

Course Code: ECJ 113

Course Title: IBEW Electrical Construction Journeyman III

Department: Applied Sciences and Technologies

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 46.0302

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Part of IBEW Apprenticeship Program: codeology as it relates to the National Electrical Code (NEC), measuring processes used in the electrical industry, intermediate conduit bending, and hydraulic, mechanical, and hand benders.

General Course Objectives

Gain experience and knowledge regarding codeology as it relates to the National Electrical Code (NEC), measuring processes used in the electrical industry, intermediate conduit bending, and hydraulic, mechanical, and hand benders.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Credit in ECJ 112

Methods of Evaluation

The minimum evaluation tools to be used are: 4 written tests, 4 quizzes, 25 homework lessons, attendance at 18 class sessions, and 4 lab exercises.

Instructional Materials and Additional Supplies

Cables and Wiring, 2nd Edition, by John Cadick 9780766802704

Delmar's Standard Textbook of Electricity, 6th Edition, Stephen L. Herman 9781285852706

Electrician's Guide To Conduit Bending, 3rd Edition, Richard Cox

Blueprint Reading Textbook, NJATC

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Hazards of Drug Abuse, IBEW Constitution, Union By-laws, Parliamentary Procedure, COMET	1. State importance of hazards of drug abuse. 2. Discuss IBEW constitution, by-laws, parliamentary procedure, and COMET.	6	12	0
NEC Code Book	1. Use NEC Handbook TOC to clarify subjects, plan, and build. 2. Use codeology to locate code information and NEC Code organization.	6	6	0
Circuit Calculations, AC Generators, AC Resistive Circuits, Capacitors, Diodes, and Rectifiers	1. Demonstrate safe and recommended use of meters. 2. Demonstrate knowledge of diagnostic principles. 3. Describe AC generators, AC resistive circuits, capacitors, diodes, and rectifiers.	6	6	0
Conduit Bending - Mechanical Methods	1. Discuss purpose and demonstrate the use of hydraulic, ratchet-type, and manual benders.	6	6	0
Evaluating Blueprints, Analyzing and Laying Out Residential Circuits, Job Costs, Doing an Actual Takeoff	1. Discuss and demonstrate the evaluation of blueprints, analyzing and laying out residential circuits, and job costs by doing an actual takeoff.	6	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0