

South Plains College

Fall 2019

Course Syllabus

PHYS 1401.001 General Physics I

Instructor: Dr. Kimberly Bouldin

Office: S106, Levelland campus

Office hours: **MW** 12:30-1pm Levelland, 2-2:30 Reese (R226),

TTh 10-11am, 12:30-1pm, **F** 9am-noon, *other times by appointment*

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SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE.

Course Room: S104

Course Textbook: Physics, 5th Edition by James Walker

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

Materials Needed: Students will each need a 1.5" or 2" three ring binder, a spiral notebook that will fit inside the binder, a notecard or notecards no larger than 5"x 7", a scientific calculator (not a phone), and writing utensils.

Course Learning Objectives

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.

Core Skills Developed in this Course

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.

Breakdown of Grading:

Attendance/participation	10%
Quizzes	15%
Lab exercises	15%
Exam 1	10%
Exam 2	10%
Exam 3	10%
Midterm	15%
Final	15%

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. *Students are strongly encouraged to attempt all bonus assignments.*)

Attendance

Attendance in class is required at South Plains College. If you should have to be absent for class for any reason, please call or text a fellow student in the class to see what you have missed. In addition, **send the instructor an email** or call as soon as possible after an absence or before an absence if you have a planned conflict. Up to **five excused absences** per semester are allowed

for any reason. Whenever you have 6 total absences, the instructor may withdraw you from the course with a grade of X or F. I do not distinguish between excused and unexcused absences (unless the absence is due to a school sponsored event). If you stop attending class, you should go through the procedure for dropping a course to obtain a grade of W or U. (See the South Plains College General Catalog for more details.) Attendance and effort are the most important activities for success in this course. Please schedule work, doctor appointments, parent-teacher conferences, university advising sessions, etc. at a time other than your class time.

Cell Phones: Use of cell phones during class will be limited to constructive, course-related usage. Students who become a distraction to anyone during class, by using his/her phone or in any other manner, will be given a one-time warning. After that student's second offense (whether it be on the same day as the first offense or not), the student will be excused from that day's class. This will count as one of the student's five absences, in addition to the student receiving a zero for attendance for that day. **(If a student is expecting an important call, please inform the instructor at the beginning of class.)**

Academic Integrity

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. Classroom behavior that is not conducive to learning will be dealt with according to the guidelines set forth on the South Plains College Catalog. The attempt of any student to present as his or her own work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

4.1.1.1. Diversity Statement

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

4.1.1.2. Disabilities Statement

Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

4.1.1.3. Non-Discrimination Statement

South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

4.1.1.4 Title IX Pregnancy Accommodations Statement

If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact Crystal Gilster, Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.

4.1.1.5 Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: <https://www.southplainscollege.edu/campuscarry.php>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

PHYS 1401 General Physics I Tentative Daily Schedule Fall 2019

Day 1 Aug 27 Introduction, Ch 1	Day 18 Oct 24 Ch 8, lab 10-poster board roller coaster/Cons of Energy
Day 2 Aug 29 Ch 1 cont, lab 1-Measurements and Units	Day 19 Oct 29 Ch 8 cont
Day 3 Sept 3 Ch 2, lab 2-Measuring Up	Day 20 Oct 31 Ch 9, lab 11-Game Room Cons of Momentum
Day 4 Sept 5 Ch 2 cont, lab 3-Vector Voyage	Day 21 Nov 5 Review for Exam 3, lab 12-Ballistic pendulum, Start Ch 10
Day 5 Sept 10 Ch 3, Quiz 1 on Ch 1-2, Vector activity	Day 22 Nov 7 Exam 3
Day 6 Sept 12 Ch 3 cont, lab 4-Distance-Velocity-Acceleration, How Do You Rate?	Day 23 Nov 12 Ch 10 cont, start Ch 11, lab 13-The Incredible Rotating Student
Day 7 Sept 17 Review for exam 1, draw midterm topics, start Ch 4, lab 5- 1-D Rocket Lab	Day 24 Nov 14 Ch 11 cont, lab 14-All Fall Down/Torque Wrench/How Stable Are You?
Day 8 Sept 19 Exam 1	Day 25 Nov 19 Ch 12
Day 9 Sept 24 Ch 4 cont, lab 6- Range (2-D) Rocket lab/Projectile Motion lab	Day 26 Nov 21 Midterm presentations Day 1
Day 10 Sept 26 Ch 4 cont, start Ch 5, continue with projectile motion labs	Day 27 Nov 26 Midterm presentations Day 2
Day 11 Oct 1 Ch 5 cont, lab 7- Force	Day 28 Nov 28 Thanksgiving Break, No classes
Day 12 Oct 3 Ch 5 cont, Quiz 2	Day 29 Dec 3 Quiz 3 over oral presentations, lab 15-Hot Air Balloon lab
Day 13 Oct 8 Ch 6, lab 8- Coefficient of Friction	Day 30 Dec 5 Ch 13, lab demos on waves, review for Final
Day 14 Oct 10 Ch 6 cont, lab 9-Simple Harmonic Motion/Spring Constant	Day 31 Dec 10 1-3pm, S104 Final Exam
Day 15 Oct 15 Ch 6 cont/review for Exam 2	
Day 16 Oct 17 Exam 2	
Day 17 Oct 22 Ch 7	