Biomedical Electronic Measurements

BME253L (Fall 2025)

Table of contents

Module	Materials	Assessment	Lab Exercise
Resistive Circuit Analysis	-> Introduction to Circuits -> Ohm's Law, KCL & KVL, Resistive Loads, Meters -> Equivalent Resistance -> Circuit Analysis Approaches -> Source Equivalents	-> Software Installation & Tutorials -> Problem Set 01 -> Problem Set 02 -> Problem Set 03	-> Introduction -> Ohm's Law & Power
ECAD (KiCad)	-> ECAD using KiCad: Schematic Capture -> ECAD using KiCad: SPICE Modeling		-> Schematic Capture & SPICE Simulation
Midterm I (Sep 22, 2025)			
Capacitors & Inductors DC RC/RL Circuit Analysis	-> Reactive Components: Capacitors & Inductors	-> Problem Set 04	Capacitors, Inductors & Oscilloscopes
Complex Impedance, AC Signals, Phasors	-> Sinusoidal Signals -> Complex Impedance		Impedance

Module	Materials	Assessment	Lab Exercise
AC RLC Circuit Analysis Passive Filters Transfer Functions & Bode Plots (Frequency Domain) Midterm II (Oct 27, 2025)	-> Filters	-> Problem Set 05	Filters
Transient Analysis (Time Domain)	-> Transient Analysis		Transient Response
Operational Amplifiers & Active Filters	-> Operational Amplifiers (Op-Amps)		Operational Amplifiers
Diodes & Rectifiers	-> Diodes & Rectifiers		Diodes & Rectifiers
Wheatstone Bridge & Sensors Midterm III (Dec 03, 2025) Final Lab Practical (Dec 10, 2025)	-> Wheatstone Bridge & Sensors		Coming Soon