Revised January/2023

Course Information:

Course Number/Section	**PHYS 1302.001**
Course Title	**College Physics II**
Term	Spring 2023
Time & Location	Tues & Thurs 4:00 - 5:15 pm
Rm	SCI 1.220

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Course Pre-requisites and Co-requisites: PHYS 1301; PHYS 2126

Course Description: Continuation of the course 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.

What are our goals for this course:

We look forward to helping you master the following skills :

- Develop ***problem solving skills*** such as: Identifying givens and unknowns in a problem, assigning variables to unknown quantities, connecting quantities with the correct relationships and applying algebraic tools to solve for the unknowns.
- Calculate electric and magnetic ***forces and fields,*** add forces.
- Analyze ***electric circuits*** including electromotive force, resistors & capacitors.
- Understand ***electromagnetic waves,*** including spectra, interference, diffraction, reflection, & refraction.
- Use reflective and refractive ***geometrical optics,*** to determine properties of images formed.
- ***Apply*** electricity & magnetism principles to topics in physics, chemistry, & biology.

Do I need to purchase a Textbook?

This course will not follow a specific textbook. Any relatively recent Introductory physics textbook will be sufficient. You are encouraged to use a textbook of your choice as a reference.

Suggested textbooks:

College Physics (10th edition), by Hugh D. Young, Philip W. Adams, and Raymond J Chastain
University Physics, Young and Freedman, Volume 2
Fundamentals of Physics, D. Halliday, R. Resnick, J. Walker. Volume 2

Mastering Physics

Do I need to purchase access to Mastering Physics ?

Access to Mastering Physics ***is a requirement*** for this course. In order to purchase online access please follow the instructions below.

How to purchase access to Mastering Physics:

- Access the class by logging into E-learning.
- Once you're in the homepage of the class, select from the menu to the left, "Mastering Assignments & Resources ".
- Click on "Welcome to Mastering Physics". You will then be promoted to accept terms and conditions. If you don't have an account with Mastering Physics, select "Create a Pearson Account" and complete the required fields. You will then be prompted to make your payment either by entering an access code that you can purchase from the book store or simply pay online using PayPal or with a credit card. Students who purchased access for one year when they took PHYS1301, can simply enter their existing Pearson account username and password to sign in and will not need to make any further payments. To access your Mastering assignments later, simply login into Elearning and select Mastering Assignments.

What do I need to do to succeed in this course?

Considering students' different learning styles, we will implement a range of learning modes in this class with a *focus on developing problem solving skills.* These modes will include models and visualization, flipped classroom and peer instruction. *I will be working with you continuously to help you achieve your target goals.*

This learning style allows you to manage your own success by participating in all activities and using the tools provided for you efficiently. This also makes it easy for you to *manage your final score by approaching* weekly quizzes and assignments in matter described below.

Below is a list of resources that will be provided for you to support your learning process:

1. **Flipped classroom and lecture summaries:** with Flipped classrooms, you have the choice to take more responsibility in managing your own learning. It also allows you to actively participate in the process. If you wish to benefit best from it, I encourage you to get ready for class by checking out the Lecture outlines which will be posted on eLearning weekly covering the basic concepts we will go over that week. CAUTION: These outlines are not a sufficient learning tool on their own as they *only provide a summary* of what you need to know. In addition to attending class, you are encouraged to expand on the summaries by using other resources, such as (introductory textbooks, Study Area on Mastering, Khan academy videos, ….etc) before attempting to complete quizzes or assignments.
2. **Lectures** We will use lecture time to highlight and expand on important concepts with applications and examples. Lectures will be planned with student preparation in mind.

3. During class time, you are *strongly* encouraged to ***take notes and keep an organized record of everything we cover in class. This will prove very helpful when preparing for tests*** and when ***attempting to solve weekly assignments.*** I will be working closely with you to ensure you get all the support you need to make your note taking process successful.
4. **Weekly Quizzes:** these are low stakes quizzes which constitute 10% of your total grade. Quizzes will contain basic level questions about the material to be covered in class that week or the material covered the week before. They are provided to ***give you a chance to test your understanding and to earn easy credit. These quizzes will occasionally include extra credit questions.*** *Quizzes* will become available on elearning under "Quizzes and Exams" on Friday of every week and will be due on Tuesdays before class.
5. **In-class Problem solving sessions:** We will work together in class on a selection of questions. Class will be divided into groups and you will be asked to participate actively by discussing the problem with your group and applying the learned concepts to solve it. ***You are strongly encouraged to participate in this peer instruction process, as it is known to be very successful in enhancing the learning process.*** After groups have completing their reflections on problems, we will be solving them on the board together.
6. **Mastering Assignments:** Weekly Mastering Assignments will be made ***available each Tuesday after class*** and will be ***due on the following Sunday by midnight***. All homework assignments must be completed by the deadline to achieve full credit. You may still access the assignments after the deadline to complete missing work for partial credit. You may also access them for review until the end of the semester.
7. How to use Mastering successfully in learning the material: Mastering Physics has been proven to be an extremely successful learning tool for students in introductory courses as it provides the feedback necessary for a healthy learning experience. Students are given the chance to *retry*

attempts until they get it right. *Hints* can be useful when you are unclear on how to proceed with the problem. The idea is for you to develop *long lasting knowledge* and *problem solving skills by practicing the concepts learned in class through application to real life situations.*

You are encouraged, though, to use extra caution when solving problems on Mastering and pay attention to the following:

1. Students are encouraged to discuss assignment problems with their peers, TAs or instructor. On the other hand, you are expected to answer the questions individually. This is important since these problems are chosen carefully to prepare you for success during exams.
2. The *biggest mistake is to attempt the assignment problems before you have had a chance to go over the new concepts introduced in class and try a few straight forward examples* (weekly quiz, textbooks provide solved examples.) Make sure you try the examples yourself before looking at solutions).
3. Try not to *guess.* You may find that a certain calculation leads to a correct answer without a good understanding of why. In case this happens, do not move on without understanding the real physics behind the answer. If you need to, go back to your lecture notes and examples.
4. Do not rush into using *hints.* This is important, specially if you are working on the problems before you have studied well the new concepts introduced in class.

Students who follow these guidelines normally find themselves doing better on exams. On the other hand, not using the Mastering tool properly has *led many students to perform below the level they expected* on exams.

The Testing Center and Exams

The testing center provides a quiet and comfortable environment to help insure our students perform their best with equal opportunities provided for all.

Our exams will be conducted **at the testing center** and will be available at the testing center the day of the exam. **Every student must reserve a seat for their exam ahead of the exam time and no later than 48 hours prior to the exam. You must reserve your seat online through RegisterBlast (exam scheduling tool).**

If you try registering after the 48-hour cutoff deadline, instead of being able to select a time to test you will only see the error message **"All Times are Full"**. You **cannot** schedule more than one exam for one course on the same day. You **can** schedule exams for multiple courses on one day. The testing center does **NOT ALLOW WALK-IN APPOINTMENTS, NO EXCEPTIONS.** So, **please plan ahead and register for your exam early and in advance.**

***No make-ups will allowed for any reason*. A missed exam is your dropped exam.** More details about exams will be shared prior to exam dates.

Description of Exams

- All of our exams will be Hybrid (meaning each exam is divided into two portions, an online portion and a free response portion)
- The online portion will be accessed on Elearning on a testing center computer and will contain questions in two different formats: “Multiple choice” and “Calculated Numeric”: These are problem solving questions in which you will be asked to calculate for a quantity and enter your final answer into a box. These types of questions require that you enter only the numeric value of your answer. A specified unit for your answer will be given in the question as well as the number of required digits after the decimal (no need to worry about number of significant figures) . A suitable margin of error for each entry will take care of any calculation rounding.
- Exams will be timed and force completion will be activated for the online portion.
- At the testing center, you will be handed a formula sheet together with your free response questions.

Grade Rubric

Weekly Quizzes 10%
Weekly Mastering Assignments 40%
Three Midterm Exams 30% , the lowest dropped (15% each).
Final Exam 20%
Extra credit up to 8% extra points toward your final grade. 2% for successfully submitting the pre-test *and* post-test with an extra up to 1% for achieving a good score on the post-test (for more information on pre-tests and post-tests see the first announcement posted on elearning)
5% extra credit on weekly quizzes.

