ISET-2240: APPLIED NATIONAL ELECTRIC CODE

Cuyahoga Community College

Viewing: ISET-2240 : Applied National Electric Code

Board of Trustees:
2006-05-25

Academic Term:
Fall 2018

Subject Code
ISET - Integrated Systems Engineering

Course Number:
2240

Title:
Applied National Electric Code

Catalog Description:
Introduction to the National Electric Code including industry safety hazards, standards, and precautions. Extensive guided instruction and practice provided.

Credit Hour(s):
3

Lecture Hour(s):
3

Lab Hour(s):
0

Requisites

Prerequisite and Corequisite
ISET-1420 Applied Electricity II.

Outcomes

Objective(s):

1. Compare the history and intent of the National Electric Code (NEC).
2. Categorize types of wire, cable, conduit and wireways.
3. Compare and contrast code requirements for outlets, lighting, appliances and heating.
4. Calculate service and feeder readings.
5. Analyze environment in order to apply grounding, bonding, and transfer code requirements.
6. Select over-current protection for electrical installations, and over-current motor circuit wiring.
7. Analyze raceway applications.
8. Calculate circuit needs for HVAC/R.
9. Calculate motor control circuits and feeders.
10. Comply with NEC regulations.
11. Employ local and state regulations for licensing.

Methods of Evaluation:

1. Completion of homework assignments.
2. Class participation.
3. Demonstration of application of theories and methods.
4. Final Exam.

Course Content Outline:

1. CONCEPTS (Pertaining to NEC Applications)
   a. Lock-out/Tag-out procedures
   b. Safety
   c. Overcurrent protection
   d. Ohm's Law
   e. AWG
   f. KVL
   g. KCL
   h. Voltage drop
   i. AC Basic
   j. Electric motors (AC/DC)
   k. Transformers
   l. Meters
   m. Professional installation standards
   n. Grounding
   o. Flowcharting
   p. Troubleshooting
   q. Electric motor nomenclature
   r. Tooling components
   s. Measurement systems (U.S. Customary & Metric)
2. SKILLS
   a. Calculating load and usage
   b. Troubleshooting (fundamentals)
   c. Installation procedures
   d. City and state licensing procedures
   e. Creating troubleshooting flow charts
   f. Communication skills
   g. Electrical terminology
   h. Safety rule application
   i. Interpreting schematics and drawings
   j. Interpreting National Electric Code (NEC)
   k. Locating additional resources for materials & troubleshooting
   l. Interpreting drawings & schematics that are dimensions in U.S customary & metric units.
   m. Identifying measuring and hand tools for specific jobs.
   n. Maintenance regulations and procedures
3. ISSUES
   a. Networking
   b. Differences between local and state regulations
   c. Taking concept and applying it
   d. Troubleshooting
   e. Referencing proper citations for applications
   f. Inability to identify problem

Resources

NJATC. *Aplied Codeology.* Thomson Learning Publishing,Clifton Park, NY, 2005.

National Fire Protection Association. *National Electric Code.* 8th ed. National Fire Protection Association, Quincy, MA, 2005.

Anthony, M. *NEC.* 7th ed. McGraw Hill, Columbus, OH, 2005.

Resources Other

1. Amatrol Software

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