

# Minnesota State College Southeast

## **ELEC 1240: Security & Sensors**

### **A. COURSE DESCRIPTION**

Credits: 6

Lecture Hours/Week: 2

Lab Hours/Week: 8

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Security and remote start features are one of the fastest growing areas in mobile electronics. This course will cover how to use transistors, diodes, relays, and bypasses necessary for proper installation of a security system. (Prerequisite: None) (6 credits: 2 lecture/4 lab)

**B. COURSE EFFECTIVE DATES:** 08/27/2004 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

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

1. Identify safe working conditions
2. Demonstrate safety habits
3. Identify and locate ignition wires
4. Describe electric window circuits
5. Describe trunk release circuits
6. Operate digital meter
7. Calculate proper wire gauges
8. Identify electrical components
9. Identify tach wires
10. Measure voltage
11. Measure current
12. Measure resistance
13. Determine voltage polarities
14. Identify airbag circuits
15. Describe electrical laws & formulas
16. Identify open and closed circuits
17. Describe ignition switch operation
18. Compare door lock circuits
19. Describe factors affecting alarm operation
20. Define proper relay operation
21. Identify true ignition wires
22. Identify proper routes for wires
23. Calculate circuit values using Ohm's law
24. Calculate resistor power dissipation
25. Identify device limitations
26. Identify shock sensor circuits
27. Locate parking light wires
28. Locate brake wires
29. Locate door lock wires
30. Identify positive and negative trigger circuits
31. Solve for series-parallel circuit parameters
32. Identify false trigger causes
33. Identify types of noise problems

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

None

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

As noted on course syllabus

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

None noted