## **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)	<u> </u>		
Capacitors & Inductors DC RC/RL Circuit Analysis Complex Impedance, AC Signals, Phasors	-> Reactive Components: Capacitors & Inductors -> Sinusoidal Signals -> Complex Impedance	-> Problem Set 04	Capacitors, Inductors & Oscilloscopes Impedance

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