

I. COURSE DESCRIPTION:

A. Department Information:

Division: Technical
Department: Machine Trades
Course ID: MACH 096A
Course Title: Central Lubrication
Units: 1
Lecture: 1 Hours
Laboratory: None
Prerequisite: None

B. Catalog and Schedule Description:

This course focuses on an introduction to central lubrication operations, lubrication concepts, simple series/progressive lubrication, troubleshooting and maintenance.

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS:

Upon completion of this course, students will be able to:

- A. Explain central lubrication concepts.
- B. Summarize how Simple Series and Progressive Lubrication Systems interact with power units.
- C. Identify three troubleshooting processes in a central lubrication process.
- D. Operate an Amatrol Piston Distributor Lubrication System.

IV. COURSE CONTENT:

- A. Pneumatic Central Lubrication System Concepts
 1. Central lubrication flow systems
 2. System cycle information on LCD
 3. Clearing faults from Maxi-Monitors to determine lubrication faults
 4. Use of a viscosimeter to measure oil viscosity
- B. Troubleshoot a Series/Progressive Oil System
 1. Select and use a 950-CIL-1 trouble shooting system
 2. Remove the line fault with a standard plug
 3. Clear the fault from a maxi monitor
- C. Piston Distributor Lubrication System
 1. Select a fault from a lubrication system chart and create a fault in a distributor system
 2. Diagnose a blockage in a piston distributor

V. METHODS OF INSTRUCTION:

This course is designed for a combination of hands-on and lecture components, where skills can be tested and evaluated. The instructional methods to be used include:

- A. Multimedia Curriculum, Student Experimentation
- B. Hands-on Skill Exercises-Authentic Assessment
- C. Fault diagnostics utilizing a 950-CIL-1 Trainer

VI. TYPICAL ASSIGNMENTS:

- A. Discussion
Discuss the lube pressure for a pneumatic pump having various lubrication/pressure ratios.
- B. Reading
Read Amatrol text and other related resources on lubrication processes and answer the following questions:
 1. What are the main items that need to be considered when measuring oil viscosity?

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2. What are the main items that need to be considered when clearing lubrication faults?
- C. Hands-on skill demonstration
 1. Demonstrate faults and fault plugs used on a 950-CIL-1 Trainer.
 2. Convert a viscosity rating utilizing a conversion chart.
 3. Evaluate lube pressure problems for a pneumatic pump having various lubrication/pressure ratios.

VII. EVALUATION(S):

- A. Methods of Evaluation
 1. Objective and subjective examinations (for lecture and skill exercises)
Typical Questions:
 - a) Determine the lube pressure for a pneumatic pump having a lubrication/pressure ratio of 30 and an air supply pressure of 50 PSI.
 - b) Convert a viscosity of 1000 SUS to SAE viscosity utilizing a lubricant conversion chart.
 2. Skills examination
Select an oil specification for a given application.
- B. Frequency of Evaluation
 1. Four computerized Learning Activity Packets
 2. Five hands-on application tests

VIII. TYPICAL TEXT(S):

Integrated Systems Technology, Learning Activity Packets 1-4, Amatrol Corporation, Jeffersonville, Indiana, 2000
Edward Hoffman, Student Shop Reference Handbook, 2nd Edition, Industrial Press, New York, 2000
Weingartner, Machinist Ready Reference, 10th Edition, Prakken Publication, Ann Harbor, Michigan, 2000

IX. OTHER SUPPLIES REQUIRED OF STUDENTS:

Calculator