

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Troubleshooting Techniques
COURSE NUMBER	ELET 0245
DIVISION	Career and Technical Education
DEPARTMENT	ELET
CIP CODE	46.0302
CREDIT HOURS	2
CONTACT HOURS/WEEK	Class: X Lab: 4
PREREQUISITES	None

COURSE DESCRIPTION

Students study all areas of electrical trouble shooting including evaluating customer complaints, observing system operations, formulating a plan, reading, and interpreting schematics.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. The Student will be able to identify workplace safety issues in accordance with OSHA standards.
2. Upon successful completion of this course, the student should be able to identify the job skills necessary to have a successful career in the Electrical Profession.
3. Inspect electrical circuit connections in accordance with the N.E.C. standards of compliance.

TEXTBOOKS

<http://kckccbookstore.com/>

METHOD OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels,

conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

- I. Concepts of meter operations.
- II. Becoming familiar with multi meters, ammeter, megohm meter, and other measuring instruments
- III. Interpretation of wiring diagrams and schematics
- IV. Troubleshooting general electric circuits
- V. Troubleshooting motor circuits

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Know terms associated with troubleshooting techniques.
 1. Explain lock-out and tag-out.
 2. Explain megger a motor.
 3. Explain continuity test.
 4. Explain glow-tecter.
 5. Explain grounded and bonding.
- B. Demonstrate use of multi meters and megohm meters.
 6. Explain readings on a multi meter.
 7. Explain reading on a megohm meter.
- C. Evaluate complaints based on complaints and reports.
 8. Analyze the facts before acting.
 9. Determine power problem.
 10. Determine control circuit problem.
- D. Demonstrate ability to formulate and carry out plan for corrective action.
 11. Write a report on corrective action
 12. Analyze sequential plan of action.
- E. Troubleshoot motor controllers, proximity controls, limits, switches, state timers, pneumatic timers, and motion detectors.
 13. Test for open switches.
 14. Test for broken wires
 15. Test for shorts and grounds.
 16. Test for voltage.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

College Catalog

<https://www.kckcc.edu/academics/catalog/index.html>

College Policies and Statements

<https://www.kckcc.edu/about/policies-statements/index.html>

Accessibility and Accommodations

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.