Minnesota State College Southeast

INDS 1660: Mechanical Power Transmission

A. COURSE DESCRIPTION

Credits: 4
Lecture Hours/Week: 2
Lab Hours/Week: 4
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

An introduction to basic tools, common materials and processes will be covered. The various types of mechanical drives and their features will be discussed along with building and preventive maintenance programs. (Prerequisites: none) (4 credits: 2 lecture/2 lab)

B. COURSE EFFECTIVE DATES: 02/01/2019 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
D. LEARNING OUTCOMES (General)
   1. Describe maintenance tools
   2. Explain correct tool usage
   3. Explain rigging methods
   4. Inspect lifting apparatus
   5. Select appropriate lifting apparatus
   6. Analyze a lifting scenario
   7. Calculate lifting weight
   8. Differentiate ladder and scaffold usage
   9. Describe scaffolding assembly
  10. Perform an elevated work task
  11. Explain lubrication purposes
  12. Explain lubrication techniques
  13. Describe components and applications for oil lubricants
  14. Describe components and applications for grease lubricants
  15. Select lubricant
  16. Lubricate mounted and un-mounted bearings
  17. Calculate correct interval and quantity for re-lubrication
  18. List types and purposes of anti-friction bearings
  19. Differentiate ball and roller bearings
  20. Differentiate housed and naked bearings
  21. Select correct housing and shaft fit
  22. Explain installation techniques
  23. Select correct type belt drive
  24. Differentiate various types of drive belts
  25. Explain types and usages of various drive belts
  26. Calculate pulley and belt sizes
  27. Differentiate belt and gear drives
  28. Explain various belt and gear drives
  29. Differentiate various types of gear drives
  30. Select gear drive
  31. List various types of couplings
  32. Design drive system
  33. Analyze the causes of excessive vibration
  34. Explain the dangers of excessive vibration
  35. Explain vibration corrective measures
  36. Analyze misalignment hazards
  37. Explain alignment techniques
  38. Select electric motor drive
  39. Analyze preventive maintenance programs

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None
F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted