

COURSE SYLLABUS**ELECTRICITY I**

7130 Principles of Construction Trades

7124 Electrical Fundamentals

7119 Advanced Electrical

Fall 2022

PROGRAM TITLE: Electricity I**DOE CODE:** See above**RECOMMENDED GRADE LEVELS:** 10, 11, 12**PREREQUISITES:** None**HIGH SCHOOL CREDITS:** 3 per semester (6 total per school year)**ELECTIVE INFORMATION:** Counts as a Directed Elective or Elective for all diplomas**HOW WCC CAN HELP MEET GRADUATION PATHWAYS:****Pathway 1**

CTE elective high school credits

Technical Honors Diploma

Pathway 2

Work-Based Learning

Pathway 3

Technical honors diploma

Industry Certification

2 Advanced CTE Courses

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PROGRAM DESCRIPTION: Electricity I includes classroom and laboratory experiences focused on the installation and repair of the electrical and wiring systems of physical structures. This program includes instruction on the reading of technical drawings and their application in construction processes. Topics include the relationship between views and details, interpretation of dimension, transposing scale, tolerance, electrical symbols, sections, material lists, architectural plans, room schedules, and plot plans. Mathematical principles are used to solve electrical problems, including both AC and DC circuits. Students learn about electron theory, Ohm's Law, Watt's Law, Kirchoff's Law, series circuits, series-parallel circuits, electromagnetic induction, current, voltage, resistance, power, inductance, capacitance, and transformers and apply what they have learned to projects in the classroom and in the field. Many projects are completed in teams working with Construction Technology students. Students complete both CPR and First Aid training and certification.

MAJOR LEARNING OBJECTIVES:

1. Examine concepts of basic shop safety and proper tool usage to ensure compliance with professional and governmental regulations.
2. Interpret data from plans, blueprints, and codes to ensure structures are built to specifications.
3. Apply concepts of circuitry to ensure proper wiring of structure.
4. Design electrical circuits to ensure correct wiring operations in structures.
5. Apply appropriate procedures when working with electricity to ensure compliance with professional and governmental regulations.

REQUIRED TEXT/CURRICULUM MATERIALS:

- Electrical Level 1 Trainee Guide; NCCER
- Core Curriculum Trainee Guide; NCCER
- CareerSafe Online; OSHA

INDUSTRY CERTIFICATION AVAILABLE:

NCCER (National Center for Construction Education and Research) Core
Testing required. Fees may apply.

OSHA 10-Hour Safety Certification
Testing required. Fees apply.

DUAL CREDITS AVAILABLE:

BCTI 100 Introduction to Construction Technology
Ivy Tech 3 credits

BCTI 130 Introduction to Electrical
Ivy Tech 3 credits

METHODS OF INSTRUCTIONAL DELIVERY:

This course will be delivered using a variety of delivery methods. Lecture, class discussion, lab work, and individual and group exercises and activities will be used to deliver the class material.

EVALUATION METHODS:

- Classroom work
- Lab work
- Dual credit course projects and exams
- Certification exams
- Participation and attendance

GRADING CRITERIA:

Assignments are divided into three categories: Classwork (40%), Projects/Assessments (40%), and Work Ethic (20%). Work Ethic includes daily participation and engagement in the class.

GRADING SCALE:

A+ 99-100%	C+ 78-79%
A 92-98%	C 72-77%
A- 90-91%	C- 70-71%
B+ 88-89%	D+ 68-69%
B 82-87%	D 62-67%
B- 80-81%	D- 60-61%
	F 59% and below

ATTENDANCE AND DISCIPLINE:

WCC attendance and discipline policies will be followed as detailed in the Student Handbook.

REQUIRED CONSUMABLE MATERIALS AND EQUIPMENT:

- Student kit