

COURSE SYLLABUS

EECT 121, ELECTRONICS CIRCUIT ANALYSIS

COURSE TITLE: Electronics Circuit Analysis

COURSE NUMBER: EECT 121

PREREQUISITES: EECT 111 Introduction to Circuits Analysis

SCHOOL: Technology

PROGRAM: Electronics and Computer Technology

CREDIT HOURS: 4

CONTACT HOURS: Lecture: 3 Lab: 2

INSTRUCTOR: Ron Uhey

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CATALOG DESCRIPTION: Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT and MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design circuits. Computer simulation is used.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course, the student will be expected to:

Explain the characteristics of capacitors, inductors, rectifier diodes, Zener diodes, IC regulators, bipolar junction transistors (BJT's), field effect transistors (FET's), IC waveform generators, general purpose operational amplifiers, programmable analog IC's.

Apply the principles of circuit analysis to the following major electronic circuits: power supplies, op-amps, BJT and FET biasing, amplifier systems, wave shape generators, RC and RL switching circuits, and transformer circuits.

Simulate the above circuits and compare actual data and simulated data.

Construct electronic circuits according to a given schematic and make electrical measurements using digital multimeters, signal generators, and oscilloscopes.

Illustrate the role of mathematical models in electronics problem solving.

Program analog integrated circuits to perform basic signal amplification.

Interpret the data of laboratory experiments.

COURSE CONTENT: Topical areas of study include –

Capacitors

Switching circuits Inductors

Transformers

Rectifiers

Linear regulators Dependant sources

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Operational amplifiers

BJT small signal amplifier

FET small signal amplifier

Waveform generators

Programmable analog devices

Utilize Ohm's and Kirchhoff's laws in the analysis and design of circuits

Computer simulation

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Week Date Chapter

1 JAN 15 INTRO

2 JAN 22 22

3 JAN 29 23

4 FEB 5 24

5 FEB 12 EXAM

6 FEB 19 25

7 FEB 26 25

8 MAR 5 MIDTERM

9 MAR 12 SPRING BREAK

10 MAR 19 26

11 MAR 26 27

12 APR 2 28

13 APR 9 29

14 APR 16 30

15 APR 23 31

16 APR 30 REVIEW

17 MAY 7 FINAL