Schedule

Schedule is intended to give a brief overview of all material we intend to cover. *The order, date of coverage and time devoted for each section may vary based on need.*

Exam dates are final except in the case of a real emergency situation, which we don’t anticipate.

Date	**Topic**
Week1 Jan 17,19	Introduction: Course Description. Overview of Syllabus Properties of Electric Charge. Electric Forces and Coulomb’s law;
Week 2 Jan. 24,26	Electrostatics. Conductors & Insulators.
Feb. 1	Census Day. Last day to drop a class without a “W”
Week 3 Jan31, Feb. 2	Electric Fields and applications

Tuesday Feb 7	First Midterm Exam
Week 4 Feb 9	Electric Potential energy, Potentials and Voltage.
Week 5 Feb. 14, 16	Capacitors & Dielectrics. DC circuits : Current, Resistance,
Week6 Feb. 21, 23	Electromotive Force & Circuit Power. Kirchhoff's Rules RC Circuits: Resistor & capacitor circuits.
Tuesday Feb 28	Second Midterm Exam
Week7 March 2	Magnetism: Magnetic Fields; Magnetic force.
Week8 March 7, 9	Electric Currents & Magnetic Fields. Motional emf.
March 13 - 19	Spring break
Week9 March 21, 23	Electromagnetic Waves: Mathematical representation; Electromagnetic Energy and light
Week10 March 28, 30	Properties of Light: Reflection & Refraction; Dispersion
March 30	Withdrawal ends
Tuesday April 4	Third Midterm Exam
Week11 April 6	Polarization of light. Reflective Optics: Images by Mirrors
Week12 April 11, 13	Refractive Optics: Images by Lenses Examples of Optics
Week13 April 18, 20	Photoelectric Effect, Atomic Spectra
Week14 April 25, 27	Atoms and Nuclei, Electrons in Atoms
Week15 May 2, 4	Periodic Table; Nuclear Decay & Radioactivity
May 6	**Reading Days**
May 8 - 12	**Final Exams**

All descriptions and timelines are subject to change at the discretion of the Instructor.

Academic Support Resources

https://go.utdallas.edu/academic-support-resources

Code of conduct and University policies:

- Successful participation in this class is defined as consistently adhering to University and classroom requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct
- Academic Integrity: Each student is expected to exercise independent scholarly thought, expression, and aptitude. Copying or assisting in copying of homework assignments or exams, in whole or in part, from the internet, other students or from assignments from other sections/ semesters will be considered to be an act of academic dishonesty, which, once suspected, will be reported to University. Students who violate University rules on academic dishonesty are subject to disciplinary sanctions, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the University, policies on academic dishonesty will be strictly enforced. See more information on under the Student Code of Conduct – UTSP5003. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action.
- 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 contact the Office of Student AccessAbility. This office evaluates the students' needs and provides an assessment. Bring the assessment to your professor. We are committed to meeting every student's needs. Please allow **one week** advance notice.
- In the event of public emergency, inclement weather, etc., that leads to unexpected closure of the university, class will not meet. Please follow the university announcement for its closure and reopening. After the event, look for Announcement on eLearning about the class reschedule.

Student Health Resources: a variety of resources are available to help students to obtain counseling and health care.

Academic Integrity: The faculty expects from its students a high-level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrates a high standard of individual honor in his or her scholastic work. See https://conduct.utdallas.edu/integrity.

Academic Dishonesty: Academic dishonesty can occur in relation to any type of work submitted for academic credit or as a requirement for a class. It can include individual work or a group project. Academic dishonesty includes plagiarism, cheating, fabrication, and collaboration/ collusion. In order to avoid academic dishonesty, it is important for students to fully understand the expectations of their professors. This is best accomplished through asking clarifying questions if an individual does not completely understand the requirements of an assignment.

Additional information related to academic dishonesty and tips on how to avoid dishonesty may be found here: https://conduct.utdallas.edu/dishonesty.

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Class Honor Code of Conduct:
I will display a high level of maturity and integrity in all my actions.
I understand my responsibility toward myself and to the community of learners I have joined.
I will celebrate the diversity in my classroom by treating all my class mates with respect and equity regardless of their backgrounds.

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."

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