

**South Plains College**  
**Common Course Syllabus: PHYS 1402**  
**Revised Spring 2020**

**Department:** Science  
**Discipline:** Physics  
**Course Number:** PHYS 1402.001  
**Course Title:** General Physics 2  
**Available Formats:** conventional  
**Campus:** Levelland

**Instructor:** Dr. Kimberly Bouldin  
**Office:** S106 Levelland campus, R228 Reese campus  
**Office hours:** **MW** 12:30-1pm Levelland, 2-2:30 Reese (R228),  
**TTh** 10-11am & 12:30-1pm (Levelland) **F** 9am-noon (Levelland), *other times by appointment*  
**Office phone number:** 806-716-2950  
**Email:** [KBouldin@southplainscollege.edu](mailto:KBouldin@southplainscollege.edu)

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

**Course Room:** S104

**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, 5<sup>th</sup> 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 Kirchoff'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:

Attendance/participation/homework	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 Policy:**

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 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. If your absence is due to a school sponsored event, I will give you an excused absence. (This means that any attendance/participation and/or lab grades will not count for that day. You will still, however, be responsible for any other assignments due or assigned that day.) 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. For conflicts occurring due to another class, please see the instructor.

**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.

**Student Code of Conduct Policy:** Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning. Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

**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.

**Non-Discrimination Policy**

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.

**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](mailto:cgilster@southplainscollege.edu) for assistance.

**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 Daily Schedule Spring 2020

Day 1 Jan 14 Intro, Ch 19	Day 16 March 5 Ch 22 cont
Day 2 Jan 16 Ch 19 cont, lab 1- electrostatics: electrostatics kit	Day 17 March 10 Ch 22 cont, lab 6–circuits
Day 3 Jan 21 Ch 19 cont, lab 2-electrostatics: repelling charged pith balls	Day 18 March 12 Ch 22 cont, lab 7- simplest motor, review for Exam 2
Day 4 Jan 23 Ch 19 cont, lab 3-Van de Graff generator	Day 19 March 24 <b>Exam 2</b> on Ch 21-22 ( <i>Spring Break March 16-20</i> )
Day 5 Jan 28 Ch 19 cont	Day 20 March 26 Ch 23, lab 8-simple motor
Day 6 Jan 30 Ch 20, <b>Quiz 1</b> on Ch 19	Day 21 March 31 Ch 23 cont
Day 7 Feb 4 Ch 20 cont, videos on Faraday cage and capacitors	Day 22 April 2 Ch 23 cont, lab 9-waves/optics
Day 8 Feb 6 Ch 20 cont, lab 4-mapping the electric field	Day 23 April 7 Ch 23 cont, <b>Quiz 3</b> on Ch 23
Day 9 Feb 11 Ch 20 cont, Nova video-Fabric of the Cosmos Ep 1	Day 24 April 9 Ch 25, lab 10-index of refraction
Day 10 Feb 13 Ch 20 cont, Review for Exam 1	Day 25 April 14 Ch 25 cont, review for Exam 3
Day 11 Feb 18 <b>Exam 1</b> on Ch 19-20	Day 26 April 16 <b>Exam 3</b> on Ch 21-23, 25
Day 12 Feb 20 Ch 21	Day 27 April 21 Midterm oral presentations day 1
Day 13 Feb 25 Ch 21 cont, lab 5-resistors and multimeters	Day 28 April 23 Midterm oral presentations day 2
Day 14 Feb 27 Ch 21 cont, <b>Quiz 2</b> on Ch 21	Day 29 April 28 <b>Quiz 4</b> over Oral Presentations, lab/demo-interference and diffraction
Day 15 March 3 Ch 22	Day 30 April 30 Review for Final, video or lab over modern physics
<b>Final Exam will be on Tuesday, May 5 from 1:00 – 3:00pm in S104. (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.)</b>	