TRANSMISSIONS — HCEM 2115

A. Course Description
   - Credits: 4.00
   - Lecture Hours/Week: 1.00
   - Lab Hours/Week: 3.00
   - OJT Hours/Week: 0
   - Prerequisites: None
   - Corequisites: None
   - MnTC Goals: None

This is a technical course designed to promote understanding of powershift transmissions used in heavy equipment industry. Theory related to powershift transmissions and torque converters, along side fundamental principals of hydraulics, gear ratios, disassembly, assembly and adjustment procedures are covered.

B. Course Effective Dates: 3/22/98 – Present

C. Outline of Major Content Areas
   As noted on course syllabus

D. Learning Outcomes
   1. Analyze operation of torque converter and assemble torque converter.
   2. Calibrate an electronic transmission.
   3. Demonstrate use of specialized tools to troubleshoot an electronic transmission.
   4. Disassemble powershift planetary transmission and assemble planetary powershift transmission.
   5. Display shop safety.
   6. Explain planetary transmission power flows and relate powershift transmission operation.
   7. Explain standard type transmissions.
   8. Explain the operation of directional and speed clutches explain planetary gearing perform stall test.
   9. Identify and inspect torque converter components.
  10. Identify gear types, describe fluid flows.
  11. Identify types of transmission fluids.
  12. Inspect planetary transmission parts
  13. Test and adjust powertrain pressures, converter, lube, main pressures.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
F. Learner Outcomes Assessment
   As noted on course syllabus

G. Special Information
   None noted