



EAST TENNESSEE STATE UNIVERSITY

PHYS-2010-005 – General Physics I Noncalculus – CRN: 81368

Credits: 3 | Term: Fall 2026

Welcome to this class!

Welcome to the wonderful world of Physics! I am looking forward to discussing Physics with all of you! It is a beautiful subject and I hope you will appreciate it as much as I do. Through Physics, a student studies the composition and behavior of matter and energy, and their interactions. Physics is written in the **language of mathematics** and is based upon **logical thought processes**. Physics represents the foundation of all of the physical sciences, which includes astronomy, geology, chemistry, and their various subfields. Students will learn critical thinking skills as they study Physics.

This course, **General Physics I** is the first semester of a one-year sequence of courses in physics. Topics will include mechanics, heat, thermodynamics, and the properties of solids, liquids, and gases.. The main goal of this course is to demonstrate to you how the nature operates and to teach you scientific methodology. **General Physics I** is a problem-solving course, that is, the measure of a student progress is demonstrated by the ability to solve algebraic and trigonometric problems, and not just to quote facts, laws and formulas. The assigned homework is designed to help you develop these skills, and the exams will test you on these skills. **It is assumed that you have a reasonable working knowledge of algebra and trigonometry at a high school level.**

You are expected to have (*and know how to use*) a good *scientific* calculator --- especially for the exams. The Department does not have calculators to loan, and the *sharing* of a calculator with your classmates **on exams is NOT permitted!** The book store sells such calculators.

Where and when does our class meet?

Location & Meeting Time

Classroom Location: 370 Brown Hall

Class Meeting Schedule: M W F 2:00 p.m. -- 2:55 p.m.

Accessibility Notes: Posted material for this course should be accessible for all students. If any of you are unable to access any of the material, please let me know via email (lutter@etsu.edu).

Room 370 on the 3rd floor in the south side of Brown Hall and is accessible by elevator as well as stairs. There are handicap accessible restrooms located on this floor.

Who is my instructor and how can I reach them?

Contact Information



[Photo of Dr. Luttermoser]

Instructor: Dr. Donald G. Luttermoser

Email: lutter@etsu.edu

Phone: (423) 439-7064

Office: 280 Brown Hall

When can I talk to my instructor about my class progress or any questions I have?

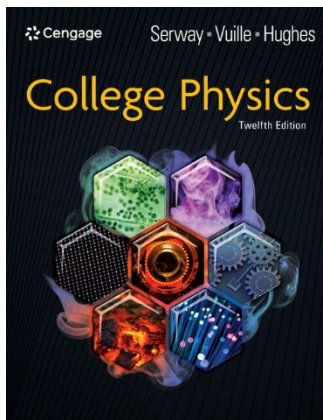
I welcome out-of-class discussions with my students! You can schedule an appointment to meet with me via email.

What will I need to be successful in this class?

Course Description & Materials

Prerequisites: Algebra and Trigonometry at least at a high school level.

Required Materials



Textbook: College Physics, Serway, Vuille, & Hughes 12th Edition

Helpful, Materials

Course Notes, accessible on Course Web Page: <https://faculty.etsu.edu/lutter/courses/phys2010/>

What will I learn in this class?

Course Overview

Course Purpose and Objectives

General Physics I (PHYS 2010) is designed to be taken in tandem with General Physics I Laboratory (PHYS 2011), although students receive a separate grade for each. As with all of our department's Physics and Astronomy courses, we expect that students completing these courses will be able to:

- Appreciate that physics is relevant to the real world and a useful tool for solving problems.
- Develop the inclination and ability to apply problem solving techniques to simplify "real world" problems in terms of simple physics concepts, and to compute or estimate solutions.
- Appreciate that any model or theory of a physical process stands or falls on the basis of experiment.
- Recognize that scientific conclusions, whether yours or those from an outside source, may be incorrect, and develop the ability to check these conclusions with simple calculations, independent external references, and/or common sense.
- Use mathematics to solve equations, and appreciate the dependencies of physical properties on each other.

Major Course Topics: The Course Outline – Fall 2026

<u>Days</u>	<u>Topics</u>	<u>Textbook Readings*</u>
August 24, 26, 28	I. Introduction & II. Math Techniques	Chapter 1
August 28	Math Quiz	Your Background
Aug 31, Sep 2, 4	III. Motion in 1 Dimension	Chapter 2
September 7	Labor Day -- No Class	
September 9, 11	IV. Motion in 2 Dimensions	Chapter 3
September 14, 16, 18	V. Newton's Laws of Motion	Chapter 4
September 21	Exam 1 (Sections I-V)	Chapters 1-4
September 23, 25	VI. Work & Energy	Chapter 5
Sep 28, 30, Oct 2	VII. Momentum, Impulse & Collisions	Chapter 6
October 5, 7, 9	VIII. Circular Motion (No class on Oct 7)	Chapter 7
October 12	Fall Break -- No Class	
October 14, 16	IX. Gravitation	Chapter 7
October 19	Exam 2 (Sections VI-IX)	Chapters 5-7
October 21, 23	X. Rotational Equilibrium & Dynamics	Chapter 8
October 26, 27, 30	XI. Solids & Fluids	Chapter 9
November 2, 4, 6	XII. Thermal Physics	Chapter 10
November 9	Exam 3 (Sections X-XII)	Chapters 8-10
November 11	Veteran's Day -- No Class	
November 13, 16	XIII. Energy in Thermal Processes	Chapter 11
November 20, 23	XIV. Thermodynamics	Chapter 12
Dec 7**	Final Exam (1:20 p.m. -- 3:20 p.m.)	Chapters 1-12

* Note that the textbook lists "Chapters" as "Topics."

** Note that the Final Exam falls on **Monday, December 7th** at the time listed above. The Final Exam covers the entire course.

Expected Learning Outcomes

By the end of this course, you should be able to:

1. Appreciate that physics is relevant to the real world and a useful tool for solving problems.
2. Develop problem-solving skills to simplify “real world” problems in terms of simple physics concepts, and to compute or estimate solutions.
3. Learn the **Scientific Method** – understanding the interplay of hypothesis and experiment for informing and formulating theories and models (*i.e.*, the role of falsifiability in science).
4. Recognize that all good experiments must include at least an estimate of their precision.
5. Recognize that scientific conclusions, whether yours or those from an outside source, may be incorrect, and develop the ability to check these conclusions with simple calculations, independent external references, and/or common sense.
6. Understand both the qualitative and quantitative natures of science, and how mathematics informs crafting of hypotheses and constructing experiments.
7. Use mathematics to solve simple equations, and appreciate the dependencies of physical properties on each other.

More specifically, I expect that students completing this course will be able to:

8. Apply dimensional analysis concepts to perform unit conversions.
9. Demonstrate understanding of one and two dimensional motion by applying kinematic equations to physical linear motion problems.
10. Apply Newton's Laws, as well as work-energy methods and the Impulse-Momentum Theorem, to probe the causes of motion.
11. Appreciate the power of Conservation Laws including energy, linear momentum, and angular momentum in the analysis of dynamics problems. This includes the contexts in which these Laws can be applied.
12. Demonstrate an understanding of rotational kinematics and the angular momentum concepts applicable to rotational motion problems.
13. Understand and apply laws governing static and dynamic fluids.
14. Obtain an introductory fundamental understanding of thermodynamic principles.

What am I expected to do in this class?

Course Policies

What is the attendance policy for this class?

On Campus Attendance is Required for this Course

Roll will be taken occasionally during class. Regular attendance will be useful in obtaining a good grade in this class. Your presence is essential in this class for your best learning! As such, 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.** In that case, then you can

watch the lecture via Zoom. However, **YOU MUST COME TO CLASS IF YOU ARE NOT SICK!!!** You are to let me know ahead of time via email (lutter@etsu.edu) if you need to miss class due to illness.

Please note your professor is *immune-compromised* due to the medications he is taking. As such, keep your distance from me if you are sick. (Again, **do not come to class if you are sick!**)

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 who are ill** 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/index005.htm>

If you plan to watch via Zoom, you are to email me first (lutter@etsu.edu) with the reason why you are doing this, otherwise, you will be expected in the classroom.

What are the expectations for my behavior in class?

In order for everyone to have a positive learning experience, it’s important that we work together to have a safe, non-distracting, and engaged learning environment. Here are expectations to help us meet this goal:

- Do not talk to your classmates during class. If you have a question for the professor, raise your hand.
- **Please turn your cell/smart phones off before coming into class!** The ringing of cell phones often disrupts the class.
- **Cell Phones, Smart Phones, and iPads cannot be used as calculators on the exams in this course!**

Will this syllabus change?

While I have tried to make this syllabus as accurate and complete as possible, I reserve the right to make changes within it at any time. I'll make every effort to notify you of such changes, and information about any changes will be posted from me on D2L.

How will my grade be determined in this class?

Course Grade

How Assignments Contribute to the Final Grade

The final course grade is calculated as:

- Exam 1 = 20%
- Exam 2 = 20%
- Exam 3 = 20%
- Final Exam = 30%
- WebAssign Homework = 10%

Grading Scale: Final Grade

Final grades will be given according to the following scale:

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

How will I show what I'm learning in this class?

Assignment & Assessment Overview

In-Class and Final Exams

There will be a math quiz and 3 “in-class” exams throughout the semester, plus a comprehensive final exam on the dates listed on the “Course Outline” of this syllabus. **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 cover material prior to the test and be taken during class time as shown in the table on the next page. Each exam will be worth 20% and the final

worth 30% of your course grade. The course grade will be based on your total homework score (10%), your total “in-class” exam scores (60%), and the comprehensive final exam (30%). 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 materials. An exception to this rule concerns the final. You will be allowed to bring one 8.5x11" sheet of paper to the final exam with anything you wish to write on it (“examples” might be a better idea than a grocery list) – you are allowed to write on both sides of the paper.

