

South Plains College
Common Course Syllabus: PHYS 1402
Revised Fall 2024

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

Instructor: Dr. Kimberly Bouldin
Office: S70 Levelland campus
Office hours: MW 12:30-1pm, 3:45-4:00,
TTh 10-11am, 12:30-1pm, & 3:45-4:00pm, F 9am-noon
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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 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, 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.

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:

Lab exercises/homework	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

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

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 ANY symptoms of COVID-19, the student will be required to stay home and complete the assignments for the day at home.

- All students, faculty and staff who have symptoms of COVID-19 should contact DeEtte Edens, BSN, RN in Health Services at dedens@southplainscollege.edu or at (806) 716-2376.

For more information on the attendance policy, please see the following link:

http://catalog.southplainscollege.edu/content.php?catoid=60&navoid=2086#Class_Attendance

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 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 even 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.

Dropping a Course: Students may drop courses through Texan Connect, the Admissions and Records Office, or Advising and Testing Center through the late registration period.

After late registration has closed, a student must complete the online Student Initiated Drop Request to drop a course.

Students may also drop courses in person at any campus location by completing a Student Initiated Drop Form. Complete a Student Initiated Drop Form and return the signed form to the Levelland Admissions and Records Office, the Student Support Center at the Lubbock Downtown Center, the Lubbock Career and Technical Center, or Plainview Center. You must have a picture ID to complete the drop.

A mark of “W” will be given for student-initiated drops that occur prior to and through the last day to drop as indicated in the online Academic Calendar found here:
<https://www.southplainscollege.edu/academiccalendar/index.php>.

Syllabus Statements: For information about Artificial Intelligence, Disabilities, Non-Discrimination, Intellectual Exchange, Title IX Pregnancy Accommodations, CARE (Campus Assessment, Response, and Evaluation) Team, Campus Concealed Carry, and COVID-19, please use this link: <https://www.southplainscollege.edu/syllabusstatements/>.

Plagiarism and Cheating: Students are expected to do their own work on all projects, quizzes, assignments, examinations, and papers. Failure to comply with this policy may result in an F for the assignment and can result in an F or X for the course, if circumstances warrant.

Plagiarism violations include, but are not limited to, the following:

1. Submitting work that has been purchased, borrowed, or downloaded from another student or an online term paper site.
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.
5. Violating the Artificial Intelligence policy, as outlined in the syllabus. For more information on AI, please reference this in the syllabus statements:
<https://www.southplainscollege.edu/syllabusstatements/>

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another’s work during an examination or on a homework assignment;
8. Rewriting another student’s work in Peer Editing so that the writing is no longer the original student’s;
9. Taking pictures of a test, test answers, or someone else’s paper.

PHYS 1402 General Physics 2 Tentative Daily Schedule Fall 2024

<p>Week 1 Aug 26, 28 Introduction, Ch 19 Lab 1—Electrostatics: electrostatics kit</p>	<p>Week 10 Oct 28, 30 Ch 22 cont Lab 8—Simplest Motor</p>
<p>Week 2 Sept 4 (Sept 2 Labor Day Holiday) Ch 19 cont Lab 2—Electrostatics: Van de Graff generator</p>	<p>Week 11 Nov 4, 6 Ch 22 cont Lab 9—Simple Motor Review for Exam 2</p>
<p>Week 3 Sept 9, 11 Ch 19 cont, Ch 20 Lab 3—Electrostatics: repelling charged pith balls HW Ch 19 due Sept 11 Quiz 1 on Ch 19 on Sept 11</p>	<p>Week 12 Nov 11, 13 Exam 2 on Ch 21-22 on Nov 11 HW for Ch 22 due Nov 11 Midterms projects are due on Nov 13 by 1pm. Day 1 Midterm presentations Nov 13</p>
<p>Week 4 Sept 16, 18 Ch 20 Draw Midterm topics and discuss rubric Nova Fabric of the Cosmos Ep 1</p>	<p>Week 13 Nov 18, 20 Ch 23 Quiz 2 over midterm presentations</p>
<p>Week 5 Sept 23, 25 Ch 20 cont Lab 4—Introduction to multimeters Review for Exam 1</p>	<p>Week 14 Nov 25, 27 Ch 23 cont Lab 10—Optics: diffraction, interference Nova Fabric of the Cosmos Ep 4</p>
<p>Week 6 Sept 30, Oct 2 Exam 1 on Sept 30 on Ch 19-20 Lab 5—Mapping the Electric Field HW Ch 20 due Sept 30 Start Ch 21</p>	<p>Week 15 Dec 2, 4 Ch 23 cont Lab 11—Optics: Refraction, Nuclear Decay and Half life HW for Ch 23 due by Dec 4 Review for Final Exam All Bonus assignments will be due by Dec 4 at 4pm.</p>
<p>Week 7 Oct 7, 9 Ch 21 cont Lab 6—Resistors and multimeters Nova Fabric of the Cosmos Ep 2</p>	<p>Final exam will be in class Monday, Dec 9 from 1-3pm.</p>
<p>Week 8 Oct 14, 16 Ch 21 cont Lab 7--Kirchhoff's Law problem</p>	<p>(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.)</p>
<p>Week 9 Oct 21, 23 Ch 22 Nova Fabric of the Cosmos Ep 3 HW Ch 21 due Oct 23</p>	