	MWF	B02 Discrete Mathematics
Aug. 31, Sept. 2, 4	MWF	B03 One Dimensional Space
Sept. 7	M	Labor Day (no class)
Sept. 9	W	Exam 1 on B01 - B03 (during recitation)
Sept. 11	F	B04 Two- and Three-Dimensional Space
Sept. 14, 16, 18	MWF	B04 Two- and Three-Dimensional Space
Sept. 21, 23, 25	MWF	B04 Two- and Three-Dimensional Space
Sept. 28, 30, Oct. 2	MWF	B05 N-Dimensional Space; Matrices
Oct. 5, 7, 9	MWF	B05 N-Dimensional Space; Matrices
Oct. 12	M	B05 N-Dimensional Space; Matrices
Oct. 14	W	Exam 2 on B04, B05 (during recitation)
Oct. 16	F	B06 Differential Operators; Coordinate Systems
Oct. 19, 21, 23	MWF	B06 Differential Operators; Coordinate Systems
Oct. 26, 28, 30	MWF	B07 Integrals Involving Symmetry
Nov. 2, 4, 6	MWF	B08 Fourier Series
Nov. 9, 11, 13	MWF	B09 Integral Transforms, Dirac Delta Function
Nov. 16	M	B09 Integral Transforms, Dirac Delta Function
Nov. 18	W	Exam 3 on B06 - B09 (during recitation)
Nov. 20	F	Review
Nov. 23, 25, 27	MWF	Thanksgiving Break (no class)
Nov. 30	M	Review
Dec. 2	W	Pre-finals Day
Dec. 4	F	Reading Day (no class)
Dec. 5	Sa	10:30AM - 12:30PM Final Exam

Mathematica: Assignments A01 - A08, excluding A06, are to be completed using Mathematica and may be turned in at any time prior to Exam 3 without penalty. UNT has a Mathematica site license. Follow the instructions under the section, Mathematica Online, at this web page: <https://it.unt.edu/helpdesk/software-mathematica.html>

Along with the online version (recommended), there is also an option for installing Mathematica on a personal computer.

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.