

# South Plains College

Fall 2018 Semester

Course Syllabus

## PHYS 1401.001 General Physics I

Instructor: Dr. Kimberly Bouldin

Office: S106, Levelland campus

Office hours: 1 – 3:30 pm MW, 9 – noon F, *other times by appointment*

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**SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE.**

**Course Room:** S104

**Course Textbook:** Physics, 5<sup>th</sup> 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	10%
Homework	10%
Lab exercises	10%
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. 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 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 excused 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.

### **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.

### **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.

**Note to students with disabilities:** If you have a disability-related need for reasonable academic adjustments in this course, provide the instructor with a letter of accommodation from the Disability Services Office. If you need immediate accommodations or physical access, please arrange to meet with the Disability Services Office before the next class meeting.

### **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.