

# Minnesota State College Southeast

## INDS 1634: Electric Motors

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Electric motors feature skills needed by every automation technician in an industrial setting. Students learn proper motor identification, connection techniques, reversing, replacement selection, and routine maintenance on motor operated equipment. Motors covered in the instruction include Shaded Pole, Split Phase, Permanent Split Capacitor, Capacitor, Capacitor Start Induction Run, 3 Phase, D.C. Motors, programmable Motors, Permanent Magnet and Wound Field Inspection and repair of power tools will also challenge the students troubleshooting ability. Brush maintenance installation, commutator, and slip ring preventative maintenance, and an introduction to drives will round out this must have instruction. (Prerequisite: none) (3 credits: 2 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 03/08/2000 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

### D. LEARNING OUTCOMES (General)

1. Demonstrate electrical safety
2. Review electrical safety practices
3. Review basic DC and AC electrical principles
4. Review voltage, amperes and resistance relationships (Ohm's law)
5. Demonstrate use of electrical measuring devices and meters
6. Recognize the different parts which makeup an electric motor and their function
7. Learn single phase, three phase and DC connection techniques
8. Understand load and how it affects an electric motor
9. Identify motor electrical problems
10. Identify motor mechanical problems
11. Examine motor drive control systems
12. Troubleshoot motor and drive systems
13. Introduction to drives
14. Introduction to programmable motors

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted