FLCC Course Syllabus

General Information

Date
04/26/2017

Department
Science & Technology

Course Prefix:
TECH

Course Number:
122

Course Title:
Electronic Theory

Course Information

Credit Hours
3

Lecture Contact Hours
2

Laboratory Contact Hours
3

Catalog Description
An algebra based electric circuit analysis course. Topics include: voltage, current, resistance, Ohm's law, resistor combination, Kirchhoff's laws, power, source conversion, capacitance, relays, microcontrollers, and residential wiring. Computer analysis of circuits introduced. Lab applies classroom theory, teaches use of multimeters and power supplies, and introduces the oscilloscope, breadboarding, schematic reading and troubleshooting.

Prerequisites
MAT 145 or placement into Math Level 3 or higher.

Grading Scheme
Letter Grade

FLCC Values

College Learning Outcomes Addressed by the Course

Inquiry
Interconnectedness
Perseverance

Course Learning Outcomes
Course Learning Outcomes

1. Analyze and design simple DC or AC circuits to solve for voltage and current.
2. Perform a power analysis of an electronic circuit.
3. Use various measurement instrumentation to analyze DC and AC circuits and report the finding in a technical lab report.

Program Affiliation

This course is required as a core program course in the following program(s)

- AAS Instrumentation and Control Technologies
- AAS Mechanical Technology
- Other - Write In: Instrumentation and Control Technologies Certificate

Outline of Topics Covered

I. Voltage and Current
II. Ohm's Law, Resistance, Power
III. Conductors, Insulators, Resistors
IV. DC Series Circuits and KVL
V. Voltage Division
VI. DC Parallel Circuits and KCL
VII. Multimeter, Protoboard
VIII. Current Division
IX. DC Series-Parallel Circuits
X. Wheatstone Bridge
XI. Superposition Theorem
XII. Thevenin's Theorem
XIII. Norton's Theorem
XIV. Mesh Analysis
XV. Alternating Current
XVI. Rms Voltage
XVII. Phase Angle
XVIII. Capacitor
XIX. Capacitive Circuits
XX. Inductive Circuits
XXI. RLC Band Filter Circuits
XXII. Transformers
XXIII. Detection of Radio Waves
XXIV. Semiconductor Devices
XXV. Diodes
XXVI. Rectifier Circuit
XXVII. Operational Amplifier
XXVIII. Transistors