

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES AND SKILLED TRADES DIVISION
Utility Line Worker Program
Revision Date: November 2025

I. CATALOG DESCRIPTION

Course Number: UTIL 2100
Course Title: Power Line Transformers
Prerequisite(s): UTIL 1010 with a "C" or higher

Catalog Description: Fundamentals of powerline transformer components, operation, and installation.

Credit Hours: 2.0
Class Hours: 60
Lab Hours: 0
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will:*

- A. Introduce students to the fundamental principles of powerline transformer theory and operation.
- B. Provide knowledge of transformer components, configurations, and their roles in electrical distribution systems.
- C. Emphasize safety practices and proper procedures for transformer handling, connection, and installation.
- D. Develop students' ability to analyze transformer performance and identify common faults or issues.
- E. Prepare students to apply transformer theory to real-world line construction and maintenance situations.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

- 1. Identify and describe the major components and functions of powerline transformers.
- 2. Explain the electrical principles that govern transformer operation, including voltage, current, and turns ratio relationships.
- 3. Distinguish between various transformer types and configurations used in distribution systems.
- 4. Calculate transformer voltage and current ratios for given circuit conditions.
- 5. Demonstrate correct procedures for safe transformer handling, installation, and grounding.
- 6. Interpret nameplate data, wiring diagrams, and connection schematics for single-phase and three-phase transformers.
- 7. Diagnose common transformer problems related to loading, polarity, and connections.

B. General Education Learning Outcomes

- 1. GELO #3: Critical Thinking and Problem Solving
 - a. Outcome #1: Collect, identify, interpret, and analyze data.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

A. TBD
1.

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): TBD

B. Other Resources:

1.

VI. METHODS OF PRESENTATION/INSTRUCTION

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

1.

VII. METHODS OF EVALUATION

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

1. Participation
2. Daily Assignments
3. Written exams/quizzes
4. Lab performance

C. SCC STANDARD GRADING SCALE POLICY:

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS