CNST A150: ELECTRONICS FOR ELECTRICIANS

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	095220 - Electrical
Units	4 Total Units
Hours	108 Total Hours (Lecture Hours 54; Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Introduction to basic DC and AC circuits and electronic devices. Covers history of electronics, basic electricity, math, circuit theory, circuit components, digital electronics, schematics, test equipment. Labs will cover practical applications of all covered topics. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Demonstrate the understanding of the operation of DC/AC circuits.
2. Construct, troubleshoot and repair basic electronic circuits using basic test equipment.

Course Objectives

- 1. Measure resistance, voltage, current.
- 2. Identify the basic components of simple/complex electronic circuits.
- 3. Understand the use of basic electronic test equipment.
- 4. Read and comprehend schematics.
- 5. Construct electronic circuits from schematics.
- 6. Troubleshoot and repair electronic circuits.
- 7. Construct breadboard simple electronic circuits.
- 8. Use Ohms law to perform calculations to determine volts, amperes, and watts.

Lecture Content

Orientation to lab classroom equipment Safety procedures for all work in the lab. Safety Examination. History of electronics. Basic electricity. Math for electronics Circuit theory. Series/parallel circuits. Basic circuit components. Resistors,capacitors,inductors Transformers. Power supplies. Semiconductors Diodes. Transistors. Schematic diagrams. Boolean logic. Digital electronics. Integrated circuits. Filters. Amplifiers Motors. Communications systems. Antennas. Wireless. Lighting systems. Solar technology Wire/cabling. Audio/video systems. Overcurrent protection devices.

Lab Content

Faculty input required.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture, demonstrations, cooperative learning groups, and lab assignments.

Reading Assignments

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Writing Assignments

Short answer homework assignments and basic electronic troubleshooting techniques

Out-of-class Assignments

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Demonstration of Critical Thinking

Students will be given various types of written tests for their evaluation in this course during this semester. These will include identification, multiple choices, fill-in the blank and mathematical calculation. Students will be required to do lab assignments. Students will be required to participate in class discussions and presentations.

Required Writing, Problem Solving, Skills Demonstration

Short answer homework assignments and basic electronic troubleshooting techniques

Textbooks Resources

1. Required Cook, Nigel P.. Introductory DC/AC Circuits., 6th ed. ed. New York: Prentice Hal, 2004 Rationale: -