

South Plains College

Common Course Syllabus: PHYS 1402

Revised Spring 2026

Department: Science

Discipline: Physics

Course Number: PHYS 1402.H001

Course Title: General Physics 2

Available Formats: face to face

Campus: Levelland

Instructor: Dr. Kimberly Bouldin

Office: S70 Levelland campus

Office hours: MW 12:30-1pm, 3:45-4:00,
TTh 10-11am, 12:30-1pm, & 3:45-4:00pm, F 9am-noon

Office phone number: 806-716-2950

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SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE.

Course Room: S65

Course Description: Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving.

Pre-requisite: PHYS 1401

Credit hours: 4 **Lecture hours:** 3 **Lab hours:** 3

Course Textbook: Physics, 5th Edition by James Walker, required (online access code not required)

Supplies: Students will each need a three ring binder, a spiral notebook or loose leaf paper that will fit inside the binder, a notecard or notecards no larger than 3" by 5", a scientific calculator (not a phone), and writing utensils.

This course partially satisfies a Core Curriculum Requirement: Life and Physical Sciences Foundational Component Area (030)

Core Curriculum Objectives addressed:

Communication skills--to include effective written, oral, and visual communication.

Critical Thinking skills--to include creative thinking, innovation, inquiry and analysis, evaluation and synthesis of information.

Empirical and Quantitative skills--to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Teamwork skills--to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Student Learning Outcomes:

Upon successful completion of this course, students shall be able to:

1. Solve problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.
2. Apply Kirchhoff's Rules to analysis of circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.
3. Solve problems in the electrostatic interaction of point charges through the application of Coulomb's Law.
4. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents that produce them.
5. Use Faraday's and Lenz's laws to determine electromotive forces and solve problems involving electromagnetic induction.
6. Articulate the principles of reflection, refraction, diffraction, interference, and superposition of waves.
7. Describe the characteristics of light and the electromagnetic spectrum.

Student Learning Outcomes Assessment: A pre- and post-test will be used to determine the extent of improvement that the students have gained during the semester.

Breakdown of Grading:

Lab exercises/homework	10%
Quizzes	10%
Exam 1	25%
Exam 2	25%
Midterm project	15%
Honors project	10%
Final	5%

Grading scale:

100---A---90, 89---B---80, 79---C---70, 69---D---60, 59---F---0

(Bonus points may be given for assignments and activities that are considered above and beyond course requirements. All bonus points will be added to one quiz grade. *Students are strongly encouraged to attempt all bonus assignments.*)

Attendance Policy:

Attendance in this class will be taken from completed assignments. Everything done face-to-face in class will be recorded and posted on Blackboard. If a student feels ill with ANY symptoms of COVID-19, the student will be required to stay home and complete the assignments for the day at home.

South Plains College is committed to maintaining a safe and healthy learning and work environment for students, faculty and staff as the SPC Texan Community returns to campus amid the COVID-19 pandemic. To accomplish this goal, it is imperative that everyone join together to do their part. SPC has developed a Return to Campus Plan that outlines how the college will operate and the measures that will be implemented to help protect you and your loved ones. We look forward to welcoming you back to campus, as we continue to emphasize the following points:

- All students, faculty and staff should monitor their health and notify appropriate personnel and their health care provider if they experience any symptoms related to COVID-19.
- All students, faculty and staff who have symptoms of COVID-19 should contact DeEtte Edens, BSN, RN in Health Services at dedens@southplainscollege.edu or at (806) 716-2376.
- Cleaning and sanitization process will be emphasized in every area of our campus.

You should always check Blackboard before coming to class in order to make sure that class has not been cancelled due to the instructor's illness.

Computer/Software requirements**Minimum Computer Requirements:**

1. Personal computer with a 1 GHz Pentium processor and at least 512 MB of RAM memory, a minimum 5 GB of free hard drive, running Windows 7 / MacOS 10.8 or later (Windows 10 / MacOS 10.12 recommended).
2. Web Browser: Google Chrome seems to work the best with Blackboard and HOL.
3. A high speed internet connection of 5+ Mbps.
4. Microsoft Office and Microsoft PowerPoint and Word software (a recent version, preferably 2016 or higher).
5. Windows Media Player (the latest version).
6. Soundcard and functioning speakers.
7. Knowledge of how to navigate Google Chrome web pages and how to deal with pop-up blockers and other devices and warnings on Google Chrome.
8. Knowledge of how to download files from the Google Chrome and find them on your computer once they are downloaded.
9. Knowledge of basic operations of Microsoft Word and Microsoft PowerPoint.
10. Knowledge of how to view and adjust videos with Windows Media Player.

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry, please visit <https://www.southplainscollege.edu/syllabusstatements/>.

PHYS 1402 General Physics 2 Tentative Daily Schedule Spring 2026

Week 1 Jan 13, 15 Introduction, Ch 19 Lab 1—Electrostatics: electrostatics kit	Week 10 March 24, 26 Ch 22 cont Lab 8—Simplest Motor
Week 2 Jan 20, 22 Ch 19 cont Lab 2—Electrostatics: Van de Graffe generator	Week 11 March 31, April 2 Ch 22 cont Lab 9—Simple Motor Review for Exam 2 (Easter Break April 3)
Week 3 Jan 27, 29 Ch 19 cont, Ch 20 Lab 3—Electrostatics: repelling charged pith balls HW Ch 19 due Jan 29 Quiz 1 on Ch 19 on Jan 29	Week 12 April 7, 9 Exam 2 on Ch 21-22 on April 7 HW for Ch 22 due April 7 Midterms projects are due on April 9 by 1pm. Day 1 Midterm presentations April 9
Week 4 Feb 3, 5 Ch 20 Draw Midterm topics and discuss rubric Nova Fabric of the Cosmos Ep 1	Week 13 April 14, 16 Ch 23 Day 2 Midterm presentations April 14 Honors Project presentations April 14 Quiz 2 over midterm presentations April 16 Lab 10—Optics: diffraction, interference
Week 5 Feb 10, 12 Ch 20 cont Lab 4—Introduction to multimeters Review for Exam 1	Week 14 April 21, 23 Ch 23 cont Nova Fabric of the Cosmos Ep 4
Week 6 Feb 17, 19 Ch 21 Exam 1 on Feb 17 on Ch 19-20 Lab 5—Mapping the Electric Field HW Ch 20 due Feb 17	Week 15 April 28, 30 Ch 23 cont Lab 11—Optics: Refraction, Nuclear Decay and Half life HW for Ch 23 due by April 30 Review for Final Exam All Bonus assignments will be due by April 30 at 4pm.
Week 7 Feb 24, 26 Ch 21 cont Lab 6—Resistors and multimeters, Simple Circuits	Final exam will be in class Tuesday, May 5 from 1-3pm.
Week 8 March 3, 5 Ch 21 cont Lab 7—Kirchhoff's Law problem Nova Fabric of the Cosmos Ep 2	(Exemption from the final exam will be a fidget spinner motor, surrendered to the instructor, which runs continuously for at least 2 full minutes in the instructor's presence.)
Week 9 March 10, 12 Ch 22 Nova Fabric of the Cosmos Ep 3 HW Ch 21 due March 10 (Spring Break March 16-20. Campus closed.)	