Montgomery County Community College
EGT 230
Analog Devices
4-3-3

COURSE DESCRIPTION:
This course introduces the student to the implementation of commercially available solid state devices and linear integrated circuits in analog electronic systems. The course is taught in a laboratory-oriented environment and incorporates a design-of-experiments approach to fabrication and test of a variety of communication systems. Interactive computer-based instructional systems provide hands-on training. This course is subject to a course fee. Refer to http://mc3.edu/adm-fin-aid/paying/tuition/course-fees for current rates.

REQUISITES:
Previous Course Requirements

EGT 190 Principles of Critical Thinking in Technology
PHY 122 General Physics II or equivalent
MAT 162 - Precalculus II

Concurrent Course Requirements
None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Explain the various applications of linear devices and analog circuits.	Lecture Group Problem Solving Design of Experiments	Exams Design of Experiments Review
2. Apply learned methods of analysis to linear devices and analog circuits.	Lecture Group Problem Solving Design of Experiments	Exams Design of Experiments Review
3. Operate instrumentation used in the measurement of linear devices and analog circuits.	Lecture Group Problem Solving Design of Experiments	Exams Design of Experiments Review
4. Apply course-derived knowledge in the design, assembly, and presentation of an RF control device.	Lecture Design of Experiments	Design/Fabrication Term Project/ Presentation Review

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated

results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

SEQUENCE OF TOPICS:

1. Basic Concepts of Analog Circuits and Signals
2. Diodes and Applications
3. Bipolar Junction Transistors (BJTs)
4. Field-Effect Transistors (FETs)
5. Multistage, RF, and Power Amplifiers
6. Operational Amplifiers
7. Op-Amp Responses
8. Basic Op-Amp Circuits
9. Active Filter
10. Oscillators and Timers.
11. Voltage Regulators
12. Special-Purpose Amplifiers
13. Communications Circuits
14. Data Conversion Circuits
15. Measurements and Control Circuits

LEARNING MATERIALS:

Textbook:

Floyd and Buchla. *Fundamentals of Analog Circuits. 2002*. Pearson.
ISBN: 9780130606198

Multi-Sim Software

Other learning materials may be required and made available directly to the student and/or via the College's Blackboard course management system.

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