Course Title: Mobile Equipment Hydraulics I
Submitted By: Andy White

Semester Course Prefix and Number: MEST 1255
Old Quarter Course Prefix and Number: 

Number of Credits: 3
Number of Lecture Credits: 1
Number of Lab Credits: 2
Number of Lab Hours: 2
Number of Studio/Demonstration/Internship Credits: 

Semester(s) Offered: Spring
Class Size: 24
Negotiated by AASC on: (date)

Course Purpose Code:
0 – Developmental Courses
1 – Non-transferable, General Education
X – 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.)

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<thead>
<tr>
<th>Goal</th>
<th>Description</th>
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<tbody>
<tr>
<td>0.</td>
<td>None</td>
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<tr>
<td>1.</td>
<td>Communications</td>
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<td>2.</td>
<td>Critical Thinking</td>
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<td>3.</td>
<td>Natural Sciences</td>
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<td>4.</td>
<td>Mathematical/Logical Reasoning</td>
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<td>5.</td>
<td>History and the Social and Behavioral Sciences</td>
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<td>6.</td>
<td>The Humanities and Fine Arts</td>
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<td>7.</td>
<td>Human Diversity</td>
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<td>8.</td>
<td>Global Perspectives</td>
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<td>9.</td>
<td>Ethical and Civic Responsibility</td>
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<td>10.</td>
<td>People and the Environment</td>
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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):


**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:**

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<tr>
<th>Body</th>
<th>Representative Signatures</th>
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<tbody>
<tr>
<td>Curriculum Committee</td>
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<td>Faculty Association</td>
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<td>Academic Affairs Standards Committee</td>
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<td><strong>Chief Academic Officer</strong></td>
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<td><strong>Copies:</strong></td>
<td>Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records, Student Services, Learning Center, Library</td>
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<td>October 2006</td>
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