Alexandria Technical and Community College

DIES 2641: Advanced Hydraulics

A. COURSE DESCRIPTION
   Credits: 4
   Lecture Hours/Week: 2
   Lab Hours/Week: 2
   OJT Hours/Week: *
   Prerequisites:
   This course requires both of these prerequisites
   DIES 1631 - Hydraulic Fundamentals (Number of Years Valid: 5)
   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. Prerequisite: DIES1631 and MATH1455.

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

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Understand hydraulic theory.
   2. Display 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. Display knowledge of open circuit hydraulic systems.
   7. Display 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