

<u>4/24/17</u>	DATE	<u>Technology</u>	DIVISION
	REQUIRED COURSE		NEW COURSE
	ELECTIVE COURSE	X	REVISION

LAKE LAND COLLEGE

Course Information Form

COURSE NUMBER	<u>EET 078</u>	TITLE	<u>Applied Amplifier Circuits</u>								
SEM	<u>CR</u>	HRS	<u>3</u>	LT HRS	<u>2</u>	LAB HRS	<u>2</u>	SOE HRS	<u> </u>	ECH	<u> </u>

COURSE PCS# _____ (Assigned by Administration)

Prerequisites: EET052 – Solid State Devices

Catalog Description (40 Word Limit):

A study of linear electronic circuits. Combines theory of passive and active circuits into operational units. Topics include amplifiers frequency response, feedback, operational and instrumentation amplifiers, linear and switching regulators.

List the Major Course Segments (Units)	Lt Hrs	Lab Hrs
Linear Regulators	4	4
Switching Regulators	2	2
Operational Amplifier Basics	2	2
Amplifier configuration	4	4
Frequency Response	4	4
Linear Amplifier Circuits	12	12
Active Filters	2	2

EVALUATION:	Quizzes	<u>X</u>	Exams	<u>X</u>	Oral Pres	<u></u>	Papers	<u>X</u>
	Lab Work	<u>X</u>	Projects	<u></u>	Comp Final	<u></u>	Other	<u></u>

Textbooks: **Title:** **ELECTRONIC DEVICES**
 Author: **Floyd**

Publisher: Prentice-Hall

Volume/Edition: 6th

Copyright Date:

Major Course Segment	Hours	Learning Outcomes Students will be able to . . .
Linear Regulators	2	Describe series and shunt regulator function. Define the principles related to the quality of a regulator; Load regulation and Line regulation.
	Lab 4	Test load regulation of several linear regulators. Prepare Lab report
Switching regulator	2	Examine basic switching regulators; step down, step up, and voltage inverter. Describe three terminal regulators in the 78XX and 79XX families
	Lab 2	Build and test a 78XX regulator. Prepare Lab report
Operational Amplifier Basics	2	Define basic op amp modes of operation; Single ended, differential, and common mode. Students will understand basic op amp parameters; CMRR, open loop gain, slew rate, etc..
	Lab 2	Test the slew rate of an Operation Amplifier. Prepare Lab report
Amplifier configurations	4	Describe the basics of negative feedback, and basic amplifier types; inverting, non-inverting, and voltage follower. Compare how input and output impedance are affected by each type.
	Lab 4	Build and test an inverting and non-inverting Operation Amplifier to determine gain. Prepare Lab report
Frequency Response	4	Describe how gain, phase shift, and frequency response are related.
	Lab 4	Build and test an inverting and non-inverting Operation Amplifier to determine frequency response. Prepare Lab report
Linear Amplifier Circuits	12	Describe principles and uses of comparators, summing amplifiers, integrators and differentiators, instrumentation, log/antilog amplifiers, and voltage to current and current to voltage amplifiers
	Lab 2	Build and test a comparator
	Lab 2	Build and test a summing amplifier.

	Lab 2	Build and test an integrator.
	Lab 2	Build and test a differentiator.
	Lab 2	Build and test a current to voltage amplifier.
	Lab 2	Build and test voltage to current amplifier
Active filters	2	Describe the basic filter types; low pass, high pass, band-pass, band-stop. Define filter response Bessel, Chebyshev, Butterworth
	Lab 2	Build and test a high pass and low pass filter. Prepare Lab report

Course Outcomes: At the successful completion of this course, students will be able to:

- Determine gain and impedance for an op amp configuration
- Demonstrate proper measurement and data collection procedures.
- Determine the proper type of linear amplifier for a given situation.