

# EECE 211L

## Linear Circuits I Activity

**1 Unit:** 2 hours activity/lab (Engineering Topic)

**Course Supervisor/Main Instructor:** David Silveira/Zahrasadat Alavi and David Silveira

### Required Textbook and Other Course Materials

**Textbook** – required only for lecture portion of EECE 211 but may be helpful as a reference for EECE 211L:

*Fundamentals of Electric Circuits*, Alexander & Sadiku, McGraw Hill, any edition.

### Other equipment requirements

- Analog Devices ADALM2000 Active Learning Module (M2K)\*
- BNC kit containing Digilent BNC Breakout Board, BNC-BNC cable, BNC-grab hook adapter, two oscilloscope probes\*
- EECE parts kit\*
- Breadboard and Wire Kit\*
- Laptop with [Analog Devices-Scopy LTSpice](#) and installed.

*\*Available for purchase from IEEE Student Branch*

**Course Description:** Experiments to reinforce the principles taught in EECE 211.

**Corequisites:** EECE 211

### Learning Objectives:

Upon successful completion of this course, students will be able to:

- Translate circuit schematics into working physical prototypes. (SO 6)
- Use laboratory equipment such as voltage sources and signal generators to supply power and signals to physical circuit prototypes. (SO 6)
- Use laboratory equipment such as multimeters and oscilloscopes to measure AC and DC circuit quantities such as resistance, voltage, and current. (SO 6)
- Safely use soldering irons to solder electronic components onto printed circuit boards. (SO 6)
- Design circuits to meet constraints and performance targets by performing calculations to find necessary component values. (SO 2)
- Summarize theory, procedures, and experimental results into written reports. (SO 3, 6)

**Course Topics:**

<b>Course Topics and Activities</b>	
1	Lab #0: Safety Orientation
2	Lab #1: KCL/KVL, Resistors, M2K
3	Lab #1 continued.
4	Lab #2: Voltage and Current Division
5	Lab #3: Thévenin's Theorem
6	Lab #4: Soldering Workshop
7	Exam #1
8	Lab #5: Linear Operational Amplifiers
9	Lab #6: Module #1, Photocell Control
10	Lab #7: Module #2, RC Oscillator
11	Exam #2
12	Lab #8: Module #3. TIA/Schmitt Trigger
13	Lab #9: Module #4, Signal Control

**Grading Scheme:**

Lab Reports	40%
Lab Summaries	30%
Demonstrations/Sign-offs	30%