

PHYS-2010-003: General Physics I

Syllabus — Fall 2023

Course ID: PHYS-2010-003
Lecture Times: M W F 11:40 a.m. – 12:35 p.m.
Lecture Location: Brown Hall, Room 370
Lecturer: Dr. Donald Luttermoser
Office Hours: By Appointment (280 Brown Hall, 439-7064)
Textbook: *College Physics, 11th Edition* by Serway & Vuille

Course Outline

<u>Days</u>	<u>Topics</u>	<u>Textbook Readings</u>
Aug 28, 30, Sep 1	I. Introduction & II. Math Techniques	Chapter 1
September 1	Math Tech Quiz	Your Background
September 4	Labor Day – No Class	
September 6, 8	III. Motion in 1 Dimension	Chapter 2
September 11, 13, 15	IV. Motion in 2 Dimensions	Chapter 3
September 18, 20, 22	V. Newton’s Laws of Motion	Chapter 4
September 25	Exam 1 (Sections I-V)	Chapters 1-4
September 27, 29	VI. Work & Energy	Chapter 5
October 2, 4, 6	VII. Linear Momentum & Collisions	Chapter 6
October 9, 11, 13	VIII. Circular Motion	Chapter 7
October 16	Fall Break – No Class	
October 18, 20	IX. Gravitation	Chapter 7
October 23	Exam 2 (Sections VI-IX)	Chapters 5-7
October 25, 27	X. Rotational Equilibrium & Dynamics	Chapter 8
Oct 30, Nov 1, 3	XI. Solids & Fluids	Chapter 9
November 6, 8	XII. Thermal Physics	Chapters 10 [†] , 11
November 10	Veteran’s Day – No Class	
November 13	Exam 3 (Sections X-XII)	Chapters 8-11 [†]
November 15, 17	XIII. Gas Laws	Chapter 10.4
November 20	Kinetic Theory of Gases	Chapter 10.5
November 22, 24	Thanksgiving Break – No Classes	
Nov 27, 29, Dec 1	XIV. Thermodynamics	Chapter 12
December 4, 6	Thermodynamics	Chapter 12
December 8	Course Review	Chapters 1-12
December 11*	Final (3:50 p.m. – 5:50 p.m.)	Chapters 1-12

† — The material from Chapter 10 on Exam 3 will only cover sections 10.1, 10.2, and 10.3. Sections 10.4 and 10.5 material will be on the Final Exam.

★ — Note that the final falls on **Monday, December 11th** at the times listed above. The final covers the entire course.

The web page for this course can be found at:

<https://faculty.etsu.edu/lutter/courses/phys2010/index.htm>

Course Overview

General Physics I is the first course of a two-semester sequence in physics; topics will include mechanics, heat, thermodynamics, and the properties of solids, liquids, and gases. The main goals of this course are to demonstrate how the Universe works and to teach you scientific methodology. **General Physics I is a problem-solving course, that is, the measure of a student's progress is demonstrated by the ability to solve problems using algebra and trigonometry, and not just to quote facts, laws and formulas.** Your homework will be designed to help you develop these skills and the exams will test you on them. **It is assumed that you have a reasonable working knowledge of algebra and trigonometry at a high school level.** There will be a quiz that will test your mathematics skills on September 1st. ***Should you not do well on this quiz, you should reconsider whether you should be taking this course.*** Doing physics means doing story problems using mathematics! **You are expected to have (and know how to use) a good *scientific* calculator — especially for exams.** The Department does not have calculators to loan, and *sharing* of calculators on exams is **NOT** permitted. The book store carries such calculators. **CELL PHONES cannot be used in this class!**

On Campus Attendance is Required for this Course

You are required to attend class on campus in Brown Hall 370 this semester. **The exception to this is if you have been tested positive with COVID-19, or you are sick from some other infection.** Then you can watch the lecture via Zoom. However, **YOU MUST COME TO CLASS IF YOU ARE NOT SICK!!!**

You will not be required to wear masks in the classroom. **However, please note your professor is *immune-compromised* due to the medications he is taking.** As such, **I will require mask wearing if you get within 5 feet of me.**

For providing information to keep the ETSU community safe and communicating updates regarding policy changes, please visit the following web site:

<https://www.etsu.edu/coronavirus/> .

D2L Course Website

For the past few years, I have been streaming the lectures in “real-time” so that students can attend lecture in a *remote* (*i.e.*, online) format and I will be recording these lectures. However, as mentioned above, I expect all students to attend class on campus in Brown Hall 370 unless you are sick. Prior to each scheduled lecture, I will be posting a Zoom link on the course D2L course web page that you are to use to access the synchronous lecture. **You are expected to attend each lecture, whether in person or synchronously via Zoom!** However, if you are forced to miss a lecture due to illness, each lecture will be recorded and the link for that recording will be pasted on the D2L course web page. A link to the ETSU D2L Login web page is included on the course web page at <https://faculty.etsu.edu/lutter/courses/phys2010/index.htm>.

Exams, Quiz, & Homework

There will be 1 quiz and 3 exams throughout the semester, plus a comprehensive final on the dates listed on the first page of this syllabus. Each will cover material prior to the test and be taken during class time (except the final) as shown in the table below. **All exams and the math quiz must be taken on campus – there will be no remote exams.** Note that the math quiz score will not be included in your final course grade. Each exam will be worth 20% and the final worth 30% of your course grade. Note that all physical constants and formulae that you may require will be supplied on the exams and quiz. Otherwise, the exams are closed book and notes – you will not be allowed to consult any external written or online materials. An exception to this rule concerns the final. You will be allowed to bring one 8.5x11” sheet of paper to the final with anything you wish to write on it.

