Course Syllabus

Revised May/21/2023

Course Information

Course Number/Section	PHYS 1302.0h1
Course Title	**College Physics II**
Term	Summer 2024, MW 10:00 – 12:15 SCI 2.225

Professor Contact Information

Professor	**Roger Kadala**
Office Phone	N/A
Email Address	roger.kadala@utdallas.edu
Office Location	SCI - 3.144
Office Hours	MW 12:30 – 1:15
Online Office Hours	N/A
Other Information	TA: Melodee Seifi mos170000@utdallas.edu Rohit Kajla Rohit.Kajla@utdallas.edu
Supplemental Instruction	SI: N/A in summer

Both SI session hours/location and TA hours/location will be posted on Elearning first week of class!!

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 2126)

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 *Modified Mastering Physics for College Physics, 11 th edition*

  by Hugh Young/ P. Adams/ R Chastain ... Pearson

  isbn 978-013-4876986 Series: **Mastering Physics (required) Course Code: kadala16104**
- Students are required to have proper **hardware, software,** and **internet access** to
  - Watch recorded **lecture videos** posted in eLearning.
  - Classes are in person but also synchronous online via **BlackBoard Collaborate** in eLearning.

- Regularly check additional materials and important announcements in eLearning

Course Highlights

- **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 focus on key physics concepts and problem-solving skills.
- **HW** (25% of final score): A homework assignment will be available on **Mastering Physics** for a week and is usually due after every 2-3 lectures (as specified on Schedule below). Students may discuss the physics with others, but need to answer the questions individually and independently. The answers should be an honest reflection of your own understanding. Late HW will have a penalty of 10% per day late up to a maximum of 50%. These are global settings which cannot be adjusted individually!!
- **Exams** (75% 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. Each exam is 18%, final is 21%. Exams will be held after a short lecture, from 11:00 – 12:15 on dates specified in the Schedule.
- **Bonus credit**: Total hw assignment and each exam will be graded on the basis of 100 points, plus 5%~10% additional points, so you have a chance to gain some bonus credit. This bonus credit constitutes the "curve" used for grading.

Grading Policy

Final Score $\boldsymbol{FG}$ = (Homework) × $\mathbf{25}\%$ + (Exam1 + Exam2 + Exam3) X **54%** +
+ (Final Exam) × $\mathbf{21}\%$

The Final Exam score will be used to replace ONLY ONE **lower Midterm Exam score.**

Your final letter grade will be assigned as (Within the letter grade, score thresholds for + and − will be determined at the end when all score statistics are available)

$\boldsymbol{x \geq 90}$	**A**
$\boldsymbol{90 > x \geq 80}$	**B**
$\boldsymbol{80 > x \geq 65}$	**C**
$\boldsymbol{65 > x \geq 50}$	**D**
$\boldsymbol{50 > x}$	**F**

Schedule

Dates	Lecture topic (textbook reading)	Assignments
5/29	1. Introduction, Course Description, Electric Charge (17.1)	HW 1 due on Wed, 6/06
6/03	2. Coulomb's Force Law (17.2–17.4)	
	3. Electric fields, Gauss's law (17.5–17.9)	
6/05	4. Electric Potential and Voltage (18.1–18.3)	
	5. Dielectrics, Insulators & Capacitors (18.4–18.7)	
6/10	6. Current, Resistance, & Electromotive Force (19.1–19.3)	HW 2 due on Tue, 6/12
6/12	7. Circuit Power, DC circuits (19.4–19.6)	
	8. Resistor & capacitor circuits (19.7–19.9)	HW 3 due on Sun, 6/16
6/17	**Midterm Exam 1 on Wednesday, 6/26 in class 11:00 – 12:15**	
6/19	Holiday!!	
6/24	9. Introduction to Magnetism (20.1–20.4)	
6/26	10. Electric Currents & Magnetic Fields (20.5–20.9)	HW 4 due on Thu, 6/27
	11. Motional emf, Inductors, & Magnetic Field Energy (21.1, 4–6, 8, 10)	
7/01	12. Electromagnetic Waves (21.12, 23.1–4)	
7/03	13. Electromagnetic Energy & Momentum; Light (23.5–23.6)	HW 5 due on Wed, 7/03
	14. Reflection & Refraction (23.7–23.8)	HW 6 due on Sun, 7/07
7/08	15. Dispersion, Polarization, & Huygen's Principle (23.9–23.11)	HW 7 due on Wed, 7/10
7/10	16. Reflective Optics: Mirrors (24.1–24.3)	
	17. Refractive Optics: Lenses (24.5–24.6)	
7/15	**Midterm Exam 2 on Monday, 7/15 in class 11:00 – 12:15**	HW 8 due on Thu, 7/18
7/17	18. Examples of Optics (25.1–25.5)	
	19. Interference & Diffraction (26.1–26.5)	HW 9 due on Sun, 7/21
7/22	20. Photoelectric Effect, Atomic Spectra (28.1–28.2)	HW 10 due on Fri, 7/26
7/24	21. Atoms and Nuclei (28.3–28.4)	
7/29	22. Electrons in Atoms, Periodic Table (29.1–29.2)	HW 11 due on Tue, 7/28
7/31	**Midterm Exam 3 on Wednesday, 7/31 in class 11:00 – 12:15**	
8/5	23. Particle Physics and Cosmology (30.8-30.10)	
8/8.9	**Final Exam exact date TBD**	

Also see the Student Success Center: http://studentsuccess.utdallas.edu/

Course Modality and Expectations

Instructional Mode	Traditional/In person (unless UTD dictates otherwise)
Course Platform	In person (**Bb Collaborate Ultra if remote**) **Course code: kadala16104 mlm.pearson.com**
Expectations	Participate in class sessions. Follow up with office hours of instructor or TAs. Perform online work. Take all four exams provided in the class.

General Course Policies

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see http://go.utdallas.edu/syllabus-policies.

General Course Policies

Exams

1. During the exam, You may NOT use any other source of information such as textbooks, any notes other than what is specified in exam policy #3 below, other people, or the internet. You may NOT use phones. You may NOT ASK the instructor or TA. **Try your best to interpret the test questions and find the most appropriate answers yourself**.
2. **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.
3. 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.
4. You may not leave the exam room with the exam or your answers. nor your phone.
5. 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.
6. The final exam will cover all the course content/materials in the semester and will be ***cumulative*.**
7. Detailed information about the format, content, and policies of each exam will be announced one week before the exam day and **posted on Elearning Homepage under item "Exam Instructions"**

Homeworks/Preview readings/TA sessions/Classroom courtesy

8. All homework/quiz assignments will be available on Mastering Physics and is due 11:59 pm on dates (as specified on Schedule). **Late HW has a 10% penalty per day up to a maximum of 50%.**

9. 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.
10. 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.
11. There will be weekly TA/SI sessions for exercises, discussions, and questions. Attending the TA/SI sessions are highly recommended, but the individual attendance will not be checked.
12. All electronic devices must be silenced during all class time.
13. Do not disrupt the class by getting up and leaving in the middle of class. Food or drinks that can distract the class are not allowed.

University policies

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.