

# Dakota County Technical College

## HCEM 1234: Heavy Duty Electronics

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 1

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course teaches students heavy equipment electronics, diagnostics and repair. The student will enhance their knowledge of equipment electronics and failure analysis through instruction and hands-on training. Course work will include electrical schematics and symbols, advanced multimeter training, testing, troubleshooting and repair of electronic monitoring systems. Computerized engine components are also covered. Prerequisites: HCEM1132.

**B. COURSE EFFECTIVE DATES:** 08/21/2003 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

### D. LEARNING OUTCOMES (General)

1. test electronic monitoring systems
2. demonstrate use of diagnostic equipment on computerized engines
3. identify electrical symbols
4. analyze electrical schematics
5. explain electrical schematics
6. explain digital multi-meter readings
7. troubleshoot through use of electrical schematics
8. identify electronic components
9. demonstrate shop safety practices
10. explain electronic monitoring systems
11. troubleshoot electronic switching systems
12. define voltage drop
13. analyze electrical circuits using digital multimeters
14. apply failure analysis to electronic components
15. troubleshoot electronic engines
16. test electronic components

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted