

Course Syllabus	EECS 3220 – Electric Circuits II
Credits & Contact Hours	3 credit hours & two 75-minute lecture contact hours per week
Instructor's Name	Dr. Roger King
Textbook	C. Alexander and M. Sadiku, "Fundamentals of Electric Circuits," 5 th ed., McGraw-Hill, 2013. Recommended supplement: J. Tront, "PSpice for Basic Microelectronics," McGraw-Hill, 2008.
Course Information	<p>Advanced topics including three-phase systems, magnetically-coupled systems, resonance and second-order systems, Laplace transform circuit analysis, Fourier series for periodic waveforms and applications to electric circuits, ideal filters, system modeling and two-port networks.</p> <p>Prerequisite: EECS 2300; Corequisite: EECS 3210 Required course for EE</p>
Specific Goals-Student Learning Objectives (SLOs)	<p>The student will be able to</p> <ol style="list-style-type: none"> 1. Write circuit equations for a coupled-inductor system. 2. Analyze circuits containing ideal transformers and autotransformers. 3. Analyze three-phase wye- and delta-connected balanced circuits. 4. Derive and Bode plot frequency domain transfer functions for SISO circuits. 5. Write behavioral descriptive equations for series- and parallel-resonant circuits in the time- and frequency domains. 6. Use Fourier series techniques to analyze circuit responses to periodic signals. 7. Derive two-port parameter descriptions for circuits.
Topics	<ol style="list-style-type: none"> 1. Three phase balanced circuits and power 2. Mutual inductance 3. Linear transformer, ideal transformer, autotransformer 4. Frequency response, transfer function, Bode plots 5. Series & parallel resonance in the frequency domain 6. Series & parallel resonance in the time domain 7. Fourier series in circuit analysis 8. Two-port parameters 9. Laplace transform circuit analysis