

Abilene Christian University

Course Syllabus

Physics 335 (2 hours credit)
Introduction to Electronics

Spring 2012
8:30 TR, S350

Professor: Michael Sadler, Ph. D.
Office: 320B Foster Science Building
Hours: 9:15-11:00 MWF, 2:30-5:00 MF, by appointment (or my door is open)
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Text: Electric Circuits, James W. Nilsson and Susan A. Riedel

References: Circuits, Devices and Systems, Ralph J. Smith and Richard C. Dorf
The Art of Electronics, Horowitz and Hill
Basic Electronics for Scientists, Brophy
Principles of Electronic Instrumentation, Diefenderfer and Holton
Microelectronics, Millman

Prerequisites: Calculus II (Math 186)

Recommended: Introductory physics (Either Physics 110, 112 or Physics 120, 122)

Topics: Circuit elements, signals, Thevenin's theorem, techniques in circuit analysis, inductance and capacitance (RL, RC and RLC circuits), the sinusoidal steady state, diodes, transistors, operational amplifiers, and digital circuits (gates, Boolean algebra and sequential logic). We will attempt to cover chapters 1-7 and 9 of the text. Supplemental material on some devices (diodes and transistors) and digital electronics will be provided during the latter part of the course. Laboratory experience is an integral part of the course even though it has a separate course number (Physics 336).

Grading:	Homework	30%	
	Weekly quizzes	30%	(approximately 6)
	Mid-term exam	15%	
	Final exam	<u>25%</u>	
		100%	

First homework assignment:

Due date	Chap.	Problems
20 Jan (5 PM)	1	7, 8, 10, 11, 14, 19, 29
30 Jan	2	2, 4, 11, 16, 22, 33
7 Feb	3	4, 10, 18, 33, 58
14 Feb	4	4, 6, 8, 21, 33, 59, 63
21 Feb	5	1, 16, 36
22 Mar	6	1, 3, 16, 17
29 Mar	7	1, 3, 21, 22

	9	1, 8
5 Apr	9	11(a,b), 12, 13
12 Apr	9	15, 29, 31