MEDR 2610: Machine Design (with CAD)

A. COURSE DESCRIPTION

Credits: 3  
Lecture Hours/Week: 1  
Lab Hours/Week: 2  
OJT Hours/Week: *.*  
Prerequisites:  
This course requires the following prerequisite  
MEDR 1618 - Computer Assisted Drafting 3-D (Number of Years Valid: 5)  
Corequisites: None  
MnTC Goals: None  

Students use basic mechanical elements in design projects. Students study gears, cams, belts, chains, etc. Emphasis is placed on design for assembly, use of catalogues, and importance of economics in design decisions. Prerequisite: MEDR1618.

B. COURSE EFFECTIVE DATES: 05/21/2003 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Identify weld symbols and weld connections.  
2. Create and detail weldments.  
3. Calculate weld sizes and strengths.  
4. Analyze Cam motions.  
5. Create Cam displacement charts.  
6. Draw Cam profiles.  
7. Identify types of gears.  
8. Calculate gear profiles.  
10. Size hydraulic components.  
11. Create simple hydraulic schematic.

D. LEARNING OUTCOMES (General)

1. The learner will define and analyze cam motions.  
2. The learner will analyze and design products for interchangeability and recycle.  
3. The learner will define and calculate welded and hydraulic designs.  
4. The learner will define, describe, and design gears and gearing.

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted