

EE 2303-001 - Electronics I (Fall 2011) Syllabus

Class Meetings: Tuesday and Thursday, 11:00 AM to 12:20 PM, 106 Nedderman Hall

Instructor: Professor Weidong Zhou, wzhou@uta.edu, 202A NanoFAB, (office hours: 9:30 AM to 10:30 AM, Tues and Thur; other times by appointment), 817/272-1227, fax 817/272-7458

Teaching Assistant: TBA

Course Learning Goals and Objectives: To acquire knowledge, skills, and insight in design and analysis of functional circuits and modules employing Op Amps and nonlinear circuit elements such as diodes and transistors. To learn and to utilize the fundamental concepts of nonlinear electronic circuits in such design and analysis. Nonlinear, piecewise linear, and large and small DC and ac signal analysis and design concepts will be emphasized. The concepts learned will be applied to circuits employing the p-n diode, bipolar junction and field effect transistors, and Op Amps. DC biasing schemes for these devices will be developed.

Attendance Policy: Attendance at every class session for the entire 80-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.
- ^R *Electronic Circuit Analysis and Design*, by Donald A. Neaman, IRWIN ©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
- PSpiceTM 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 PSpiceTM is at <http://rock.uta.edu/dillon/pspice/>
- Cutberth Nyack Applets and Tutorials: Home: <http://cnyack.homestead.com/> <http://circuitscan.homestead.com/>

Grading:

Quiz: 20% Project: 15% Exam I: 15% Exam II: 25% Final: 25%

Grade ≥ 89	$75 \leq \text{grade} < 89$	$60 \leq \text{grade} < 75$	$50 \leq \text{grade} < 60$	grade < 50
A	B	C	D	F

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

Notes:

1. This syllabus may be changed by the instructor as needed for good academic 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. A paper submitted for re-grading will be compared to a copy of the original paper. If changed, points will be deducted.

Drop Policy:

Please refer to the University policy for dropping courses.

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 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of 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 accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Student Support Services Available:

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

Final Review Week:

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. Classes are held as scheduled during this week and lectures and presentations may be given.

E-Culture Policy:

The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email. All students are assigned an email account and information about activating and using it is

available at www.uta.edu/email. New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

Ethics:

Student Responsibility

Undergraduate and graduate students assume full responsibility for knowledge of all University rules, regulations and deadlines published in the Undergraduate and Graduate Catalogs and of all departmental and program requirements concerning their degree programs.

Academic Dishonesty

All students are expected to pursue their academic careers with honesty and integrity. Academic dishonesty includes, but is not limited to, cheating on a test or other coursework, plagiarism (offering the work of another as one's own) and unauthorized collaboration with another person. Students found responsible for dishonesty in their academic pursuits are subject to penalties that may range from disciplinary probation, suspension or expulsion from the University. In accordance with the Rules and Regulations of the Board of Regents of The University of Texas System (Part One, Chapter VI), institutional procedures regarding allegations of academic dishonesty are outlined in Part Two, Chapter 2, of the U.T. Arlington Handbook of Operating Procedures. This information may be obtained by accessing the Dean of Students' Web site at www.uta.edu/studentaffairs/dos or the Student Judicial Affairs' Web site at www.uta.edu/studentaffairs/judicialaffairs. Copies of each regulation can be obtained in the Dean of Students' Office on the lower level of the University Center.

Definitions (UTA Handbook of Operating Procedures)

F. scholastic dishonesty, including, but not limited to, cheating on an examination or an assignment, plagiarism, and collusion;

1. *cheating on an examination or an assignment* includes:

- a. copying the work of another, engaging in written, oral or any other means of communication with another, or giving aid to or seeking aid from another when not permitted by the instructor;
- b. using material during an examination or when completing an assignment that is not authorized by the person giving the examination or making the work assignment;
- c. taking or attempting to take an examination for another, or allowing another to take or attempt to take an examination for a student;
- d. using, obtaining, or attempting to obtain by any means, the whole or any part of an unadministered examination or work assignment;
- e. any act designed to give unfair advantage to a student or the attempt to commit such an act;

2. *plagiarism* means the unacknowledged incorporation of the work of another in work that is offered for credit;

3. *collusion* means the unauthorized collaboration with another in preparing work that is offered for credit.

The following is an excerpt from the College of Engineering's statement on Ethics, Professionalism, and Conduct of Engineering Students. Read the statement carefully, sign it, and return it to your instructor. You may make a copy for your records. Additional copies of this statement can be obtained from your instructor or the Office of the Dean of Engineering.

Course Schedule (Tentative, Prof. Weidong Zhou)

Schedule		EE2303 Fall 2011	
WK	Date	Topics	Student Assignments
1			
	08/25	Class intro, review and basic design process	Ch1.1-1.11
2	08/30		
	09/01	Basic amplifier concepts	Ch2.1-2.11
3	09/06		
	09/08		
4	09/13	Diodes and diode circuits	Ch3.1-3.12
	09/15		
5	09/20		
	09/22		
6	09/27	Mid-term 1 (in class)	
	09/29	Bipolar junction transistors	Ch4
7	10/04		
	10/06		
8	10/11	BJT circuits	Ch7.2
	10/13		
9	10/18		
	10/20		
10	10/25		
	10/27		
11	11/01		
	11/03	Mid-term 2 (in class)	
12	11/08	Field effect transistors	Ch5.1-5.7
	11/10		
13	11/15		
	11/17	FET circuits	Ch7.3
14	11/22		
	11/24	Thanksgiving break	
15	11/29	Digital logic circuits	Ch6.3-6.6
	12/01		
16	12/06	Final class review	
	12/08	No class	
		Final Exam	

**STATEMENT ON ETHICS, PROFESSIONALISM, AND CONDUCT
FOR ENGINEERING STUDENTS**

COLLEGE OF ENGINEERING
THE UNIVERSITY OF TEXAS AT ARLINGTON

The College cannot and will not tolerate any form of academic dishonesty by its students. This includes, but is not limited to cheating on examination, plagiarism, or collusion.

Cheating on an examination includes:

- 1 Copying from another's paper, any means of communication with another during examination, giving aid to or receiving aid from another during examination;
- 2 Using any material during examination that is unauthorized by the proctor;
- 3 Taking or attempting to take an examination for another student or allowing another student to take or attempt to take an examination for oneself.
- 4 Using, obtaining, or attempting to obtain by any means the whole or any part of an un-administered examination.

Plagiarism is the unacknowledged incorporation of another's work into work which the student offers for credit.

Collusion is the unauthorized collaboration of another in preparing work that a student offers for credit.

I have read and I understand the above statement.

In addition, I understand that, in order to ensure fairness to all students, exams will be proctored and possibly videotaped.

Course and section number: ____EE 2303-001____

Date: _____

Student's signature: _____

Student's name, printed: _____

Student's ID number: _____

Student's e-mail address: _____
(please print clearly)