

Syllabus
PHYS 1102 - Lab
General College Physics

Western Texas College
2020-2021

- I. Basic Course Information:
 - A. Laboratory activities will reinforce 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.
 - B. Prerequisites: PHYS 1401 College Physics I (lecture and laboratory).
 - C. Online course content is administered through the college's learning management system (LMS), Moodle, also called eCampus. A link to eCampus can be found on my.wtc.edu and to Moodle (the big M with a graduation cap) on the college's home page, www.wtc.edu.

- II. Student Learning Outcomes (SLO)
 - A. Develop techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
 - B. Demonstrate the collections, analysis, and reporting of data using the scientific method.
 - C. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
 - D. Solve Problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.
 - E. Apply Kirchhoff's Rules to analysis of circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.
 - F. Solve problems in the electrostatic interaction of point charges through the application of Coulombs Law.
 - G. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents which produce them.
 - H. Use Faradays and Lenzs laws to determine electromotive forces and solve problems involving electromagnetic induction.
 - I. Solve problems applying the principles of reflection, refraction, diffraction, interference, and superposition of waves.
 - J. Solve practical problems involving optics, lenses, mirrors, and optical instruments.

- III. Testing Requirements
 - A. The lab final exam must be proctored by an approved testing organization. (Ask your instructor for more details).
 - B. Students are NOT allowed to use their book or notes of any kind while taking their lab final exam.
 - C. Students are allowed to use the formula sheet provided for the lab final exam.
- IV. Major Course Requirements
 - A. Major Requirements 1: There will be 7 unit lab write-ups with the average grade for labs based on the highest six labs.
 - B. Major Requirement 2: Lab final exam.
- V. Grading System
 - A. See the First Day Handout for the percentages of the average in this course and the letter grade breakdown for the final grade.
- VI. **Information on Books and Other Course Materials**
 - A. Instructor will provide students with a list of supplies needed for experiments.
- VII. Other policies: Please refer to the WTC Course Catalog for the following:
 - A. Campus Calendar
 - B. Final Exam Schedule
 - C. How to drop a class
 - D. Withdraw information
 - E. Student conduct/ Academic Integrity
 - F. Class Attendance
 - G. Students with disabilities
- VIII. Course Organization and Schedule
- IX.

Labs	Topics
Lab 1	Charges and Electric Field
Lab 2	Ohm's Law
Lab 3	Kirchhoff Circuits/Resistances/Capacitors
Lab 4	Capacitors/ Charge and discharge
Lab 5	Magnetism/Earth's Magnetic Field/The Tangent Galvanometer
Lab 6	Magnetic Induction/Circuits RL
Lab 7	Geometric Optics /Lenses and Mirrors

Disclaimer: Schedule and content is subject to change at the instructor's discretion.