

# Dakota County Technical College

## HCEM 2270: CAT Advanced Training III

### A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: 2

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The student will study the operational principals of machine systems such as Air Conditioning, Hydraulics and Powershift Transmissions.

**B. COURSE EFFECTIVE DATES:** 12/08/2010 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

### D. LEARNING OUTCOMES (General)

1. Identify the characteristics of the air conditioning electronic control system
2. Identify the correct operation for fixed hydraulic circuits
3. Identify the correct operation of a flow control valve
4. Identify the correct operation of hydraulic pumps and motors
5. Identify the principals of operation for countershaft transmissions
6. Identify the principals of operation for planetary transmissions
7. Study the laws concerning basic service of air conditioning systems
8. Understand the operation of PPPC hydraulic circuits
9. Understand the operation of electrohydraulic circuits
10. Understand the operation of hydraulic cylinders and accumulators
11. Understand the operation of load sensing pressure compensated hydraulic circuits
12. Understand the operation of negative flow hydraulic circuits
13. Understand the operation of the directional control valve
14. Understand the theory and principals of operation for the hydrostatic systems

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted