

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Mobile Equipment Hydraulics I
Semester Course Prefix and Number: MEST 1255
Old Quarter Course Prefix and Number:

Submitted By: Andy White
Approval Date:
Revision Date:

Number of Credits: 3
Semester(s) Offered: Spring
Class Size: 24
Negotiated by AASC on: (date)

Number of Lecture Credits: 1
Number of Lab Credits: 2 Number of Lab Hours: 2
Number of Studio/Demonstration/Internship Credits:

Course Purpose Code:

- 0 - Developmental Courses
1 - Non-transferable, General Education
X 2 - Technical course related to career programs
3 - College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
4 - Other college course not considered a part of general education (MNTC) (e.g. computer science, health, physical education)
5 - Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
9 - Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:

This course covers basic hydraulic systems and print reading as they relate to mobile equipment repair. The student will learn how basic hydraulic components are used on mobile equipment as well as how to read basic hydraulic schematics and symbols. The student will also learn the math functions required for hydraulic system repair and maintenance.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): None
Reading Prerequisite:
Composition Prerequisite:
Mathematics Prerequisite:

Career Programs and Transfer Majors Accessing this Course:

Mobile Equipment Service Technician

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)

- 0. X None
1. Communications
2. Critical Thinking
3. Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment

Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Upon completion of this course, the student will be able to:

- 1.) Demonstrate proper safety procedures.
- 2.) Define Pascal's Law.
- 3.) Explain the force triangle (Force = Pressure x Area).
- 4.) Define Bernoulli's Principal.
- 5.) Explain the relationship between flow and pressure.
- 6.) Identify various types of hydraulic fittings.
- 7.) Identify various types of hydraulic lines.
- 8.) Identify various types of hydraulic hose
- 9.) Identify different sizes of hydraulic fittings.
- 10.) Identify different sizes of hydraulic lines
- 11.) Identify different sizes of hydraulic hose.
- 12.) Explain the relationship between hydraulic lines and hydraulic hoses.
- 13.) Properly repair or replace faulty hydraulic lines and hoses.
- 14.) Explain hazards associated with hydraulic system repairs.
- 15.) Explain the importance of selecting the proper hydraulic fluid for different applications.
- 16.) Explain the importance of filtration in a hydraulic system.
- 17.) Identify the components of a basic hydraulic system.
- 18.) Read and understand basic hydraulic schematics and symbols.
- 19.) Perform related math calculations.
- 20.) Define open-center system.
- 21.) Define closed-center system.
- 22.) Perform tasks cooperatively

Student Assessment Methods:

Homework, Lab Assignments, Hands-on Tests, Written Tests

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):

PowerPoint Presentations, Video Presentations, Equipment Specific Diagnostic Software, Digital Volt Ohm Meter.

Outline or Statement of Major Course Content:

See Course Description above

Additional Special Information: (special fees, directives on hazardous materials, etc.)

None

Transfer Information: (Please list colleges/majors that accept this course in transfer.)

Approvals:

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Academic Affairs Standards Committee		

Chief Academic Officer		
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Distribution: Original – Administrative Office

Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records, Student Services, Learning Center, Library

Revised: October 2006