SOUTHERN UTAH UNIVERSITY

DEPARTMENT OF INTEGRATED ENGINEERING

AND TECHNOLOGY

SYLLABUS

EET 1710 DC CIRCUITS

FALL 2004

D.A. WARD

COURSE DESCRIPTION:

An in-depth study of direct current for the electronic engineering technology student. Subject matter includes ohm's law, watt's law, network analysis, magnetism, inductance, capacitance, and electrical measurement. Lab experiences will give each student the opportunity to apply classroom instruction using state-of-the-art test equipment.

THE INSTRUCTOR'S PHILOSOPHY:

I am more than happy to help students at any time in any way that I can. However, I believe that there is a responsibility on the part of the students to get the most that they can from any course. I would recommend that each student do the following in order to gain the most from this course: read each assignment before coming to class, do all homework assignments, never miss a class or a lab, and take detailed class notes. I hope that students will rate this course by comparing what they know now with what they have learned at the end of the course. If students will apply themselves I think they will be very pleased with what they will gain from taking EET 1710. Please contact me if you are having any difficulties as soon as possible so that I can help you before a problem gets too big.

OFFICE HOURS:

My office is located in the Technology Building in room 131, my phone number is 586-7981, and my email address is ward@suu.edu. I am usually in my office from 9:00 am to 10:00 am daily. However, there may be times when I am called to a meeting or am out of my office for other reasons. If you need to meet with me at a particular time please make an appointment and see that I write it down.

REQUIRED MATERIALS:

Textbook: Introductory Circuit Analysis 10th edition, by Robert L. Boylestad.

Lab manual: Experiments in Circuit Analysis to accompany Introductory Circuit Analysis 10th edition, by Boylestad and Kousourou.

A scientific calculator.

COURSE GRADING:

Exams and unannounced quizzes	50%	A = 90 to 100%
Homework	10%	B = 80 to 89%
Lab assignments	35%	C = 70 to 79%
Attendance	5%	D = 60 to 69%
		F = below 60%

If a student does not contact the instructor prior to missing a quiz or exam that quiz or exam cannot be made up. Every effort should be made to contact the instructor before any absence, especially when that absence occurs on a test day.

HOMEWORK:

All late assignments will be penalized 20% per day. All written homework from the textbook must include all computations and work needed to arrive at the answer, the answer should be boxed in or highlighted. If the work for answers is not shown the homework will not be accepted. All homework will be due at the beginning of the class period, class and lab time cannot be used to do homework assignments. The answers to most of the odd numbered problems are located in the back of the text, these problems will be given half the credit of the even numbered answers if the work is included with the answer.

LAB ASSIGNMENTS:

Due dates of the lab assignments will be given as the class progresses. Lab assignments will be graded on the following: correctness and completeness of your answers, the write-up of your conclusions, spelling, neatness and grammar. Please do not tear the pages out of the lab manual, leave them in the manual.

READING AND LAB ASSIGNMENTS:

As you read through the tentative class and lab schedule you will see that chapters 1 through 12 from the text will be covered. The following experiments from the lab manual will also be completed: experiments 1 through 7, 9 through 11, and 14 and 15.

STUDENT DISABILITY NOTICE:

Students with medical, psychological, learning or other disabilities desiring academic adjustments, accommodations, or auxiliary aids, will need to contact the Southern Utah University Coordinator of Services for Students with Disabilities (SSD), in Room 206 F, Sharwan Smith Center or phone (435) 865-8022. SSD determines eligibility for and authorizes the provision services.

ACADEMIC INTEGRITY POLICY:

Scholastic dishonesty will not be tolerated and will be prosecuted to the fullest extent. Students are expected to have read and understood the current issue of the student handbook (published by Student Services) regarding student responsibilities and rights, the intellectual property policy, and for information about procedures and about what constitutes acceptable on-campus behavior.

MEETING TIMES:

This class meets on Mondays, Tuesdays, Wednesdays and Thursdays from 1:00 pm to 1:50 pm in rooms 119 and 112 of the Technology Building. Regular attendance of the lectures and labs is required, see student grading.

FEES:

There is a $25.00 course fee to cover the costs of damaged components and expendable items such as meter batteries, breadboards, etc.

DISCLAIMER:

Information contained in this syllabus, other than the grading, late assignments, make-up work, and attendance policies may be subject to change with advance notice, as deemed appropriate by the instructor.

TENTATIVE CLASS AND LAB SCHEDULE

DATE TOPIC AND PAGES TO BE READ FROM TEXT PRIOR TO CLASS

WEEK 1

M Aug 30 Introduction to the course: syllabus, homework, required materials, grading, etc

T 31 Ch 1, Scientific and Engineering notation, metric prefixes, using your calculator to enter and read these notations

W Sep 1 Ch 2 pp 31-38, current and voltage, atomic structure, the coulomb, current, and voltage

.

R 2 Ch 2 pp 39-55 fixed DC supplies, batteries, generators, conductors, insulators, semiconductors, ammeters and voltmeters

WEEK 2

M Sep 6 Labor Day Recess, no classes held today

T 7 LAB: Experiment #2 Resistors and the color code

W 8 Ch 3 pp 59-74 resistance, factors that affect resistance, and the American Wire Gauge (AWG)

R 9 LAB: Experiment #3 Ohm's law

WEEK 3

M Sep 13 Ch 3 pp 74-91 resistance

T 14 LAB: Experiment #3 Ohm’s law

W 15 Ch 4 pp 97-125 Ohm's law, power, and energy

R 16 LAB: Experiment #4 Series resistance

WEEK 4

M Sep 20	Ch 5 pp 129-159 Series circuits
T 21	LAB: Experiment #4 Series resistance
W 22	Series circuit quiz
R 23	LAB: Experiment #5 Series DC circuits

WEEK 5

M Sep 27	Ch 6 pp 169-203 Parallel circuits
T 28	LAB: Experiment #5 Series DC circuits
W 29	Ch 6 pp 169-203 Parallel circuits
R 30	Lab: Experiment #6 Parallel resistance

WEEK 6

M Oct 4	Ch 6 pp 169-203 Parallel circuits, review for parallel quiz
T 5	Lab: Experiment #6 Parallel resistance
W 6	Parallel quiz, introduction to Series-Parallel circuits
R 7	Lab: Experiment #7 Parallel DC circuits

WEEK 7

M Oct 11	Ch 7 pp 213-244 Series-Parallel networks
T 12	Lab: Experiment #7 Parallel DC circuits
W 13	Ch 7 pp 213-244 Series-Parallel circuits
R 14	Lab: Experiment #9 Series-Parallel DC circuits

WEEK 8

M Oct 18	Ch 7 pp 213-244 Series-Parallel DC circuits
T 19	Lab: Experiment #9 Series-Parallel DC circuits
W 20	Quiz on Series-parallel circuits
R 21	LAB: Experiment #9 Series-Parallel DC circuits First term ends today

WEEK 9

M Oct 25	Harvest recess, no classes held today
T 26	Lab: Experiment #9 Series-Parallel DC circuits
W 27	Ch 8 pp 255-261 Methods of analysis and selected topics (DC), current and voltage sources
R 28	LAB: Experiment #10 Superposition theorem (DC)

WEEK 10

M Nov 1	Ch 9 pp 321-328 the superposition theorem
T 2	LAB: Experiment #10 Superposition theorem (DC)
W 3	Review for superposition quiz
R 4	Lab: Experiment #10 Superposition theorem (DC)

WEEK 11

M Nov 8	Superposition quiz.
T 9	LAB: Experiment # 10 Superposition theorem (DC)
W 10	Ch 9 pp 328-338 Thevenin's theorem
R 11	LAB: Experiment #11 Thevenin's Theorem and Maximum Power Transfer

WEEK 12

M Nov 15 Ch 9 pp 338-351 Norton's theorem

T 16 Lab: Experiment #11 Thevenin's Theorem and Maximum Power Transfer

W 17 Review for quiz on Thevenin's and Norton's theorems

R18 Lab: Experiment #12 Norton's Theorem and Source Conversions

WEEK 13

M Nov 22 Quiz on Thevenin's and Norton's Theorems.

T 23 Lab: Experiment #12 Norton's Theorem and Source Conversions

Thanksgiving Recess November 24, 25, and 26, no classes held.

WEEK 14

M Nov 29 Ch 10 pp 375-425 Capacitors

T 30 LAB: Experiment #14 capacitors

W Dec 1 Ch 10 pp 375-425 Capacitors

R 2 Lab: Experiment #14 Capacitors

WEEK 15

M Dec 6 Ch 11 Magnetic circuits

T 7 LAB: Experiment #15 R-L Circuits

W 8 Ch 12 pp 473-511 Inductors

R 9 Last day of class, review for the final exam

FINAL EXAM SCHEDULE:

Thursday December 16, 2004 1:00 pm to 2:50 pm

HOMEWORK ASSIGNMENTS

All work must be shown on all homework assignments to receive credit. The answers to the odd numbered problems are in the back of the text and will be given half of the credit of the even numbered problems.

1. Ch 1: 12, 13, 24, and 25
2. Ch 2: 1, 8-15
3. Ch 2: 25, 26, 36-38, 40, 42
4. Ch 3: 1-6, 14
5. Ch 3: 15, 16, 23-25, 46, 50
6. Ch 4: 1-12, 25-27
7. Ch 5: 1-4
8. Ch 5: 5, 6, 10, 11
9. Ch 6: 1-4
10. Ch 6: 5, 8-10
11. Ch 7: 3, 4
12. Ch 7: 5, 6
13. Ch 7: 10 (do on paper and turn in a PSPICE and EBW* printout)
14. Ch 7: 11
    a). redraw the circuit and number all nodes for PSPICE.
    b). find the total resistance, total current, and total power.
    c). find all voltage drops and currents.
    d). first work the problem on paper and show all calculations in a neat orderly manner before using PSPICE and EBW.
15. Ch 7: 18 (provide the same information as assignment #14 above)
16. Ch 8: 5, 6
17. Ch 8: 7
18. Ch 9: 1
19. Ch 9: 3A
20. Ch 9: 5, 6
21. Ch 9: 13
22. Ch 9: 2
23. Ch 9: 7, 14
24. Ch 10: 44
25. Ch 10: 3, 4
26. Ch 10: 17, 18
27. Ch 12: 31
28. Ch 12: 1, 2
29. Ch 12: 4, 5
30. Ch 12: 12

*PSPICE is the Microsim 7.1 Evaluation program. EBW is the Electronics Work Bench software, both programs are installed on the electronics lab computers.