

Western Technical College

31414373 Industrial Electronics and Maintenance Occupational Skills

Course Outcome Summary

Course Information

Description	Safe work practices in industrial maintenance careers will be explored. General employee behaviors/expectations, resumes, cover letters and interview skills will be addressed along with program technical information review. Preparation for OSHA Safety Certification will also be included. Finally, troubleshooting skills will be further developed from both an electrical and fluid power perspective.
Career Cluster	Manufacturing
Instructional Level	Technical Diploma Courses
Total Credits	1

Textbooks

No Textbook Required.

Learner Supplies

Scientific calculator - T1-30XIIS. **Vendor:** Campus Shop. Required.

Success Abilities

- 1. Apply mathematical concepts.**
- 2. Demonstrate ability to think critically.**
- 3. Demonstrate ability to value self and work ethically with others in a diverse population.**
- 4. Make decisions that incorporate the importance of sustainability.**
- 5. Transfer social and natural science theories into practical applications.**
- 6. Use effective communication skills.**

7. Use technology effectively.

Course Competencies

1. Demonstrate safe working practices and principles.

Assessment Strategies

- 1.1. Skill Demonstration
- 1.2. Written Objective Test

Learning Objectives

- 1.a. Define and examine the characteristics of arc-flash.
- 1.b. Identify various types and applications of Personal Protective Equipment when used.
- 1.c. Discuss the safety properties of a voltmeter on powered circuits.
- 1.d. Explore safe working practices and lockout-tagout procedures relative to electrical and mechanical systems.
- 1.e. Review the OSHA Safety on-line informational modules in preparation for the certification exam.

2. Troubleshoot electrical circuits utilizing an ohmmeter and voltmeter.

Assessment Strategies

- 2.1. Skill Demonstration

Learning Objectives

- 2.a. Review characteristics and operation of ohm meters, volt meters and current meters.
- 2.b. Review operational characteristics of opens and shorts in various circuit configurations.
- 2.c. Review testing of basic circuits to determine if the circuits are open or shorted.
- 2.d. Test a known circuit and components to determine proper or improper operation using resistance and continuity measurement.
- 2.e. Review testing of basic circuits for correct voltage.
- 2.f. Test voltages to determine proper or improper circuit operation.
- 2.g. Compare the resistance of a DMM set to measure voltage and current.

3. Solve fluid power troubleshooting problems.

Assessment Strategies

- 3.1. Written Objective Test

Learning Objectives

- 3.a. Review fundamental hydraulic concepts and proper operation of all system components.
- 3.b. Compare the concepts of hydraulic fluid pressure and hydraulic fluid flow and their effects on system operation.
- 3.c. Discuss potential sources of operational problems in a hydraulic system based on observation and testing.
- 3.d. Explore the effects of contamination on a fluid power system.
- 3.e. Develop a successful troubleshooting strategy for repair of hydraulic systems.

4. Develop job search skills and appropriate documentation.

Assessment Strategies

- 4.1. Written Product

Learning Objectives

- 4.a. Explore job search methodologies.
- 4.b. Discuss the characteristics of a quality cover letter.
- 4.c. Investigate the required elements of a resume.
- 4.d. Discuss how resumes and cover letters can be tailored to a specific employer.