Course Syllabus

Revised 15 August 2023

Course Information

Course Number/Section	PHYS 1302.001
Course Title	College Physics II
Term	Fall 2023
Days and Time	Tue/Thu, 11:30 am – 12:45 pm
Location	SCI 1.210 (in-person class meetings only)

Instructor Contact Information

Name	Mark Lee
Email Address	marklee@utdallas.edu
Office Location	SCI 2.148
Office Hours	Wednesday, 1:00 pm – 3:00 pm
Teaching Assistant	Cody Reid Allen (cody.allen@utdallas.edu)
Office Hours	TBD
SI Leader	**TBA**

Health Information & Guidelines

To help preserve the UTD's in-person learning environment:

- All students are strongly encouraged to **get vaccines** recommended by CDC.
- Focus on prevention by covering coughs and sneezes, and practicing good hand hygiene.
- Always refer to University Announcements for the latest community health information.

Course Description

Continuation of PHYS 1301. Topics include electric charges, Coulomb force and electrostatics, electric fields and potentials, current and magnetic fields, magnetic force, magnetic induction, DC electric circuits, electromagnetic waves, optics, and some applications in modern physics, chemistry, and biology. This is an algebra- and trigonometry-based course; no calculus is used.
(Prerequisite: PHYS 1301; Corequisite: PHYS 1102)

Student Learning Objectives / Outcomes

The objective of this course is to give students a rigorous introduction to the foundations of electricity and magnetism, nuclear decay, and topics in modern physics, including

1. Analyze physics problems involving electric and magnetic forces
2. Determine electric & magnetic fields produced by distributions of charge and current
3. Analyze DC electric circuits including resistors and capacitors
4. Be able to explain EM waves, including spectra, interference, diffraction, reflection, & refraction
5. Analyze reflective and refractive geometrical optics
6. Apply electricity & magnetism principles to topics in physics, chemistry, & biology
7. Be able to explain modern physics, including atomic physics as it applies to chemistry and nuclear decay as it applies to medicine

Outcomes/Measures: Summaries and Problem solving in Homework/Exams.

Textbook and Required Materials

- The official textbook is *College Physics (10th edition)*, by Hugh D. Young, Philip W. Adams, and Raymond J Chastain, © 2015, Pearson. ANY college level algebra-based physics book that covers the topics listed in Schedule below is acceptable. However, students who choose not to use the official textbook are responsible for finding a way to follow the reading and practice assignments based on the official textbook.
- Students will do homework assignments on eLearning. No Mastering Physics package is needed.
- Midterm Exams and Final Exam will be conducted in the UTD Testing Center. Students need to **reserve a seat** for the exam. More information will be announced in class and posted on eLearning.

Course Mechanics

- **Textbook Reading**: Students need to read the textbook chapters given in Schedule and try to work out the example problems given in the text. The lectures do not repeat all textbook content but will focuses on key physics concepts and problem-solving skills.
- **Homework** (30% of final score): A homework assignment will be available on eLearning for a week and is usually due 11:59 pm on a Friday (as specified on Schedule below). Students may discuss the physics with others or TAs, but need to answer the questions individually and independently. The answers should be an honest reflection of your own understanding.
- **Practice Exams** (5% of final score): There will be a practice exam before each formal exam to familiarize yourself with the exam format. You have unlimited attempts to do a practice exam before the due date. Practice exam score will not count – you will get credit for trying each practice exam.
- **Exams** (65% of final score): There will be three Midterm Exams on the dates specified in Schedule below and one cumulative Final Exam during the final exam week.
- **Bonus credit**: Each homework assignment and exam will be graded on the basis of 100 points, plus 5%~10% additional points (except Final Exam), so you have a chance to gain some bonus credit.

Grading Policy

- Final Score $\boldsymbol{x}$ = (Homework)× $\mathbf{30\%}$ +(Practice Exams)× $\mathbf{5\%}$ + (higher of Exam 1 or Final Exam) × $\mathbf{15\%}$ +(higher of Exam 2 or Final Exam) × $\mathbf{15\%}$ + (higher of Exam 3 or Final Exam) × $\mathbf{15\%}$ + (Final Exam) × $\mathbf{20\%}$
- The above formula tells that the Final Exam score will be used to **replace any lower Midterm Exam scores** to gain you a higher Final Score $\boldsymbol{x}$.
- The Final Score $\boldsymbol{x}$ will also determine your score ranking among all students in the class. Two methods below will be used to calculate the final grade:

by score $\boldsymbol{x}$	Grade	by ranking	Grade
$\boldsymbol{x \geq 85}$	Some forms of A	Above 65%	Some forms of A
$\boldsymbol{85 > x \geq 70}$	Some forms of B	40% to 64%	Some forms of B
$\boldsymbol{70 > x \geq 55}$	Some forms of C	20% to 39%	Some forms of C
$\boldsymbol{55 > x \geq 40}$	Some forms of D	10% to 19%	Some forms of D
$\boldsymbol{40 > x}$	F	Below 10%	F
Your final letter grade will be assigned as whichever is higher (Within the letter grade, score thresholds for + and − will be determined at the end when all score statistics are available)			

Schedule (HW = Homework, PE = Practice Exam)

Dates	Topics (textbook chapter)	Assignments
8/22	1. Introduction, Course Description, Electric Charge (17.1)	
8/24	2. Coulomb's Force Law (17.2–17.4)	
8/29	3. Electric fields, Gauss's law (17.5–17.9)	HW 1 due Fri, 11:59 pm
8/31	4. Electric Potential and Voltage (18.1–18.3)	
9/5	5. Dielectrics, Insulators & Capacitors (18.4–18.7)	HW 2 due Fri, 11:59 pm
9/7	6. Current, Resistance, & Electromotive Force (19.1–19.3)	
9/12	7. Circuit Power, DC circuits (19.4–19.6)	HW 3 due Fri, 11:59 pm
9/14	8. Resistor & capacitor circuits (19.7–19.9)	
9/19	Review for Exam	PE 1 due Thu, 9 pm
9/21	**Midterm Exam 1 on Thursday, 9/21 (at UTD Testing Center)**	
9/26	9. Introduction to Magnetism (20.1–20.4)	HW 4 due Fri, 11:59 pm
9/28	10. Electric Currents & Magnetic Fields (20.5–20.9)	
10/3	11. Motional emf, Inductors, & Magnetic Field Energy (21.1, 4–6, 8, 10)	HW 5 due Fri, 11:59 pm
10/5	12. Electromagnetic Waves (21.12, 23.1–4)	
10/10	13. Electromagnetic Energy & Momentum; Light (23.5–23.6)	HW 6 due Fri, 11:59 pm
10/12	14. Reflection & Refraction (23.7–23.8)	
10/17	15. Dispersion, Polarization, & Huygen's Principle (23.9–23.11)	HW 7 due Fri, 11:59 pm
10/19	Review for Exam	
10/24	**Midterm Exam 2 on Tuesday, 10/24 (at UTD Testing Center)**	PE 2 due Tue, 9 pm
10/26	16. Reflective Optics: Mirrors (24.1–24.3)	
10/31	17. Refractive Optics: Lenses (24.5–24.6)	HW 8 due Fri, 11:59 pm
11/2	18. Examples of Optics (25.1–25.5)	
11/7	19. Interference & Diffraction (26.1–26.5)	HW 9 due Fri, 11:59 pm
11/9	20. Photoelectric Effect, Atomic Spectra (28.1–28.2)	
11/14	21. Atoms and Nuclei (28.3–28.4)	HW 10 due Fri, 11:59 pm
11/16	22. Electrons in Atoms, Periodic Table (29.1–29.2)	
11/21	Thanksgiving Break	
11/23	Thanksgiving Break	
11/28	Review for Exam	PE 3 due Thu, 9pm
11/30	**Midterm Exam 3 on Thursday, 11/30 (at UTD Testing Center)**	
12/5	23. Nuclei and Radioactivity (30.1–30.4)	
12/7	Review for Final Exam	
12/12	**Final Exam (at UTD Testing Center)**	PE 4 due before Final, 9 pm

