

## ECE 300

### Electric Circuit Analysis Section 35776

Spring Semester, 2003

Class Meetings 10:10 AM– 11:25AM, MWF, FH 502

**TEXT:** Basic Engineering Circuit Analysis, 7<sup>th</sup> Edition, J. David Irwin, John Wiley Publishing Company, 2002. ISBN 0-0471-40740-2.

**INSTRUCTOR:** Walter L. Green, Professor Emeritus, Electrical Engineering, FH 503, Ph. 974-5438.

**COURSE WEB SITE:** <http://web.utk.edu/~green/home.htm> e-mail: wlg@utk.edu

<u>DATE</u>	<u>SECTION OF TEXT</u>	<u>MATERIAL</u>
Jan - 13 - M	<b>Ch. 1: BASIC CONCEPTS</b> pp 02 – 07	System of units, charge and current, voltage
Jan - 15 - W	Ch. 1: pp 07 – 11	power, energy, circuit elements, sources
Jan - 17 - F	<b>Ch. 2: RESISTIVE CIRCUITS</b> pp 15 – 23	Ohm's Law, Kirchhoff's Law
Jan – 20 – M	<b>No Class: Martin Luther King, Jr. Day</b>	
Jan - 22 - W	Ch. 2: pp 23 – 30	Kirchhoff's Law, single loop circuits
Jan – 24 - F	Ch. 2: pp 30 – 35	single node pair, series resistors
Jan - 27 - M	Ch. 2: pp 35 – 45	parallel resistors, wye – delta transformations
Jan - 29 - W	**** <b>TEST # 1</b> ****	
Jan - 31 - F	<b>Ch. 3: NODAL AND LOOP LOOP ANALYSIS</b> pp 66 – 74	review Test # 1, nodal analysis
Feb – 03 - M	Ch. 3: pp 74 – 80	nodal analysis with dependent sources, super nodes
Feb - 05 - W	Ch. 3: pp 80 – 85	loop analysis
Feb - 07 - F	Ch. 3: pp 85 – 87	loop analysis with dependent sources,
Feb - 10 - M	Ch. 3: pp 87 – 92	operational amplifiers
Feb – 12 – W	Ch. 3: pp 92 – 98	operational amplifiers

<u>DATE</u>	<u>SECTION OF TEXT</u>	<u>MATERIAL</u>
Feb – 14 - F	Ch. 4: <b>ADDITIONAL ANALYSIS TECHNIQUES</b> pp 114 – 123	linearity, superposition, Thevenin's theorem
Feb – 17 - M	Ch. 4: pp 123 – 128	Thevenin's theorem
Feb – 19 - W	Ch. 4: pp 128 – 131	Thevenin, Norton, Maximum power transfer
Feb – 21 - F	***** <b>TEST # 2</b> *****	
Feb – 24 - M	<b>Ch. 5: CAPACITORS AND INDUCTORS</b> Pp 160 – 165	review Test # 2, capacitors
Feb – 26 - W	Ch. 5: pp 165 – 176	inductors
Feb – 28 - F	Ch. 5: pp 177 – 179	operational amplifiers with resistors and capacitors
Mar – 03 - M	<b>Ch. 6: 1<sup>st</sup> and 2<sup>nd</sup> ORDER TRANSIENT CIRCUITS</b> pp 194 – 202	first order transient circuits
Mar – 05 - W	Ch. 6: pp 202 – 210	1 <sup>st</sup> order transient circuits
Mar – 07 - F	Ch. 6: pp 210 – 215	2 <sup>nd</sup> order transient circuits
Mar – 10 - M	Ch. 6: pp 215 – 220	2 <sup>nd</sup> order transient circuits
Mar – 12 - W	Ch. 6: pp 220 – 227	2 <sup>nd</sup> order transient circuits
Mar – 14 - F	***** <b>TEST # 3</b> *****	
Mar - 17 - 23	***** <b>SPRING BREAK NO CLASSES</b> *****	*****
Mar – 24 - M	<b>Ch. 7: A. C. STEADY STATE ANALYSIS</b> pp 259 – 268	review Test # 3, sinusoids, sinusoidal and complex forcing functions
Mar – 26 - W	Ch. 7: pp 268 – 279	phasor diagrams, AC circuit analysis
Mar - 28 - F	Ch. 7: pp 279 – 292	AC circuit analysis

<u>DATE</u>	<u>SECTION OF TEXT</u>	<u>MATERIAL</u>
Mar – 31 - M	<b>Ch. 8: MAGNETICALLY COUPLED CIRCUITS</b> pp 318 – 323	mutual impedance linear transformers
Apr – 02 - W	Ch. 8: pp 323 – 328	energy in transformers, ideal Transformers
Apr – 04 - F	Ch. 8: pp 328 – 333	ideal transformers
Apr – 07 – M	***** <b>TEST # 4</b> *****	
Apr – 09 - W	<b>Ch. 9: STEADY-STATE POWER ANALYSIS</b> pp 348 – 352	review Test # 4, instantaneous power, average power
Apr - 11 - F	Ch. 9: pp 352 – 362	maximum average power transfer, power factor, complex power
Apr - 14 - M	Ch. 9: 362 – 368	power factor correction
Apr - 16 - W	<b>Ch. 11: VARIABLE FREQUENCY NETWORKS</b> pp 416 - 426	frequency response
Apr - 18 - F	**** <b>NO CLASS</b> ****	
Apr - 21 - M	Ch. 11: pp 439 – 458	resonant circuits
Apr – 23 – W	Ch. 11: pp 461 – 470	introduction to basic filters
Apr - 25 - F	***** <b>TEST # 5</b> *****	
Apr - 28 - M	<b>Ch. 15: TWO – PORT NETWORKS</b> pp 610 - 614	review Test # 5, admittance and impedance
Apr - 30 - W	Ch. 15: pp 614 – 617	hybrid and transmission parameters

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**Final Exam:** The final exam will be Wednesday, May 7, 5:00 PM – 7:00 PM, FH 502

**GRADING:** Your course grade will be determined using the following distribution. Grades are not curved.

A: 90 - 100

B+: 87 - 89

B: 80 - 86

C+: 77 - 79

C: 70 - 76

D: 60 – 69

F: below 60

**COURSE AVERAGE:**

You will be given 5 regular tests. The lowest test will be dropped. If you must miss class during a test, that test will count as your lowest test.

Test # 1 ..... 12.5 %

Test # 2 ..... 12.5 %

Test # 3 ..... 12.5 %

Test # 4 ..... 12.5 %

Laboratory ..... 15 %

Homework ..... 15 %

Final Exam, Comprehensive ..... 20 %

All exams will be graded by Professor Green. All homework and lab reports will be graded by a graduate assistant.

**Office Hours:**

Office hours are MWF: 2:30 PM – 4:30 PM. Other hours can be arranged by request. Ph. 975-5438, e-mail wlg@utk.edu