CNST A156: NATIONAL ELECTRICAL CODE

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	095220 - Electrical
Units	2 Total Units
Hours	36 Total Hours (Lecture Hours 36)
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

This course is designed to provide those currently working in the electrical field with training that will keep them current with NEC standards that are updated every three years. Hours earned in this course may be applied toward the mandatory 32 hours of training required for license renewal. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Properly install a branch circuit with all the components sized per the NEC (National Electrical Code) and install any type of switching, receptacle or light fixture that will be on that circuit.
2. Determine the difference between 120 volt circuits and 240 volt circuits in any type of electrical panel and be able to calculate the appropriate size in amps with the use of electrical math equations.

Course Objectives

- 1. Use the index of the National Electrical Code (NEC) to identify specific codes that are relevant to residential commercial and industrial buildings.
- 2. Read and comprehend electrical definitions and terminology of the NEC.
- 3. Apply the appropriate math formulas for problem solving of branch circuits.
- 4. Recognize and properly name various connectors, conduit, fittings, and boxes necessary for installation.
- 5. Calculate the appropriate box size per the NEC.
- 6. Calculate the appropriate wire size per the NEC.
- 7. Use Ohms law to perform calculations to determine volts, amperes, and watts.
- 8. Determine the proper spacing for receptacles for general purpose branch circuits.

Lecture Content

Orientation Safety procedures for work. Branch Circuits Overcurrent Protection Enclosures, disconnect and guarding Circuit Breakers Grounding and Bonding Electrode types and system Electrode conductors and sizing of electrode conductors Wiring Methods Conductors for general wiring Outlets, devices, pull boxes, junction boxes and conduit boxes Raceway Systems Strut type channel raceways Surface mounted raceways Motors, Motor Circuits, and Controllers Overload protection Short-circuit and ground-fault protection Generators Constant voltage Disconnecting means Emergency Systems and Fire Alarm Systems Panels Power limited Fire Alarms

Method(s) of Instruction

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

Instructional Techniques

Lecture, demonstrations, and cooperative learning groups.

Reading Assignments

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Writing Assignments

Short answer homework assignments

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 participate in class discussions and presentations

Required Writing, Problem Solving, Skills Demonstration

Short answer homework assignments

Textbooks Resources

1. Required National Fire Protection Association. National Electrical Code 2008., ed. Massachusetts:: National Fire Protection Association, Inc, 2007