

EEL 3118L Laboratory 1

Credits: 2

Text book, title, author, and year: Course material supplied by FAU Instructor

- a. **Supplemental materials:** none.

Specific course information

- a. **Catalog description:** Introduction to basic electronic test equipment; measurement techniques, experimental analysis and design of linear and non-linear circuits.
- b. **Prerequisites:** *EEL 3111*
- c. **Required, elective, or selected elective:** required

Specific goals for the course

Specific outcomes of instruction:

- a. By the end of the course students will be able to: (i) work effectively as a team member on a project team; (ii) demonstrate knowledge of proper study skills and time management habits; (iii) demonstrate the ability to communicate effectively orally and in writing a report; (iv) demonstrate understanding of the problem solving process.

Brief list of topics to be covered:

- 1) Handle basic electronic instruments/equipment such as Power supplies, Oscilloscope's, Multi-meters, signal generators, etc.
- 2) Identify passive components (R, L, and C) and active devices like transistors, diodes, and operational amplifiers.
- 3) Perform measurements procedures to assess R, L, C values.
- 4) Perform tests to measure voltage and current using measuring instruments including Oscilloscope.
- 5) Use Oscilloscope (digital) to study various electrical waveforms
- 6) Characteristics such as amplitude, phase, and frequency.
- 7) Wire-up relevant circuits to emulate differentiation/integration.
- 8) Determine the characteristics of diodes and transistors.
- 9) Analyze the transient and steady-state behavior of RLC circuits and understand resonant circuits.
- 10) Perform basic experiments to understand operational amplifier applications.