

South Plains College

Fall 2019 Semester

Course Syllabus

PHYS 1402.200 General Physics II

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*

Office phone number: 806-716-2950

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SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE.

Course Room: R226

Course Textbook: Physics, 5th Edition by James Walker

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

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 several notecards no larger than 3"x 5", a scientific calculator (not a phone), and writing utensils.

Course Learning Objectives

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.

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. 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.

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 1402 General Physics 2 Tentative Schedule Fall 2019

Day 1 Aug 26 Intro, Ch 19	Day 16 Oct 16 Ch 22 cont
Day 2 Aug 28 Ch 19 cont, lab 1- electrostatics: pith balls, electrostatics kit	Day 17 Oct 21 Ch 22 cont, lab 5–circuits
Day 3 Sept 2 Labor Day, no classes	Day 18 Oct 23 Ch 22 cont, lab 6- simplest motor, review for Exam 2
Day 4 Sept 4 Ch 19 cont	Day 19 Oct 28 Exam 2
Day 5 Sept 9 19 cont/start Ch 20, lab 2- electrostatics Van de Graff generator	Day 20 Oct 30 Ch 23, lab 7-simple motor
Day 6 Sept 11 Ch 20 cont, Quiz 1	Day 21 Nov 4 Ch 23 cont
Day 7 Sept 16 Ch 20 cont	Day 22 Nov 6 Ch 23 cont, lab 7-fidget spinner motor
Day 8 Sept 18 Ch 20 cont, lab 3-electric field	Day 23 Nov 11 Ch 23 cont, Quiz 3
Day 9 Sept 23 Ch 20 cont, Nova video on Time	Day 24 Nov 13 Ch 25, lab 8-index of refraction
Day 10 Sept 25 Review for Exam 1	Day 25 Nov 18 Ch 25 cont, Ch 26, review for Exam 3
Day 11 Sept 30 Exam 1	Day 26 Exam 3
Day 12 Oct 2 Ch 21	Day 27 Nov 25 Midterm oral presentations
Day 13 Oct 7 Ch 21 cont, lab 4-resistors and multimeters	Day 28 Nov 27 Thanksgiving break, no classes
Day 14 Oct 9 Ch 21 cont, Quiz 2	Day 29 Dec 2 Quiz 4 over Oral Presentations, lab/demo-interference and diffraction
Day 15 Oct 14 Ch 22	Day 30 Dec 4 Review for Final, video or lab over modern physics
Final Exam will be on Monday, December 9 from 1:00 – 3:00pm in R226. (Exemption from the final exam will be a fidget spinner motor, surrendered to the instructor, which runs continuously for at least 30 seconds.)	