EGR 234: Electrical Engineering II Laboratory

Students gain hands-on experience with experimentation in passive circuit investigations, steady-state and transient analysis, electrical instruments, magnetic and logic circuit investigations, and computer modeling experiments. Co-requisite: EGR 232. Three laboratory hours per week.

Course Student Learning Outcomes

1. Describe the sinusoidal steady-state conditions through use of the concepts of phasor, impedance, admittance, and transfer function. 2. Find the amplitude and phases of sinusoidal steady-state response waveforms by algebraic techniques. 3. Analyze the flow of energy in AC circuits. 4. Define power (P), reactive power (Q), and complex power (S). 5. Define the concept of frequency response curves and use Bode plots to them. 6. Understand the concepts of resonance, complex frequency, and poles and zeros in the development of frequency response. 7. Understand and apply Fourier series in the analysis of circuits. 8. Decompose input waveform into a sum of mutually orthogonal sinusoidal waveform components. 9. Develop the limit of the Fourier series as the inverse Fourier transform and apply the direct Fourier transform of a signal in the transformation of time-domain signals to its frequency-domain representation.

Credits: 1
Program: Engineering