

**ROCHESTER COMMON COURSE OUTLINE** 

# Course discipline/number/title: FST 1631: Electrical Lab I

# **CATALOG DESCRIPTION** Α.

- 1. Credits: 3
- 2. Hours/Week: 6
- 3. Prerequisites (Course discipline/number): MATH 1015 or MATH 1016 or MATH 1115
- 4. Other requirements: None
- 5. MnTC Goals (if any): NA
- Β. COURSE DESCRIPTION: This course covers the basic theory, operation, and practical applications of industrial electronics, electric motors, AC-DC circuits and general wiring diagrams in commercial applications. In this course students will also learn motor control requirements including: control symbols, line diagrams, wiring diagrams, inlays, contacts, and starters.

# C. DATE LAST REVISED (Month, year): March, 2025

# **OUTLINE OF MAJOR CONTENT AREAS:** D.

- 1. Low-voltage practice boards
- 2. Low-voltage motor starters
- 3. Transistors, diodes, and other electrical components
- 4. Single-phase and three-phase motors

#### LEARNING OUTCOMES (GENERAL): The student will be able to: Ε.

- 1. Identify electronic symbols
- 2. Identify transistor elements
- 3. Test transistors
- 4. Construct a SCR DC power control circuit
- 5. Determine capacitor start motor characteristics
- 6. Identify control circuits
- 7. Connect two-wire control circuit
- 8. Connect three-wire control circuits
- 9. Connect time-delay-on energizer timer circuit
- 10. Exhibit safe work habits

#### F. LEARNING OUTCOMES (MNTC): NA

# G. **METHODS FOR EVALUATION OF STUDENT LEARNING:** Methods may include but are not limited to:

- 1. Tests
- 2. Activities
- Η. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s): Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

# **SPECIAL INFORMATION (if any):** I.

1. Attendance is crucial