UNIVERSITY OF UTAH
Department of Electrical and Computer Engineering
ECE 1270 - Introduction to Electrical and Computer Engineering

Instructor: Dr. Angela Rasmussen
Office: MEB 3254 Office hours: Wed. 10:35-11:35am, by appt.
Phone: 971-1096 (cell phone)
Email: ece1270@comcast.net

Class Website: http://www.ece.utah.edu/~ece1270

Prerequisite: MATH 1210 or 1270
Co-requisite: ECE 1020, MATH 1220 or 1280, and PHYCS 2210

Required Text: *Electric Circuits, 8th Edition*
James W. Nilsson and Susan A. Riedel
Prentice Hall: Upper Saddle River, NJ

Required Packets: ECE 1270 Study Guide
(or available on web) Carl H. Durney and Neil E. Cotter
Available from Campus Copy Center in Union Building

ECE 1270 Conceptual Tools
Neil E. Cotter et al.
Available at Copy Center

Homework: Due **before** class Wednesday's or on day indicated in syllabus.
No late HW accepted.
Turn in to locker on 3rd floor of MEB near southeast stairway.

Cheating: Any form of cheating will result in an "E" grade. Students are encouraged to discuss assignments, but each student must do all their own work on assignments.

Equal Access: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, 162 Olpin Union Building, 518-5020 (V/TDD) to make arrangements for accommodations.

All written information in this course can be made available in alternative format with prior notification.

Any questions of concerns about the above information may be directed to:

Olga Nadeau	Julene Persinger
Director, CDS	ADA Coord/Assoc Director, OEO/ER
162 Olpin Union Building	135 Park Building
581-5020	581-8365

ECE 1270 **Tentative Schedule** Spring 2008

Week	Date	Topic
1	Jan. 7	Course Procedures, Intro, Basic DC Circuits: Algebra, Passive Sign Convention, Units, Voltage v, Current i, Power p, Sources, Kirchoff's Laws, Ohm's Law
	Jan. 9	Passive Sign Convention, Sources-voltage, current, independent and dependent, Kirchoff's Laws, Ohm's Law
	Jan. 11	Kirchoff's Laws, Ohm's Law (cont)
2	Jan. 14	Circuits: Resistor Networks (parallel/series), voltage and current dividers, power dissipation, Op Amps
HW1	Jan. 16	**HW1 due** Op Amps: Ideal Amplifiers
	Jan. 18	Op Amps: Ideal Amplifiers
3	Jan. 21	Martin Luther King Day
HW2	Jan. 23	**HW2 due** Review
	Jan. 25	**Midterm #1**
4	Jan 28	Node Voltage Method
	Jan 30	Node Voltage, Mesh Current Method
	Feb. 1	Mesh Current, Thevenin Equivalent
5	Feb. 4	Thevenin Equivalent
HW3	Feb. 6	**HW 3 due** Review
HW4	Feb. 8	**HW 4 due** Review
6	Feb. 11	**Midterm #2**
	Feb. 13	RC/RL Circuits: C(Capacitor Equations), L (Inductor Equations), General Solution
	Feb. 15	RC/RL Circuits: C(Capacitor Equations), L (Inductor Equations), General Solution *(Cont.)*
7	Feb. 18	President's Day
	Feb. 20	RC/RL Examples
HW5	Feb. 22	**HW5 due** Examples
8	Feb. 25	Maximum Power Transfer, Superposition
HW6	Feb. 27	**HW6 due** Examples
	Feb. 29	Review
9	March 3	Review
	March 5	**Midterm #3**
	March 7	Complex Analysis – Basic Math (properties of complex number, rationalization, add, subtract)
10	March 10	Complex Analysis – Basic Math (properties of complex number, rationalization, add, subtract) *(Cont.)*
	March 12	Complex Analysis - Impedance, Phasors, Ohms Law Impedance Circuits – Kirchoff's Laws, Node-Voltage Method, Thevenin Equivalent
	March 14	Impedance Circuits – Superposition
11	March 17-22	Spring Break
12	March 24	Examples
HW7	March 26	**HW7 due** Examples
	March 28	Examples
13	March 31	Examples
HW8	April 2	**HW8 due** Examples
	April 4	Examples
14	April 7	Review
	April 9	**Midterm #4**
	April 11	Review
15	April 14	Review
HW9	April 16	**HW9 due**
	April 18	Review
16	April 21	**HW10 due**
	April 23	Review
Wed	**April 30**	**Final Exam, 8-10am (Comprehensive)**

