

Course Code: ELX 111

Course Title: Electrical Safety, Regulations, and Tooling

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: 0.5-1-1

Credit Hour Distribution:

Lecture: 0.5

Lab: 1

Clinical: 0

Total: 1

General Course Information

Catalog Description

Introduction to electrical tools, their selection, care, and proper use. Best safe work practices; governing agencies responsible for their oversight. Individual responsibility in the workplace in context with electrical safety.

General Course Objectives

The student should be able to identify tools of the trade and understand the criteria needed to select any given tool for a particular task. Students should also be able to explain the rationale for this selection and demonstrate the proper use of any given tool. They will also need to explain the need for regular tool inspection and maintenance, and demonstrate the ability to do so. Students should also be able to define and describe the various government agencies in charge of the regulation of safety of the individual, workplace safety, and safeguards of property and equipment. Students should also be able to identify, report, document, and in some cases correct workplace hazards. Students should be able to demonstrate best safe practices in context with electrical work.

Minimum Placement Levels

English

None

Reading

None

Math

Placement out of MAT 060

Prerequisites

Credit in ELX 110

Methods of Evaluation

Students will be given a minimum of 2 quizzes, 2 labs, 1 final exam, and 1 lab practical exam.

Instructional Materials and Additional Supplies

Illustrated Guide to the National Electrical Code, 8th Edition. Charles R. Miller. Cengage Publishing.

978-0357371527

National Electrical Code 2020, 978-1455922970

Safety glasses

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.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Tool Identification and Selection	1. Explain how to identify and select a tool based on visual cues. 2. Explain how to determine what each tool's use is for a given task. 3. Define and describe the categories of power tools (type, corded, cordless) and their proper usage. 4. Demonstrate ability to shop for and purchase tools based on various criteria including anticipated frequency of use, price point, and perceptions of quality and value.	2	3	0
Tool Operation and Care	1. Describe how each tool is used, cared for, and inspected; explain why this knowledge is important. 2. Demonstrate the use of each tool and their inspection and maintenance techniques.	2	3	0
Safety Organizations	1. Describe the various government agencies and other jurisdictional bodies and explain the role of each in different aspects of workplace, building, and individual safety. 2. Demonstrate ability to identify safety devices in the workplace, and explain which agency is primarily responsible for their presence.	1.5	3	0
Best Safe Practices	1. Define various safe practices in context with electrical work in the workplace and in general. 2. Describe observations of unsafe working conditions and delineate any corrective measures needed. 3. Demonstrate the ability to perform safe tasks through the use of lockout/tagout, personal protective equipment, and safe working task techniques. 4. Demonstrate proper safety hazard corrective actions, reporting procedures, and preventative interventions. 5. Demonstrate the steps to take in the event of an electrical emergency.	2	6	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
7.5	15	0