South Plains College

Common Course Syllabus: PHYS 1401

Revised Fall 2026

Department: Science
Discipline: Physics
Course Number: PHYS 1401.001
Course Title: General Physics 1
Available Formats: face to face
Campus: Levelland

Instructor: Dr. Kimberly Bouldin
Office: S70 Levelland campus
Office hours: MW 12:30-1pm, 3:45-4:00pm,
TTh 10-11am & 12:30-1pm, 3:45-4:00pm, **F** 9am-noon
Office phone number: 806-716-2950
Email: KBouldin@southplainscollege.edu

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 classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem solving.

Pre-requisite: MATH 1316 or consent of instructor.
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. For any outdoor lab activities, each student may want an outdoor blanket or lawn chair.

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. Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration.
2. Apply Newton's laws to physical problems including gravity.
3. Solve problems using principles of energy.
4. Use principles of impulse and linear momentum to solve problems.
5. Solve problems in rotational kinematics and dynamics, including the determination of the location of the center of mass and center of rotation for rigid bodies in motion.
6. Solve problems involving rotational and linear motion.
7. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
8. Demonstrate an understanding of equilibrium, including the different types of equilibrium.
9. Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.
10. Solve problems using the principles of heat and thermodynamics.
11. Solve basic fluid mechanics problems.
12. Demonstrate techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
13. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.

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:

Homework/Lab exercises	10%
Quizzes	10%
Exam 1	25%
Exam 2	25%
Midterm project	25%
Final	5%

Grading scale:

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

Note: Final grades will be calculated using the above grade breakdown at the end of the semester.

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

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 symptoms of COVID-19 (or anything else), the student will be required to stay home and complete the assignments for the day at home.

Please also notify DeEtte Edens, BSN, RN, Associate Director of Health & Wellness, at dedens@southplainscollege.edu or 806-716-2376. Proof of a positive Covid test is required. A home test is sufficient but students must submit a photo of the positive result. The date of test must be written on the test result and an ID included in the photo. If tested elsewhere (clinic, pharmacy, etc.), please submit a copy of the doctor's note or email notification. Results may be emailed to DeEtte Edens, BSN, RN at dedens@southplainscollege.edu.

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.

Additional notes on technology:

I will respond to individual emails as quickly as I can. I will always send a reply email when an assignment is sent through email to let the student know that I have received it. If you send me something through email, and you do not receive a response within 2 school days, please resend it. I will always at least touch base with you within a 2-day time period unless I am ill. Also, a student will not be punished in the event that Blackboard or an SPC server is down when an assignment is due. If you need to print, turn something in, or access something online, please try to do so ahead of time and not at the last minute in order to avoid this situation.

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 1401 General Physics 1 Tentative Weekly Schedule Fall 2026

Week 1 Aug 25, 27 Introduction (Get textbook, read Ch 1) Lecture- Ch 1, Lab 1- Measurements and Units, Measuring Up HW Ch 1 **(All HW assignments are listed in that chapter's lecture notes, due one week after assignment)**	Week 9 Oct 20, 22 Lecture- Ch 9, Lab 9-Momentum HW Ch 9 Watch Flatland video
Week 2 Sept 1, 3 Lecture- Ch 2, Lab 2-Distance-Velcity-Acceleration, How Do Your Rate? HW Ch 2	Week 10 Oct 27, 29 Lecture- Ch 10, Lab 10-Archimedes Principle/Hot Air Balloons HW Ch 10
Week 3 Sept 8, 10 Lecture-Ch 3, Lab 3- Vector Voyage/1D Rocket HW Ch 3 **Quiz 1 over Ch 1 & 2 on Sept 8**	Week 11 Nov 3, 5 Lecture- Ch 11, Lab 11- Rotational Motion and Center of Mass HW Ch 11 Review for Exam 2
Week 4 Sept 15, 17 Lecture- Ch 4, Lab 4- 2D Projectile motion HW Ch 4 Draw Midterm Project topics Discuss Midterm rubric	Week 12 Nov 10, 12 **Exam 2 over Ch 6-10 on Nov 10** Lecture- Ch 12-18 select topics and demos, Lab 13- Bernoulli's Principle No HW
Week 5 Sept 22, 24 Lecture- Ch 5, Lab 5- Forces HW Ch 5 Watch Math Mysteries video Review for Exam 1	Week 13 Nov 17, 19 **Student midterm presentations Day 1 Nov 17** (Note: All midterm papers are due Nov 17 at the beginning of class.) **Student midterm presentations Day 2 Nov 19**
Week 6 Sept 29, Oct 1 Lecture- Ch 6, Lab 6- Simple Harmonic Motion/Spring Constant **Exam 1 over Ch 1-5 on Sept 29** HW Ch 6	Week 14 Nov 24 **(Campus closed Nov 26: Thanksgiving)** **Student midterm presentations Day 3** Prepare for Student Designed Lab
Week 7 Oct 6, 8 Lecture- Ch 7, Lab 7- SHM lab continued, Egg Drop Contest HW Ch 7	Week 15 Dec 1, 3 **Quiz 2 over Midterm Presentations on Dec 1** Review for Final Exam Select demos, Lab 14- student designed **All HW and Bonus Projects are due on Dec 3 by 4pm**
Week 8 Oct 13, 15 Lecture- Ch 8, Lab 8- Conservation of Energy/Marble coasters HW Ch 8	**The final exam will be in class on Tuesday, December 8 from 1-3pm.**