COURSE SYLLABUS

ELECTRICITY I

Fall 2021

PROGRAM TITLE: Electricity I
DOE CODE: 4830
RECOMMENDED GRADE LEVELS: 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 High School Diploma = Directed Electives
Pathway 2 Employability Skills = Work-Based Learning
Pathway 3 Postsecondary Ready = Industry-Recognized Certification

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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. Qualifies for THD and Pathway Industry-Recognized Certification.

OSHA 10-Hour Safety Certification
Testing required. Fees apply. **Does not** qualify for THD and Pathway Industry-Recognized Certification.

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 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

REQUIRED CONSUMABLE MATERIALS AND EQUIPMENT:

- Safety glasses
- Student kit

CLASS POLICIES:

1. Attend each day.
2. Communicate with your teacher when needed.
3. Put forth a good effort each day.
4. Stay on task.
5. Work well in assigned teams.
6. Do the work assigned in a timely manner.