South Plains College
Common Course Syllabus: ENGR 2105
Revised December 2022

Department: Mathematics, Engineering, and Computer Science

Discipline: Engineering

Course Number: ENGR 2105

Course Title: Electrical Circuits I Laboratory

Available Formats: conventional and hybrid

Campuses: Downtown Center

Course Description: Laboratory experiments supporting theoretical principles presented in ENGR 2305 involving DC and AC circuit theory, network theorems, time, and frequency domain circuit analysis. Introduction to principles and operation of basic laboratory equipment; laboratory report preparation.

Corequisite: ENGR 2305

Credit: 1 **Lecture:** 0 **Lab:** 4

Textbook:

Supplies: Please see the instructor's course information sheet for specific supplies.

This course partially satisfies a Core Curriculum Requirement: None

Core Curriculum Objectives addressed:

- **Communications 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 competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.
2. Conduct basic laboratory experiments involving electrical circuits using laboratory test equipment such as multimeters, power supplies, signal generators, and oscilloscopes.
3. Explain the concepts of Thévenin-equivalent circuits and linear superposition and apply them to laboratory measurements.
4. Predict and measure the transient and sinusoidal steady-state responses of simple RC and RLC circuits.
5. Predict the behavior and make measurements of simple operational-amplifier circuits.
6. Relate physical observations and measurements involving electrical circuits to theoretical principles.
7. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor may remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student can not receive an X, the instructor will assign an F.

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

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
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.

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 an 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.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect from the student and the instructor. Neither the instructor nor the student should be subject to others' rude, disruptive, intimidating, aggressive, or demeaning behavior**.** 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.

South Plains College policies concerning diversity, disabilities, non-discrimination, Title IX Pregnancy Accommodations, and Campus Concealed Carry Statements can be found here: https://www.southplainscollege.edu/syllabusstatements/.

South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here: https://www.southplainscollege.edu/emergency/covid19-faq.php.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester. The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by* Amazon, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases. Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

SOUTH PLAINS COLLEGE
MATHEMATICS, ENGINEERING & COMPUTER SCIENCE

ENGR2105 – Electrical Circuits Lab

Section 601

Room: Lubbock Downtown Center, B032
T/R: 8:00 PM – 9:00 PM

Contact

Instructor: Mr. Vargas
Email: evargas@southplainscollege.edu
Phone: (806) 716-4673

Office Hours:

T/R: 11:00 AM – 2:00 PM (M101, Math Building)
F: 12:30 PM – 2:30 PM (B011 Downtown Center)

Supply List

- Pencils, erasers, paper.
- Non-graphing calculator.
- Computer

Grading

Grading Scale:			**Weights:**		
	A: 90-100	**Pass**		**Lab Assignments (4)**	25% each
	B: 80-89	**Pass**		**Total**	**100%**
	C: 70-79	**Pass**			
	D: 60-69	**Pass**			
	F: 0-59	**Fail**			

Lab Assignments

There will be a total of four (4) labs for the semester. Each lab will consist of the following:

- Utilizing circuit board and elements
- Measuring Voltage, Amperage
- Simulation Software

In addition to having a hands-on approach to circuit problems, a lab report will be required for each lab and be due at the specified calendar day.

Labs:

- Lab 1 – Intro to DC Circuits
- Lab 2 – Circuit Theorems
- Lab 3 – Intro to AC Circuits
- Lab 4 – Phasors and AC Power

Class Policies and Information

Attendance Policy
The student is expected to **submit at least eighty percent (80%)** of the class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor can remove the student from the class.

Office Hours
Office hours will be held at the listed times. Please come prepared with questions and examples of the attempted problem(s)

South Plains College Email Policy
The instructor will respond to all emails **within 36 hours** during the week day. Emails sent after 5:00 PM on Fridays may not be answered until the following Monday morning.

Drop/Withdrawal
Students should submit a Student Initiated Drop Form online to drop from the course. If the student wishes to withdraw from this or more courses, the student needs to contact the Advising Office.

COVID Syllabus Statement
If you are experiencing any of the following symptoms, please do not attend class and either seek medical attention or test for COVID-19.

- Cough, shortness of breath, difficulty breathing
- Fever or chills
- Muscles or body aches
- Vomiting or diarrhea
- New loss of taste and smell

Please also notify DeEtte Edens, BSN, RN, Associate Director of Health & Wellness, at dedens@southplainscollege.edu or 806-716-2376. Proof of a positive test is required. A home test is sufficient but students must submit a photo of the positive result. The date of test must be written on the test result and an ID included in the photo. If tested elsewhere (clinic, pharmacy, etc.), please submit a copy of the doctor's note or email notification. Results may be emailed to DeEtte Edens, BSN, RN at dedens@southplainscollege.edu.

A student is clear to return to class without further assessment from DeEtte Edens, BSN, RN if they have completed the 5-day isolation period, symptoms have improved, and they are without fever for 24 hours without the use of fever-reducing medication. Students must communicate with DeEtte Edens, BSN, RN prior to their return date if still symptomatic at the end of the 5-day isolation.

Course Calendar

Week 4	Feb 9th	Lab 1 Intro to DC Circuits
Week 7	Mar 2nd	Lab 1 Due Lab 2 Circuit Theorems
Mar 13th –17th		SPRING BREAK
Week 10	Mar 31st	Lab 2 Due Lab 3 Intro to AC Circuits
Week 13	Apr 20th	Lab 3 Due Lab 4 Phasors and AC Power
Week 16	May 8th	Lab 4 Due