DIES 2641: Advanced Hydraulics

A. COURSE DESCRIPTION

Credits: 4
Lecture Hours/Week: 2
Lab Hours/Week: 4
OJT Hours/Week: *.*

Prerequisites:
This course requires either of these prerequisite categories
1. Both of these
   - DIES 1635 - Hydraulic Fundamentals (Number of Years Valid: 5)
   - DIES 1455 - Applied Technical Mathematics (Number of Years Valid: 5)
Or
2. MATH 1455 - Applied Technical Mathematics (Number of Years Valid: 5)

Corequisites: None
MnTC Goals: None

This course covers the design and theory of open-center hydraulic systems and closed-center hydraulic systems; pilot-operated systems; load-sensing, pressure-compensated hydraulic systems; and proportional priority pressure-compensated hydraulic systems. The student gains understanding of the function, operation, and diagnostics of various hydraulic systems.

B. COURSE EFFECTIVE DATES: 08/25/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Understand hydraulic theory.
2. Demonstrate knowledge of hydraulic components.
3. Demonstrate ability to maintain safe work areas.
4. Display ability to use special tooling.
5. Calculate pressure and flow equations for hydraulic systems.
6. Demonstrate knowledge of open circuit hydraulic systems.
7. Demonstrate knowledge of closed circuit hydraulic systems.
8. Demonstrate ability to test and adjust hydraulic components of system.
9. Demonstrate ability to service and maintain hydraulic system.
10. Troubleshoot and analyze hydraulic faults.

D. LEARNING OUTCOMES (General)

1. The learner will demonstrate knowledge of hydraulic system components.
2. The learner will demonstrate knowledge of hydraulic system testing procedures.
3. The learner will demonstrate knowledge of hydraulic system technical write-up competency.
4. The learner will demonstrate knowledge of hydraulic system safety.

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

None
F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted