

# Minnesota State College Southeast

## INDS 1624: Devices & Interfacing for Industrial Electricity

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires the following prerequisite  
ELEC 1202 - Introduction to DC Electricity

Corequisites: None

MnTC Goals: None

The course will start out with a review of the fundamental concepts of electricity. Building off of a basic understanding of direct current, students will be introduced to basic electrical components and systems found in industry. Topics covered will include applied electrical safety, wiring diagrams and blueprints, troubleshooting techniques, and basic test equipment and operation. Student will gain hands-on experience with switches, relays, electrical motors, indicators, multimeters, and other instrumentation in accordance with the National Electrical Code. (Prerequisite: ELEC1202) (3 credits: 2 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 02/01/2019 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

#### **D. LEARNING OUTCOMES (General)**

1. Demonstrate electrical safety and review electric safety practices
2. Introduction to the National Electrical Code
3. Review voltage, amperes and resistance relationship (Ohm's law)
4. Demonstrate use of electrical measuring devices and meters (including scopemeters)
5. Identify common building electrical components and systems
6. Identify power switching devices
7. Describe electrical circuits
8. Identify open and closed circuits
9. Describe control transformer uses
10. Identify disconnect and current limiting devices
11. Identify switching devices
12. Identify relay functions
13. Identify time delay relay functions
14. Identify solenoid devices
15. Describe temperature control devices
16. Describe timer/counter devices
17. Identify motor starter devices
18. Examine circuit loading and how to determine electrical loads
19. Examine common electrical maintenance practices
20. Demonstrate troubleshooting techniques
21. Read electrical wiring diagrams

#### **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted