NATIONAL ELECTRIC CODE IN CONSTRUCTION II
Course Syllabus

Course Number: CNST-0893B  
OHLAP Credit: No
OCAS Code: None
Course Length: 60 Hours
Career Cluster: Architecture and Construction
Career Pathway: Construction
Career Major(s): Commercial Electrician’s Assistant

Pre-requisite(s): This course prepares the student to locate and interpret specific standards in the NFPA’s National Electrical Code. Instruction includes load calculations, conductor sizing, conduit fill calculations, and standards for wiring practices.

Course Description:

Textbooks:
- Instructor-created materials

Course Objectives:

A. Demonstrate Knowledge of Conductors.
1. Explain the various sizes and gauges of wire in accordance with American Wire Gauge standards.
2. Identify insulation and jacket types according to conditions and applications.
3. Describe voltage ratings of conductors and cables.
4. Read and identify markings on conductors and cables.
5. Use the tables in the NEC® to determine the ampacity of a conductor.
6. State the purpose of stranded wire.
7. State the purpose of compressed conductors.
8. Describe the different materials from which conductors are made.
9. Describe the different types of conductor insulation.
10. Describe the color coding of insulation.
11. Describe instrumentation control wiring.
12. Describe the equipment required for pulling wire through conduit.
13. Describe the procedure for pulling wire through conduit.
15. Pull conductors in a conduit system.

B. Become Familiar with Boxes and Fittings.
1. Describe the different types of nonmetallic and metallic boxes.
2. Understand the NEC® requirements for box fill.
3. Calculate the required box size for any number and size of conductors.
4. Explain the NEC® regulations for volume required per conductor in outlet boxes.
5. Properly locate, install, and support boxes of all types.
6. Describe the NEC® regulations governing pull and junction boxes.
7. Explain the radius rule when installing conductors in pull boxes.
8. Understand the NEC® requirements for boxes supporting lighting fixtures.¹
9. Describe the purpose of conduit bodies and Type FS boxes.¹
10. Install the different types of fittings used in conjunction with boxes.¹
11. Describe the installation rules for installing boxes and fittings in hazardous areas.¹
12. Explain how boxes and fittings are selected and installed.¹
13. Describe the various types of box supports.¹

¹ NCCER objective

Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures: 1. Students are graded on theory and shop practice and performance.
2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

College Credit Eligibility: The student must maintain a grade point average of 2.0 or better.