Exam	Class Notes Sections	Textbook Chapters	Date Given
Math Quiz	II	1 & Appendix A	Friday, August 28, 2026
1	I, II, III, IV, V	1, 2, 3, 4	Monday, September 21, 2026
2	VI, VII, VIII, IX	5, 6, 7	Monday, October 19, 2026
3	X, XI, XII	8, 9, 10	Monday, November 9, 2026
Final	$\frac{1}{2}$ (XIII-XIV) + $\frac{1}{2}$ (I-XII)	$\frac{1}{2}$ (11-12) + $\frac{1}{2}$ (1-11)	Monday, December 7, 2026

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*. **However, contact me by email (preferably) or phone *prior* to a scheduled exam to let me know that you are sick.** The make-up exams are similar in structure to the in-class exams, though the questions will be different.

Homework: WebAssign Problem Sets

There will be 4 homework sets assigned throughout the semester. The homework problems will be generated by the **WebAssign** software package supplied by the textbook publisher (*Cengage Publishing*). The total score you received on the **WebAssign** problems will be used in calculating your course score which your course grade will be based upon.

Registering and Accessing WebAssign

To use **WebAssign**, you first need to register yourself into **WebAssign**.

How to Register for Your PHYS-2010-003 Fall 2026 Course:

- 1) Go to the **GetEnrolled.com** website at <https://www.getenrolled.com/?courseKey=etsu72794877>
- 2) Click the “**JOIN COURSE**” button.
- 3) Follow the on-screen instructions to complete your **WebAssign** registration.
- 4) Visit the Cengage Student Registration Page at <https://startstrong.cengage.com/> for a step-by-step guide and short video on how to register for your course.

Once you are registered, to access the textbook publisher's **WebAssign** web site click the following link:

<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 7279 4877

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.

Note that each **WebAssign Problem Set** is due by 6 p.m. on the Due Date listed below:

WebAssign Problem Set	Due Date (by 6 p.m.)
1	Friday, September 18, 2026
2	Friday, October 16, 2026
3	Friday, November 6, 2026
4	Wednesday, December 2, 2026

Extra Credit

Each exam will have a 5 point extra credit question on it (the final will have two 5 point questions).

Other than the extra credit problems on the exams, no extra credit projects will be allowed, so don't even ask.

What might impede my learning in this class?

ETSU Code of Ethics and Course Gen AI Policies

ETSU Code of Ethics

Learning is effortful and sometimes uncomfortable; however, your learning happens best when you use your own brain instead of relying on others (or technology) to do the thinking for you.

Therefore, please avoid plagiarizing or other forms of cheating, as outlined in our University's Academic Integrity policy. And, if you know someone else is engaging in these behaviors, be sure to report this because it is part of our ETSU Honor Code.

Generative AI Use in This Class

NO ONLINE HELP WEB PAGES (Generative AI) are to be used for the 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 I am 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 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, your instructor will follow the steps laid out in the **Academic Integrity and Misconduct Policy** laid out below.

In addition, my expectation is that everyone, including me, follows [ETSU's policy and guidelines for Gen AI use](#).

Academic Integrity and Misconduct Policy

Students are expected to abide by the **ETSU Honor Code** and to act with honor, integrity, and civility in all matters. The course instructor has the primary responsibility for maintenance of academic integrity. Students guilty of academic misconduct, either directly or indirectly, through participation or assistance, are immediately responsible to the course instructor. Any form of academic misconduct (plagiarism, cheating, etc.) is subject to disciplinary action. Sanctions for a violation may vary with the severity of the offense. The instructor may reduce a grade up to and including assignment of an "F" or a zero ("0") for the exercise/examination or an "F" in the course. If a sanction is imposed then the instructor must begin the academic misconduct procedures and notify both the student and the Dean/Designee. Students may appeal a grade assignment associated with a finding of academic misconduct, as distinct from a student disciplinary or grade appeals process, through **the University's Academic Misconduct Procedures**. The student will not be subjected to any form of pressure to coerce admission of guilt or information about his/her conduct or that of others.

What else is important for me to know for my success?

Additional Information

Syllabus Attachment Information

Syllabus Attachment Information: The University's approved Syllabus Attachment Information page provides information about relevant University and Academic Policies that important for you to know. <https://www.etsu.edu/curriculum-innovation/syllabusattachment.php>

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.

What are other resources I can access to further my learning?

Resources & References

Resources

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 during secondary school. Due to this, there are a variety of ways to get additional help with this course.

- **The Center for Academic Achievement** offered by ETSU (see <https://www.etsu.edu/students/learning/> on the web).
- **Assistance from the Professor** via email or “by-appointment” office hours.
- **Attending Supplemental Instruction** sessions, lead by SI Instructor **Rylie Ditty**.
- **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.
- **Review sessions** prior to each exam (either in-class reviews or at a supplemental day and time).

With these supplemental instruction options, students can gain valuable help with this difficult 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 Lifeline: 1-800-273-TALK (8255).