Text Reading and Example Problems with Answers

Unit 1:

Ch. 1 Units, Voltage, Current, Power, Passive Sign Convention (*Summary pg. 17)*
Ch. 2 Analysis of circuits - Dependent sources, power, Kirchhoff's Law's, Ohm's Law (*Summary pg. 47*)
Assessments: (pg. 28, 32, 42, 46) 2.1-2.5, 2.8-2.10
Back of Chapter Problems: (pg. 48-53) Pr. 2.2-2.3, 2.6, 2.8, 2.14, 2.17-2.19, 2.24, 2.28
Ch. 3 (3.1-3.4) Resistors in parallel and series, Voltage Divider, Current Divider
Assessments: (pg. 62, 65, 67) 3.1-3.4
Back of Chapter Problems: (pg. 80-84) Pr. 3.1, 3.2, 3.5, 3.6, 3.13, 3.15, 3.21-3.23
Ch. 5 (5.1-5.2) Op Amps
Assessments: (pg. 161) 5.1
Back of Chapter Problems: (pg. 176) Pr. 5.1-5.3

Examples: 2.1, 2.2, 2.6-2.8, 2.10-2.11, 3.1-3.4

Unit 2:

Ch. 4 (4.1-4.11) Definitions, Node Voltage, Supernode, Mesh current, Supermesh, Thevenin Equivalent
Assessments: (pg. 99-101, 104. 107, 109, 112, 116, 123, 125) 4.1-4.14, 4.16, 4.18-4.20
Back of Chapter Problems: (pg. 139-149) Pr. 4.6, 4.9, 4.10, 4.12, 4.13, 4.19-4.21, 4.26, 4.27, 4.31, 4.32, 4.37, 4.38, 4.41, 4.42, 4.47, 4.50, 4.54-4.56, 4.63, 4.67a, 4.71, 4.77

Examples: 4.1-4.3, 4.4-4.7, 4.10, 4.11

Unit 3:

Ch. 6 (6.1.6.3) – Inductors, Capacitors (*Summary pg. 217*)
Ch. 7 (7.1-7.4) - 1st order response, RL switch, RC switch, General Solution
Assessments: (pg. 195, 199, 203, 236, 240, 245, 248) 6.1-6.5, 7.1(a-d), 7.2a, 7.3(a-d), 7.4-7.6
Back of Chapter Problems: (pg. 218, 220-222, 265-273) Pr. 6.1, 6.3, 6.14, 6.15, 6.21, 6.22, 6.26, 6.27, 7.1(a-c), 7.2, 7.3, 7.21, 7.24, 7.33-7.35, 7.50, 7.51
Sections 4.12, 4.13 Maximum Power Transfer, Superposition
Assessments: (pg. 129) 4.12-4.22;
Back of Chapter Problems: (pg. 149) Pr. 4.79, 4.80

Examples: 7.1-7.3, 7.4-7.6, 7.7-7.9, 4.12, 4.13

Unit 4:

Ch. 9 Complex Numbers, Sinusoidal Signals, Phasors, Frequency Domain Analysis
Assessments: (pg. 342, 346, 348, 349, 352, 358, 360, 361) 9.1-9.8, 9.11-9.13
Back of Chapter Problems: (pg. 377-384) Pr. 9.12, 9.13, 9.15-9.16, 9.21, 9.26-9.28, 9.51, 9.56, 9.58, 9.61

Examples: 9.1-9.3, 9.5b, 9.6, 9.7, 9.10-9.12, 9.15