A. **Course Description**

- **Credits:** 3.00
- **Lecture Hours/Week:** 1.00
- **Lab Hours/Week:** 2.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

This is an introduction to basic hydraulic machine courses. The students will study the principals of hydraulic safety, component identification, machine operation, fluids, and maintenance. Students will use test instruments such as high-pressure gauges and flow meters to troubleshoot and diagnose hydraulic pump efficiency and condition of related system components. System components are disassembled and reassembled, with adjustments made to main and circuit reliefs in accordance with manufacturers specifications.

B. **Course Effective Dates:** 3/21/98 – Present

C. **Outline of Major Content Areas**

   As noted on course syllabus

D. **Learning Outcomes**

1. Describe hydraulic motor operation.
2. Develop directional control valve operation knowledge.
3. Disassemble and Assemble both hydraulic gear and Vane pumps.
4. Discuss hydraulic pump efficiency.
5. Explain gear type and vane type pump operation.
6. Explain pilot operated operation.
7. Identify hydraulic fluids and hydraulic reservoirs.
8. Incorporate hydraulic preventative maintenance procedures.
9. Solve basic hydraulic system failures.

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

F. **Learner Outcomes Assessment**

   As noted on course syllabus
G. Special Information

None noted