Exam	Note Sections	Textbook Chapters	Date Given
Quiz	II	1 & Appendix A	Friday, September 1, 2023
Exam 1	I, II, III, IV, V	1, 2, 3, 4	Monday, September 25, 2023
Exam 2	VI, VII, VIII, IX	5, 6, 7	Monday, October 23, 2023
Exam 3	X, XI, XII	8, 9, 10, 11	Monday, November 13, 2023
Final	$\frac{1}{2}$ (XIII, XIV) + $\frac{1}{2}$ (I-XII)	$\frac{1}{2}$ (10, 12) + $\frac{1}{2}$ (1-11)	Monday, December 5, 2022

Sickness and Make-Up Exams: If you are sick, **do not come to school!** If this occurs on exam day, you will be allowed to take a *make-up exam*, similar in content to the in-class exam. Note however that you will need to let me know prior to the in-class exam, either by email (preferably) or phone that you will miss the exam due to illness.

There will be 4 homework sets assigned throughout the semester composed of two sections of questions. The first section will be questions generated by the WebAssign software package (see

below). The second section of problems will not be graded and will have solutions posted on the course web page. Try to do these problems by yourself before retrieving the solutions from the web page. Doing both sections of questions will be a big help in studying for the in-class exams and Final Exam.

NO ONLINE HELP WEB PAGES are to be used for the math quiz, homework, in-class exams, or final exam! Over the past few years, many students have been making use of various online companies to ‘cheat’. Please note that Dr. Luttermoser is familiar with these web sites and will be checking each of these sites to make sure none of the students in this class are making use of these sites to answer the questions/problems on the quiz, homework, exams, and final. Note that it is easy to verify this, even if a phony email address is used on these sites. Should a student be caught using such a site, they will receive a ZERO on that homework set, quiz, exam, or final **and be reported to the University for Academic Dishonesty.**

Extra Credit

Each exam will have a 5 point extra credit question on it (the final will have two 5 point questions). Roll will be taken occasionally during the semester. Regular attendance will be useful in obtaining a good grade in this class. Other than the extra credit problems on the exams, **no extra credit projects will be allowed, so don’t even ask.**

Enhanced WebAssign Access

The assigned homework will make use of the textbook publisher’s *WebAssign* web site. You gain access to this site at:

<https://webassign.com> ,

then click on the “Enter Class Key” button on the upper right of this web page. The class key for this course is:

etsu 9680 9716

A Quick Start Guide for using this web site can be found on the course web page. Should you need additional assistance with *WebAssign*, you can contact Technical Support information at:

<https://webassign.com/support/student-support/>

via the web or

1-800-354-9706

by telephone.

Tutoring and Supplemental Help

Many students find General Physics I & II very challenging and have a difficult time understanding the principles of physics and solving physics problems. Mainly, this is due to a lack of training of logical thought skills in secondary school. Due to this, there are a variety of ways to get additional help with this course.

1. The Center for Academic Achievement offered by ETSU (see <https://www.etsu.edu/students/learning/> on the web).
2. Assistance from the Professor via email or “by appointment” office hours.
3. Tutorials on WebAssign. Besides the assigned homework, this web site will be available as additional help for students to provide experience solving word problems in physics.
4. Review sessions prior to each exam (date and times to be determined during lecture the week prior to the exam).

With these supplemental instruction options, students can gain valuable help with this difficult course.

Students with Learning Disabilities

Over the years, I have had students in my courses who suffered with learning disabilities. I always offer additional support for such students, such as one-on-one tutoring and allowing additional time on the exams. However, in order to receive such additional support, a student needs to officially register with the **Office of Disability Services** (see <https://www.etsu.edu/students/ds/>). Once registered, this Office will provide paperwork to the affected student to give to the instructor of the course.

Grading

The format of the exams will be similar to those sample exams on the course web page. Many of the “full-length” problems you will get on the exams will be modified versions of the example problems in the notes and textbook, and the supplemental and WebAssign homework problems. From these sources, you will have access to anywhere from 10 to 25 examples for each section of the notes. This should be more than sufficient to fill your need for studying for the exams. The grading system will be based by the following formula:

$$\text{Final Grade} = \left[0.20 * \left(\frac{\text{Exam 1}}{40} \right) + 0.20 * \left(\frac{\text{Exam 2}}{40} \right) + 0.20 * \left(\frac{\text{Exam 3}}{40} \right) + 0.30 * \left(\frac{\text{Final}}{80} \right) + 0.10 * \left(\frac{\text{Homework}}{\text{Homework Total}} \right) \right] * 100\%$$

The final grades will be based on the following scale:

B+ = 86–87.9%	A = 90% or better	A– = 88–89.9%
C+ = 70–72.9%	B = 76–85.9%	B– = 73–75.9%
D+ = 56–58.9%	C = 62–69.9%	C– = 59–61.9%
	D = 50–55.9%	
	F = Less than 50%	

Note that a failing grade also will be given if the student has engaged in any form of academic dishonesty. Finally, you should not talk to your classmates during the class — that is no student will be allowed to disrupt the class. The only verbal communication allowed is asking the professor a question. **IMPORTANT NOTE: This also includes the ringing of cell phones! Turn your cell phones off before coming into class!** If you are caught disrupting the class once, you will be warned. A second time will result in you being dismissed from the current lecture. A third and final time will result in you failing the course. Be courteous to your neighbors, they are paying hard earned money to take this course.

Mental Health: Students often have questions about mental health resources, whether for themselves or a friend or family member. There are many resources available on the ETSU Campus, including: ETSU Counseling Center (423) 439-4841; ETSU Behavioral Health & Wellness Clinic (423) 439-7777; ETSU Community Counseling Clinic: (423) 439-4187.

- If you or a friend are in immediate crisis, call 911.
- Available 24 hours per day is the National Suicide Prevention Life-line: 1-800-273-TALK (8255).