EEL 3112L — ADVANCED CIRCUITS WITH COMPUTERS LABORATORY

Curriculum Designation: Required for EE majors.

Course (Catalog) Description: Laboratory in support of EEL 3112.

Prerequisite: EEL3111, EEL3002L
Co-requisite: EEL3112

Course Objectives: Upon completion of this course, the student should be able to:

1. Measure direct current and voltage.
2. Compute the DC Power absorbed by an element in a DC circuit.
3. Determine the impedance of an AC circuit and check the relation between the RMS and peak value of AC current and voltage.
4. Design and bread-board basic OP-AMPS circuits.
5. Measure and interpret the transient response of a first-order circuit.
6. Measure and interpret the transient response of a second-order circuit.
7. Determine and simulate the frequency response of an RC or RLC circuit using PSPICE simulation program; analyze and interpret data.

Topics covered: Instrumentation, measuring and simulation techniques:

1. Measure the DC voltage and current.
2. Measure the DC power absorbed by an element in a DC circuit.
3. Measure the AC voltage and current.
4. Computer based PSPICE circuit simulation of AC and DC circuits to aid in electrical circuit designs.
5. Frequency response of linear circuits.
6. Analyze and interpret the responses of low pass filter circuits.
7. Bread-board basic OP-AMP based circuits, including inverter, non-inverter, comparator circuits.

Class Schedule: One 165 minute lab per week (1 credit hour).

Subject Area: Engineering

Significant Design: No

Relationship to Assessed ABET Student Outcomes: None

Last Updated By: R.J. Perry Date: April 30th, 2021