SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Electrician Construction Program
Revision Date: August 23, 2021
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number:	ELET1726
Course Title:	Electrical Wiring Applications V
Prerequisite(s):	ELET1717 and ELET1721
Corequisite(s):	ELET1722
Catalog Description:	On the Job Training (OJT) to apply construction electrician principles covered in ELET1722.
Credit Hours:	1
Class Hours:	0
Lab Hours:	60
Total Contact Hours:	60

II. COURSE OBJECTIVES: *Course will:*

A. Demonstrate the proper electrical material use.
B. Demonstrate identification and proficient handling of tools.
C. Examine how to use Ohm's Law, DC Theory, and Mathematics relevant to the work conducted.
D. Illustrate industry work process applications, and safety standards needed for success in the electrical industry.
E. Identify proper use of the appropriate articles of the 2020 National Electrical Code.
F. Provide a foundation in the applications of conduit bending.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*

1. Install and maintain electrical wiring and devices with accuracy.
2. Demonstrate an understanding of electronic component recognition, schematic drawing and reading.
3. Identify electrical tools and equipment by name and proper use.
4. Demonstrate safe use of electrical tools and equipment.
5. Explain the meaning and relationship of electrical quantities such as voltage, current, resistance, conductance, and power using Ohm's Law.
6. Develop the ability to measure electrical quantities with analog and digital multimeters.
7. Develop critical thinking skills related to DC circuits.
8. Construct, test, and troubleshoot DC circuits with leaned problem-solving techniques.
9. Relate operations of the basic DC circuit components to application in electronic circuits.
10. Utilize applicable portions of the 2020 National Electrical Code when installing and maintaining electrical wiring and devices.
11. Demonstrate level commensurate skill in bending conduit.
12. Apply necessary conduit use; choose conduit size, measure, cut, bend and install appropriately.

B. General Education Learning Outcomes (GELOs)

1. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome 3: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.

IV. COURSE CONTENT/ OJT HOURS BY WORK PROCESS

A. Project layout and planning.
B. Underground installations.
C. Raceway system installation
D. Install services.
E. Floor duct installation.
F. Motor control center installation.
G. Installing, splicing and terminating wires and cables.
H. Cable tray installation.
I. Lighting system installation.
J. Testing and troubleshooting feeders, motors and branch circuits.
K. Fire alarm installation.
L. Motor installation.
M. Control system installation.
N. Installing & programming PLCs
O. Installing instrumentation and process control systems.
P. Security system installation
Q. Installing sound and communication systems.
R. Installing and termination transformers.
S. Installing fiber optic cable.
T. Welding and brazing.
U. Service and troubleshooting.
V. Material handling and pre-fabrication.

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): *IBEW Apprentice Guide*
B. Other Resources: Instructor handouts, National Electric Code and References available at the Lincoln Electrical Joint Apprenticeship and Training Committee Training Center.

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Cooperative/apprenticeship work experience.

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Demonstrated competencies are evaluated by a licensed electrician.

VIII. SPECIFIC COURSE REQUIREMENTS

A. A grade of “C” or better is required for this course in order to progress into the next.