ECE 301
Circuits and Electro Mechanical Components
Section 35492
9:40 – 10:55 AM Tues & Thur, FH 502

ECE 301
Circuits and Electro Mechanical Components
Section 38631
2:10 – 3:25 PM Tues & Thur, FH 511

TEXT: Principals and Applications of Electrical Engineering, 4th Edition, Giorgio Rizzoni, McGraw-Hill, 2002.

INSTRUCTOR: Walter L. Green, Professor Emeritus, Electrical Engineering, Ferris Hall RM 503 Ph. 974-5438. Office hours posted on door of RM 503.

DATE	SECTION OF TEXT	MATERIAL TEXT
Aug-22-Th	**Ch. 2: FUNDAMENTALS OF ELECTRIC CIRCUITS.** pp 19-30	Definitions, sources, Kirchhoff's current law
Aug-27-T	Ch. 2: pp 31 – 45	Kirchhoff s voltage law, Ohm's law
Aug-29-Th	Ch. 2: pp 46 – 60	series resistance, voltage division, parallel resistance, current division, equivalent resistance
Sept-03-T	**Ch. 3: RESISTIVE NETWORK ANALYSIS** pp 74 - 90	node voltage method, mesh current method
Sept – 05 – Th	Ch. 3: pp 92 – 102	node and mesh analysis with controlled sources, Superposition
Sept- 10-T	Ch. 3: pp 102 – 112	Thevenin and Norton equivalent circuits
Sept- 12-Th	Ch. 3: pp 112 – 121	more on Thevenin and Norton, maximum power transfer
Sept- 17-T	**Ch. 4: AC NETWORK ANALYSIS** pp 138 – 152	energy storage, ideal capacitor, ideal inductor
Sept- 19-Th	Ch. 4: pp 152 – 163	time dependent signals, average and RMS values
Sept-24-T	Ch. 4: pp 163 – 179	phasor solution of circuits with sinusoidal excitation, impedance
Sept-26-Th	Ch 4: pp 179 – 190	AC circuit analysis
Ott-01-T	**Ch. 5: TRANSIENT ANALYSIS** pp 202 - 217	writing differential equations for RL and RC circuits, DC steady state solution, initial and final conditions: transient response of first order systems

DATE	SECTION OF TEXT	MATERIAL TEXT
Oct – 03 – Th	Ch. 5: pp 217 – 234	study of first order response for RL and RC circuits
Ott-08-T	Ch. 5: pp 235 – 248	transient response of second order systems, RLC
Oct – 10 – Th	Ch. 5: pp 248 – 259	continuation of second order systems, RLC
Oct – 15-T	**Ch. 6: FREQUENCY RESPONSE AND SYSTEM CONCEPTS** pp 270 – 285	sinusoidal frequency response, Fourier series considerations
Oct – 17-Th	Ch. 6: pp 285 – 308	Filters: low pass, high pass, bandpass
Ott-22-T	Ch6: pp 308 – 317	Bode plots
Oct – 24 – Th	Engineering Day: No Class	
Ott-29-T	Ch. 7: AC POWER Pp 328 – 342	instantaneous and average power, power factor, complex power
Ott-31 -Th	Ch. 7: pp 342 – 355	power factor, power factor correction, wattmeters
Nov-05-T	Ch. 7: pp 355 – 364	transformers, the ideal transformer
Nov- 12-T	Ch. 16: pp 788 – 811	electricity and magnetism, Faraday's Law, mutual inductance, Ampere's Law, magnetic circuits
Nov- 14-Th	Ch. 16: pp 814 – 821	magnetic material, B-H curves, transformers
Nov – 19 -T	**Ch. 17: INTRODUCTION TO ELECTRIC MACHINES** pp 852 – 864	rotating electric machines, basic operation of rotating machines
Nov-21 -Th	Ch. 17 pp 865 – 88 1	DC machines
Nov-26-T	Ch. 17 pp 887 – 906	AC machines, synchronous machines, induction motors
Nov – 28 - Th	Thanksgiving Holiday: No Class	
Dee-03-T	Discussion	Textbook

Grading: 10 – 14 quizzes with at least two of the lowest dropped (85%)
Selected homework (15%)

Alternative Periods: 9:40 – 10: 15 AM section: Tuesday December 10: 10: 15 AM – 12:15 PM, FH 503
2: 10 – 3:25 PM section: Tuesday December 10: 2:45 PM – 4:45 PM, PH 511