Lab Instruments and Methods

EE1010 002

Course Description

This course is an introduction to Electrical Engineering and Electrical Engineering Technology. The use of electrical lab equipment is used to construct and test electrical systems. Students will be exposed to career paths in both electrical engineering and electrical engineering technology and the education pathways for each.

Pre-Requisite: ENGR 1010 or MATH 1010 or placement into MATH 1050
Semester(s): All

Course Student Learning Outcomes

- Apply general concepts of AC and DC voltage and current in circuits containing resistors, capacitors, operational amplifiers, diodes, transistors, and embedded processors.

- Demonstrate how and when to use laboratory test equipment to analyze electric circuits.
- Apply basic electric circuit design and production concepts including schematic diagrams, simulation, prototyping, PC board layout and testing.
- Apply Ohm's law to make common calculations to analyze electric circuits.
- Calculate and verify by measuring physical properties commonly found in electric systems.
- Describe decimal and binary number systems and demonstrate conversion between number systems.
- Determine appropriate measurements to analyze circuit performance.
- Select and demonstrate use of suitable tools to make measurements.
- Describe different electrical engineering career opportunities and create an educational plan to achieve those opportunities.

Communication Plan

I prefer you email me via the Canvas Inbox. I will respond to email within 24 hrs. If you have an immediate need text me.

Keys for Success (how to succeed in the course)

For students to be successful in this course, the following actions and student engagement activities are strongly recommended and encouraged:

1. Attend class, take notes, and participate in class activities. Complete all your assignments, and do your best.

2. Read and study the lecture notes, slides, and the relevant handouts.

3. Dedicate at least three hours outside of class for assignments for every one hour spent in class.

4. Use the STEM Learning Resource Center for free tutoring. See their hours here: https://www.slcc.edu/stem/tutoring/stem-learning-resources-hours.aspx

5. Do not hesitate to ask questions.

6. Turn on your Canvas Notifications so that when announcements are posted about the course you get notified immediately.

7. Be familiar with the late policy for this course.

Class Workbook

A workbook with the labs will be provided.

Brief Description of Assignments/Exams

Labs:

This course is intended to be a fun, interesting look into electrical engineering. The entire grade is based upon weekly laboratory projects. Attendance each week is mandatory.

We will be working on the labs during class, completed labs should be checked off by your instructor. If you need to finish a lab outside of class or make up a lab, seek help from James when he's available and there isn't currently a class in the lab. See his lab schedule on the EE lab website.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Capacitors	Assignment	10
	DC Circuits	Assignment	10
	Diodes	Assignment	10
	First Day Wiring and Voltages	Assignment	10
	Introduce Yourself	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Meeting with Academic Advisor	Assignment	10
	Meeting with Teacher	Assignment	10
	Microcontroller 1	Assignment	10
	Microcontroller 2	Assignment	10
	MultiSim	Assignment	10
	Multivibrator	Assignment	10
	Ohm's Law	Assignment	10
	OpAmps	Assignment	10
	Oscilloscopes	Assignment	10
	PCB Layout	Assignment	10
	Soldering	Assignment	10
	Transistors	Assignment	10
10/5	Academic Planning Form	Assignment	10

Grading Scale

A 93-100
A- 90-92
B+ 87-89
B 83-86
B- 80-82
C+ 77-79
C 73-76
C- 70-72

D 61-69
E <60

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

You can access the document by clicking on the following link: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, please visit the Institutional Syllabus under the Tutoring and Learning Support tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the

challenges of college life. To learn more about the resources available to you and how to access them, please visit the Institutional Syllabus under the Advising and Counseling Support Services tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar