ACADEMIC AFFAIRS

Course Number: ENGR 420   Department: Engineering & Sci. Transfer

Course Title: Circuit Analysis II   Semester: Spring   Year: 2001

Objectives/Competencies

Course Objective	Competencies
1. Sinusoidal functions	1. Identify the amplitude value. 2. Identify the angular-frequency of sinusoidal functions. 3. Solve circuits with a sinusoidal forcing function. 4. Convert a sinusoidal function to Phasor.
2. The various way in which sinusoidal steady-state problems can be appreciated	1. Solve using Nodal analysis. 2. Solve using Mesh and Loop analysis. 3. Solve using Superposition. 4. Solve using Source Transformation. 5. Solve using Thevenin's and Norton's Theorems.
3. Steady-state power analysis	1. Explain instantaneous power. 2. Compute average power. 3. Calculate the maximum average power transfer. 4. Calculate the effective or RMS values. 5. Calculate the power factor. 6. Compute using complex power.

Course Objective	Competencies
4. Polyphase circuits	1. Explain the different three-phase connections. 2. Convert the circuit from Wye to Delta. 3. Convert the circuit from Delta to Wye. 4. Measure the power.
5. Complex-frequency analysis	1. Explain the s-domain techniques. 2. Explain the poles and zeros. 3. Plot frequency response using poles and zeros. 4. Draw the frequency response using a Bode-plot. 5. Explain resonant frequency.
6. Magnetically coupled networks	1. Explain mutual inductance. 2. Compute energy analysis 3. Draw the linear transformer equivalent. 4. Solve ideal transformer networks.
7. Two-port networks	1. Explain admittance parameters. 2. Explain impedance parameters. 3. Explain hybrid parameters. 4. Explain transmission parameters 5. Draw an equivalent circuit. 6. Compute parameter conversions. 7. Explain reciprocal networks. 8. Explain the interconnection of two ports.
8. The Laplace Transform	1. Explain the gate function. 2. Recognize periodic functions.

Course Objective	Competencies
	3. Compute the Laplace of a forcing function. 4. Compute the inverse transform. 5. Convert a circuit from a time domain to s-domain. 6. Apply Laplace to solve differential equations. 7. Apply Laplace to circuit analysis.