

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Truck Systems
Semester Course Prefix and Number: MEST 2285
Old Quarter Course Prefix and Number:

Submitted By: Frank Malone
Approval Date: May 2010
Revision Date:

Number of Credits: 3
Semester(s) Offered: Fall
Class Size: 24
Number of Lecture Credits: 1
Number of Lab Credits: 2
Number of Studio/Demonstration/Internship Credits: 0
Number of Lab Hours: 4

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 introduces the student to the advanced truck systems theory pertaining to all systems found on mobile truck equipment. The main course content will include hydraulic, air, and electrical systems with an emphasis on computer controlled engine and power train systems, electronic body, and HVACs systems. The student will learn to safely and properly test, diagnose, and repair these systems.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): MEST 1246 M.E. Safety and Rigging
MEST 1245 M.E. Fundamentals
MEST 1258 M.E. Electronics

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.) Exhibit professionalism.
- 2.) Demonstrate proper safety procedures.
- 3.) Describe the components of a truck engine and power train (ECM/PCM) systems.
- 4.) Demonstrate proper inspection, diagnosis, and repair for ABS air braking systems.
- 5.) Explain theories and principles pertaining to HVAC systems
- 6.) Perform testing, troubleshooting, and repair on air service and hydraulic systems.
- 7.) Compare common components between hydraulic and air systems.
- 8.) Contrast the differences between hydraulic and air braking systems.
- 9.) Explain how an electronic body control (ECM) system works.
- 10.) Compare different types of HAVC systems used in mobile equipment.
- 11.) Perform tasks cooperatively.
- 12.) Properly use of hand and power tools.
- 13.) Demonstrate proper use of electronic and printed service repair information.

**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 Multi-Meters, Personal Computers, Internet.

**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
Academic Affairs Standards Committee		
Chief Academic Officer		

**Distribution:** Original – Administrative Office

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

**Revised:** October 2009