SAN JOSE STATE UNIVERSITY
Department of Aviation &Technology

Tech 62
Fall 2018
Lecture: M/W 3:00 PM – 3:50 PM, ENG 327
E-mail: tom.brown@sjsu.edu

Instructor: Tom Brown
Office: no office
Phone: no phone
Office Hrs:
M: 2:00 PM – 3:00 PM
W: 2:00 PM – 3:00 PM

Analog Circuits

Course Description

Semiconductor theory; p-n junction, bipolar transistors, JFETs and MOSFETs, optoelectronic devices. Operational amplifiers and 555 timers. Device applications: comparators, signal generators, active filters, instrumentation amplifiers, voltage regulators and power supplies. Prerequisite: Tech 60. Activity 6 hrs, 3 units.

Student Learning Objectives

Upon successful completion of this course, students will be able to:

a) Describe the fundamentals of semiconductor diodes, transistors, op-amps, and timers.

b) Build, identify, and analyze diode circuits, transistor circuits, op-amp circuits and active filters.

c) Design or modify fundamental electronic circuits to meet certain requirements.

Textbook

Floyd, Thomas L. (2012). 10th Ed. Electronic Devices. Upper Saddle River, NJ: Prentice Hall.

Course Evaluation Criteria

Examinations

Examination #1	October 03	10%	100
Examination #2	November 21	10%	100

Quizzes

Quiz #1	September 12	05%	50
Quiz #2	October 24	05%	50
Laboratory		35%	350
Homework		10%	100
Final: Friday, December 14		25% Time: 12:15 pm - 2:30 pm	250
Total		100%	1000

Grading

97 - 100	A+	85 - 88	B+	73 - 76	C+	61 - 64	D+
93 - 96	A	81 - 84	B	69 - 72	C	57 - 60	D
89 - 92	A-	77 - 80	B-	65 - 68	C-	0 - 56	F

Late Assignments

Late homework assignments will not be accepted. Homework will be assigned Wednesday of each week and must be submitted at the next Wednesday's class.

A missed examination or quiz will be given a score of zero. If you cannot take a scheduled examination or quiz, notification must be given prior to the scheduled examination or quiz.

Campus Closed:
Monday, September 3: Labor Day
Monday, November 12: Veteran's Day
Thursday – Friday, November 22 – 23: Thanksgiving Holiday

Note: You can check your standing in the class by checking on Canvas (https://sjsu.instructure.com). Notify the instructor immediately if there is an error in any of your grades. ***The last day to correct any discrepancy is the last day of instruction.*** There will be no change in your grade after the final grade has been submitted to the university.

Click on the ***Announcements*** tab on https://sjsu.instructure.com for updated information regarding this class.

a) Academic integrity statement (from the Office of Student Conduct and Ethical Development):

"University Policies: Office of Graduate and Undergraduate Programs university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc."

You may find all syllabus related University Policies and resources information listed on GUP's Syllabus information web page at http://www.sjsu.edu/gup/syllabusinfo/

b) Campus policy in compliance with the Americans with Disabilities Act:

"If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with DRC to establish a record of their disability."

Tentative Calendar - Subject to change with fair notice

Week Of	Lecture Topics	Problems
8/22	Ch4: Bipolar Junction Transistors 4-1: BJT Structure 4-2: Basic BJT Operation 4-3: BJT Characteristics And Parameters 4-4: The BJT As An Amplifier	 4-3: 13,14,16,18,19,21
9/12	**Quiz #1**	
9/19	4-5: The BJT As A Switch 5-1: The DC Operating Point 5-2: Voltage Divider Bias 5-3: Emitter, Base, Emitter-Feedback And Collector-Feedback Biasing	4-5: 31,33 5-1: 3,4,5,6,7,8 5-2: 13,15,17,18,20 5-3: 21,25,26,29
10/03	**Examination #1**	
10/10	6-1: Amplifier Operation 6-2: Transistor AC Models 6-3: The Common-Emitter Amplifier 6-4: The Common-Collector Amplifier 10-3: Low – Frequency Amplifier Response 10-4: High – Frequency Amplifier Response 10 – 5: Total Amplifier Response	 6-3: 15,16,17,18,19 6-4: 22,23,24 10 – 3: 8,9,10 10 – 4: 11,12,13 10 – 5: 14,15,16
10/24	**Quiz #2**	
10/31	6-5: The Common-Base Amplifier 6-6: Multistage Amplifiers 12-4: Op-Amps with Negative Feedback 12-5: Effects of Negative Feedback on Op-Amp Impedance 13-1: Comparators	6-5: 29,30 6-6: 31,33,34
11/07	8-1: The JFET 8-2: JFET Characteristic and Parameters 8-3: JFET Biasing 8-4: The Ohmic Region	 8-2: 5,6,7,8,9 8-3: 16,17,18,19,21,22 8-4: 30,31,32
	9-1: The Common-Source Amplifier 9-2: The Common-Drain Amplifier 9-3: The Common-Gate Amplifier	9-1: 2,4,7,13,14,15,16,20 9-2: 26,27,28,29 9-3: 32,33,34
11/21	**Examination #2**	
12/05	2-3: Diode Models 2-4: Half-Wave Rectifiers 2-5: Full-Wave Rectifiers 2-6: Power Supply Filters and Regulators	2-3: 7,8,9,10 2-4: 11,13,15 2-5: 18,19,20,23 2-6: 25,27,29
Final	Friday, December 14	Time: 9:45 am – 1200noon