

EENG 3104: Linear Circuits Analysis Lab

Spring 2026 Syllabus

Instructor Information:

Premananda Indic, PhD
Department of Electrical Engineering, The
University of Texas at Tyler, Office: RBN
1008,
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Office Hours:

Monday : 11:30AM to 1:00PM
Wednesday : 11:30AM to 1:00PM
Additional Hours : By appointment

Course Description:

Introduction to principles and operation of basic laboratory equipment; engineering report preparation; design and implementation of experiments based on DC and AC circuit theory, network theorems, time and frequency domain circuit analysis. One three-hour laboratory per week.

Topics Covered: Electric concepts; Ohm's law; Kirchhoff's voltage and current laws; node and loop analysis; simple operational amplifier circuits; capacitance and inductance; sinusoidal response of RC , RL , and RLC networks.

The student learning objectives are:

1. Conduct basic laboratory experiments involving electrical circuits using laboratory test equipment such as multimeters, power supplies, signal generators, and oscilloscopes.
2. Demonstrate the concept of Thevenin equivalent circuits in the laboratory.
3. Demonstrate the concept of Linear superposition in the laboratory.
4. Predict and measure the behavior of simple Operational-Amplifier Circuits.
5. Design simple Operational-Amplifier Circuits.
6. Predict and measure the transient and sinusoidal steady-state responses of RC , RL and RLC circuits.
7. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.
8. Use modern engineering tools including modeling and simulation software and virtual instruments.
9. Relate physical observations and measurements involving electrical circuits to theoretical principles.
10. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.
11. Use the concept of Thevenin and Norton equivalence to model unknown networks.

Evaluation and Grading:

The course grade will be based on the following activities:

1. Lab Reports (60%):

2. Final Exam (40%):

Students will be given an experiment and will be asked to perform the experiment.

90% and above:	A
80% and above and less than 90%:	B
70% and above and less than 80%:	C
60% and above and less than 70%:	D
Below 60%:	F

Students are encouraged to read the academic honesty policy (Student Standards of Academic Conduct).