FLPO 2540: Hydraulics for Mobile & Advanced Circuits

A. COURSE DESCRIPTION
   Credits: 3
   Lecture Hours/Week: 2
   Lab Hours/Week: 1
   OJT Hours/Week: *
   Prerequisites:
   This course requires both of these prerequisites
   FLPO 1531 - Hydraulic Components Lab (Number of Years Valid: 5)
   FLPO 1529 - Hydraulic Components (Number of Years Valid: 5)
   Corequisites: None
   MnTC Goals: None

   This course is an introduction to the theory and the application skills used in hydraulics for mobile and advanced circuits. An emphasis will be placed on controls. Prerequisite(s): FLPO1529 and FLPO1531

B. COURSE EFFECTIVE DATES: 08/24/2015 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Explain various closed circuits vs. open circuits
   2. Demonstrate an understanding of various controls for pump applications
   3. Recognize pressure-control circuit requirements
   4. Explain non-compensated vs. pressure compensated flow-control circuits
   5. Recognize directional control valves for mobile hydraulics
   6. Explain advantages and disadvantages of various open center, closed center, and load sensing systems
   7. Demonstrate various circuits
   8. Demonstrate control of variable frequency drive (VFD) systems
   9. Demonstrate control of servo-driven systems

D. LEARNING OUTCOMES (General)
   1. The learner will develop an understanding of the requirements for various mobile pump and motor applications.
   2. The learner will develop an understanding of the requirements for the pressure and flow control component specifications.
   3. The learner will develop an understanding of the requirements for the controls in various hydraulic systems used in mobile and advanced industries today.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus
G. SPECIAL INFORMATION

None noted