

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