

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Fuel Systems

Submitted By: Frank D. Malone

Semester Course Prefix and Number: MEST 2257

Approval Date: Nov. 2008

Old Quarter Course Prefix and Number: MEST 1257

Revision Date: Oct. 2011

Number of Credits: 2

Number of Lecture Credits: 1

Semester(s) Offered: Spring

Number of Lab Credits: 1 Number of Lab Hours: 2

Class Size: 24

Number of Studio/Demonstration/Internship Credits: 0

Negotiated by AASC on:
(date) November 2008

Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-transferable, General Education
- 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 students to vehicle and equipment fuels and fuel alternatives. Fuel delivery, storage systems, and basic emission controls are studied for gasoline, diesel, and propane fired internal combustion engines.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): MEST 1250 Basic Elec. Systems
MEST 1245 MEST Fundamentals

Reading Prerequisite: None

Composition Prerequisite: None

Mathematics Prerequisite: None

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. 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 common components of a gasoline fuel system.
- 4.) Describe the different types of gasoline fuel systems.
- 5.) Describe the common components of a diesel fuel system.
- 6.) Describe the different types of diesel fuel injection systems.
- 7.) Describe the common components of a propane fuel system.
- 8.) Explain the importance of filtration in a fuel system.
- 9.) Perform testing, troubleshooting, and repair of various fuel systems.
- 10.) 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 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
Curriculum Committee		
Faculty Association		
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 2006