EE 2303/602 - Electronics I (Summer 2001)

(Download syllabus.pdf)

Instructor: Professor Ronald L. Carter, ronc@uta.edu, http://www.uta.edu/ronc, 532 Nedderman Hall, (office hours: 11 AM to 12 noon, Tues and Thur; other times by appointment), 817/272-3466, fax 817/272-2253

Course Learning Goals and Objectives: To learn to use and apply the fundamental concepts of nonlinear electronic circuits. Nonlinear, piecewise linear, and large and small signal analysis and design concepts will be emphasized. The concepts learned will be applied to the p-n diode, bipolar junction and field effect transistors. DC biasing schemes for these devices will be developed.

Class Meetings: Monday and Wednesday, 10:30 AM to 12:20 PM, 202 Nedderman Hall

Teaching Assistant: Liang Tang, lxt6368@omega.uta.edu, 254 Nedderman Hall, (office hours: 12:30 PM to 1:30 PM, Mon and Wed; other times by appointment), 817/272-2351.

Attendance Policy: Attendance at every class session for the entire 100-minute period is strongly advised. A test or quiz will be given every week as shown on the schedule.

Text: *Electronics, 2nd edition*, by Allan R. Hambley, Prentice Hall, Upper Saddle River, NJ, © 2000.

- Text Web site is http://cw.prenhall.com/bookbind/pubbooks/hambley/.
- Problem solutions are at http://cw.prenhall.com/bookbind/pubbooks/hambley/chapter0/custom5/.

Reference Texts: (Books on reserve in the Science and Engineering Library are marked R.)

- R *Electronic Devices and Circuit Theory, 6th Ed.*, by Boylestad and Nashelsky, ©1996, Prentice-Hall.
- R *Analog Electronics: an Integrated PSpice Approach*, by T. E. Price ©1997, Prentice-Hall.
- R *Principles of Electronic Circuits, 2nd Edition*, by Stanley Burns and Paul Bond, PWS Publishing Company, Boston, MA, ©1997.

Spice References: (Books on reserve in the Science and Engineering Library are marked R.)

- R *MicroSim PSpice for Windows, 2nd ed*, by Goody, Prentice-Hall, Upper Saddle River, N.J., ©1998.
- R *Computer-Aided Circuit Analysis Using PSpice by* Walter Banzhaf, Regents/Prentice Hall, Englewood Cliffs, NJ, ©1992
- R SPICE: A Guide to Circuit Simulation and Analysis Using PSpice, 3rd ed., by Paul W. Tuinenga, Prentice Hall, Englewood Cliffs, NJ, ©1995.
- *Schematic Capture with MicroSim Pspice: for Windows 3.1, 4th Ed.*, by Herniter, ©2000, Prentice-Hall
- PSpice™ is available by download from http://www.orcad.com/Product/Analog/Analog.asp or from the UTA HKN chapter at http://hkn.uta.edu.
- Prof. Dillon's excellent tutorial for PSpice™ is at http://rock.uta.edu/dillon/pspice/

Problems: The problem assignments shown in the syllabus have been selected for your study, but will not be collected or graded. The problems selected are designated in the assignments as Prob m,n,o ... etc. The study of the problems assigned will be helpful in preparing for the quizzes and tests. For more examples, see:

- *Schaum's Outline of Theory and Problems of Electronic Devices and Circuits*, by Jimmie J. Cathey, McGraw-Hill, ©1988, ISBN: 0070102740.

Grade Calculation: Grade = $0.30*\{\text{Sum}(Q_i) + (Q_{max} - Q_{min})/2\}/7 + 0.30*T_{avg} + 0.20*P_{roject} + 0.20* F_{inal}$,
(25% to 30% of the final will be review from the first two tests.)

Grading Scale:

- A = 90 and above
- B = 75 to 89
- C = 60 to 74
- D = 50 to 59
- F = 49 and below

Project Assignment: See http://www.uta.edu/ronc/2303su01/project/. Download project.doc

Student Evaluation of Teaching: Students will complete evaluation forms at the end of the semester.

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Lecture, Assignment, Quiz and Test Schedule

(Lecture notes, when published, are at http://www.uta.edu/ronc/2303su01/lectures)

CL	DATE	DAY	Q/T	STUDY ASSIGNMENTS
1	30-May-01	W		Ch 1.3 to 1.5, 1.8 to 1.10, review KCL, KVL, Thevenin, Norton, 2-ports, etc.
2	04-Jun-01	M	Q1	Ch 2.1 to 2.8, 2.10 to 2.11 (Ch. 1 and 2 problem assignments below)
3	06-Jun-01	W		Ch 3.1 to 3.12 (Prob. 4,5,10,11,15,17,22,24,33,36,37,42,43,45,47,51,54,56,58,77,81,87,89)
4	11-Jun-01	M	Q2	**Census Date 6/4**
5	13-Jun-01	W		Project Assigned
6	18-Jun-01	M	Q3	
7	20-Jun-01	W		
8	25-Jun-01	M	T1	Ch 4(Prob. 7,8,10,11,20,21,25,28,35,37,41,42,45,49,53,56,64,65)
9	27-Jun-01	W		
10	02-Jul-01	M	Q4	Ch 7.2 (Prob. 8,10,14,21,25,27)
	04-Jul-01	W		**Independence Day Holiday**
11	09-Jul-01	M		
12	11-Jul-01	W	Q5	
13	16-Jul-01	M		
14	18-Jul-01	W	T2	Ch 5.1-7(Prob. 3,4,7,10,16,17,19,22,23,26,29,32,33,35,39,40,43,47,56,57)
15	23-Jul-01	M		Ch 6.3 to 6.6 (Prob. 30,36,39,40,48,49)
16	25-Jul-01	W	Q6	**Last Drop date 7/25**
17	30-Jul-01	M		Ch 7.3 (Prob. 31,32,35) - Project due
18	01-Aug-01	W	Q7	
19	06-Aug-01	M		
20	07-Aug-01	Tu	Final	Final Exam 10:30 AM to 12:30 PM, Grades due 8/17, Fall Sem. begins 8/27

Ch 1 Problems: 15, 16, 18, 21, 37, 39, 43, 45, 56.

Ch 2 Problems: 2, 10, 11, 12, 15, 18, 24, 27, 35, 37, 42, 46, 51, 52, 60, 75, 76.

Notes:

1. This syllabus may be changed by the instructor as needed for good adademic practice.
2. Quizzes and tests are closed book, no notes, calculator allowed, straight edge recommended.
3. There will be no make-up, or early exams given. Attendance is required for all tests.
4. Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112—The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act – (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide “reasonable accommodation” to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels. In conformance with the Americans with disabilities Act, I state that, "If you require an accommodation based on disability, I would like to meet with you in the privacy of my office during the first week of the semester to make sure you are properly accommodated. Contact Dr. Cheryl Cardell (272-3670) or Mr. Jim Hayes (272-3364) for more information."
5. It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. “Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.” (Regents’ Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). ANY CHEATING WILL RESULT IN SEVERE PENALTIES. All work submitted must be original. If derived from another source, a full bibliographical citation must be given.
6. If identical papers are submitted by different students, the grade earned will be divided among all identical papers.
7. A paper submitted for regrading will be compared to a copy of the original paper. If changed, points will be deducted.