Outline ENSC 220: Electric Circuits I: 2005

Professor:
Glenn Chapman, Rm ASB 8831, Phone: 291-3814
General hours: Monday - Friday: 9:30 am - 6:45 pm
Email: glennc@cs.sfu.ca
WWW: http://www.ensc.sfu.ca/ensc/people/faculty/chapman

TA's
Michelle La Haye: mlahaye@sfu.ca
Cory Jung (tutorials): cjunga@sfu.ca
Lydia Tse, ltse@sfu.ca
Paulman Chan (marking) pkchan@sfu.ca

Text Book
"Electric Circuits, 7th Edition" by James W. Nilsson, & Susan A. Riedel, Pearson/Prentic Hall 2005.
Chapters 1 - 10, 14

Recommended Reference text:
Schaum's Theory and Problems of Basic Circuit Analysis 2/ed, by John O'Malley, McGraw-Hill, 1992.

Other References:
Schaum's Theory and Problems of Electric Circuit 4/ed, by Mahmood Nahvi, Joseph A. Edminister, McGraw-Hill, 2003.
Schaum's 3000 Solved Problems in Circuit, 3rd by Syed A. Nasar, McGraw-Hill

Class Times:
Tuesday 3:30-4:20, Thursday 2:30-4:20 AQ3181
Two noncompulsory tutorials: Tuesday 2:30-3:20 C9002
Thursday 1:30-2:20 pm, K9500

Class Web Site and Notes:
WWW: http://www.ensc.sfu.ca/ensc/people/Faculty/chapman/e220out.html
Notes available as pdf files downloadable from the web site before the classes

Assignments and Tests
7 Assignment about every other week, given on Friday, due the next Friday at 4 pm
1 hour. Mid term test on Thursday Oct. 14
2 Small lab tests
Assignments written on 8.5x11 sheet paper, with your name and student number clearly on the top. All questions must be clearly marked. You must show the intermediate work – just an answer gets you zero. **Note: problems in this new text are different from those last year.** Assignments should be handed in to the secretary at the ENSC general office. A box will be provided for you to drop-off your assignment. Although we encourage you to work together on your understanding of the material, direct copying of another student's work is not allowed. You are permitted, however, to exchange computer programs written as part of homework assignments - provided, of course, that this is acknowledged.

Laboratory
5 labs, 3 with full reports, and 2 with one sheet reports

Marks
Best of following:
5% Assignments, 15% Labs, 10% Lab Test, 25% Mid Term, 45% Final exam
10% Assignments, 15% Labs, 10% Lab Test, 65% Final exam

Important Notice
As part of the BC"Freedom of Information Act", the University must now inform you whenever information iscollected about you (and must tell you how the information will be used). We are thus giving you "notice" that some of your work in ENSC 220 may be put into the course files at the end of the semester.

Course Lecture Outline (Dates are approximate)

Week	Topics	Text	Labs/Tests
1	Introduction, Units, V & I sources, Ohm's laws Kirchoff's Laws	1 & 2	
2	Resistive Circuits: voltage dividers, current dividers, meters	3	
3	Basic Circuit Analysis: Mesh and Node Analysis Need Math 232	4.1-4.8	Start Lab 1
4	Network Theorems: Transformations, Thevenin & Norton equivalents, superposition principal	4.9-4.13	
5	Operational Amplifiers: Ideal, Inverting, Summing	5	Start Lab 2
6	Inductors and Capacitors:	6	**Mid Term Oct. 13**
7	Inductors and Capacitors: Series/Parallel combinations First order RL & RC systems Note: need Math 310 at this point	6,7	
8	Natural and Stepped RLC response	8	Start Lab 3
9	Sinusoidal Steady State Analysis: Complex Numbers Phasors, Phasor diagrams, AC Circuit analysis with Phasors	9	
10	Sinusoidal Power Calculations: AC RMS, real reactive power	10	Start Lab 4
11	AC complex power calculations	10	
12	Frequency Selective Circuits: Series & Parallel Resonance, complete circuit response	14	Start Lab 5
13	Review		
	Final Exam		**Dec. 15, noon**

Lab Schedule

Lab	Topic	Due	Report
1	Verification of KVL & KCL	Oct. 10	Table report
2	Simple Op-Amps	Oct. 24	Full Report
	Lab Test 1	Oct. 25/27	In tutorial period
3	RL & RC circuits	Nov. 7	Full report
4	RLC circuits	Nov. 21	Table report
	Lab test 2	Nov. 22/24	
5	Radio Receiver	Dec. 2	Full report