General Course Policies

Exams

1. Midterm Exams and Final Exam will be computer-based and be conducted in UTD Testing Center. Students will use computers provided by the Testing Center to access the Exams on eLearning. You need to **reserve a seat** on the exam days (instructions will be announced in class). You will attend the Testing Center and start the exam on time. Once you begin the exam, you must complete it within a fixed time. You may not stop the exam part-way through and continue it later.
2. During exams, you may NOT view any other information on eLearning. You may NOT use any other source of information such as textbooks, any notes other than what is specified in exam policy #4 below, other people, or the internet. You may NOT use phones. You may NOT email the instructor or TA. **Try your best to interpret the test questions and find the most appropriate answers yourself**.
3. **Calculators will be necessary** for all exams. Any calculator that has internet access will not be allowed in the exams. A scientific calculator with graphing/financial/programming functions is OK, as long as you do not use these functions in the exams.
4. You will be allowed to bring **ONE 8.5" x 11" (letter-size) piece of paper with whatever you wish written/printed/drawn on both sides to each Midterm Exam**. You will be allowed to bring **TWO such papers to the Final Exam**. These papers are the only information you may bring to the exams.
5. You may not leave the exam room with the exam or your answers.
6. Exams will cover all course content, including textbook chapters, lecture videos, in-class examples and exercises, homework, quizzes, and practice exams. You are responsible for all the asynchronous studying assignments even if we do not discuss them in class. This includes the textbook and course materials available on eLearning.
7. The final exam will cover all the course content/materials in the semester and will be *cumulative*.
8. Detailed information about the format, content, and policies of each exam will be announced one week before the exam day.

Homeworks/Preview readings/TA sessions/Classroom courtesy

9. All homework assignments will be available on eLearning and is usually due 11:59 pm on a Friday (as specified on Schedule). **No late homework will be accepted**.
10. You are welcome to work together on homework but everyone must do their own problems and what you turn in should represent an honest reflection of your understanding.
11. You can download any materials available on eLearning. Be aware that these materials may not be a complete record of what is covered in lecture and will not be enough to pass the course.
12. The studying assignment includes the relevant textbook chapters given above and the lecture videos posted on eLearning. Therefore you do need to study in advance before attending the class.
13. There will be weekly TA sessions for exercises, discussions, and questions. Attending the TA sessions are highly recommended, but individual attendance will not be checked.
14. All electronic devices must be silenced during all class time.
15. Do not disrupt the class by getting up and leaving in the middle of class.
16. Food or drinks that can distract the class are not allowed.

University policies

17. Academic Integrity: Each student in this course is expected to exercise independent scholarly thought, expression, and aptitude. The investigation of **academic dishonesty** will be conducted for anyone copying or assisting in copying of homework assignments or exams, in whole or in part, (1) from other students, (2) from assignments from other classes/semesters, or (3) from any internet resources like Chegg.com. Possible sanctions include, but are not limited to, receiving 0 grade for associated assignments/exams or reduction in the final course grade. See more information on UTD Community Standards and Conduct website.
18. Disability Services: It is the policy and practice of UTD to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with the instructor and allow **one week** advance notice.
19. Contact the instructor about any problem you have or accommodation you need in advance. For absence due to an emergency, inform the instructor **within 2 days** after the event and provide valid documentation. Your request will be considered case by case. Any late request for retroactive services will be denied.
20. In the event of public emergency, inclement weather, etc., that lead to unexpected closure of the university, class will not proceed. Please follow the university announcement for its closure and reopening. After the event, look for Announcement on eLearning about the class reschedule.
21. For more policies, please refer to University Policies and Procedures.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources

Please see http://go.utdallas.edu/academic-support-resources for the University's academic support resources for all students.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.