



## DMT 1230

**Division:** Career and Technical Education

**Department:** Automotive Technology

**Course:** DMT 1230

**Title:** Computerized Engine Diagnostics

**Catalog Description:**

This course provides theory and lab experience on heavy duty systems, including computerized engine diagnostics. Instruction covers tune up procedures on electronic, hydrolic electric unit injection (HUEI), Bosch in-line fuel systems, testing, adjusting, maintenance procedures, and safety.

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 4; Lecture: 2; Lab: 5

**Clock/Hour Requirements:** 113

**Offered for Non-Credit:** No

**Prerequisites:** DMT 1220

**Corequisites:** None

**Justification:**

This is the third of three courses designed to teach students fuel injection systems and their controls. The information contained in this course enables the student to repair, service, and troubleshoot current fuel injection systems. Students will troubleshoot and test injection systems to meet government regulations. This curriculum was developed using the nationally recognized Automotive Service Excellence (ASE) task lists, manufacturer training materials, advisory committee input, Utah Valley State College syllabi, and Salt Lake Community College documentation.

**Student Learning Outcomes:**

Upon successful completion, students should be able to:

- explain the operation of HUEI fuel systems
- explain the operation of Bosch in-line and distributor pumps
- test and adjust HUEI and Bosch systems using diagnostic tools.

**Content:**

Course objectives will be accomplished by providing students with experience in the following areas:

- Cummins electronic fuel systems
- Caterpillar electronic fuel systems
- Detroit electronic fuel systems.

### **General Education Outcomes:**

2) Write clearly, informatively, and persuasively.

Students will complete written service reports on each laboratory project. These reports must be written in a clear, concise, and effective manner as this is the means by which customers make repair decisions. These reports are reviewed and returned to students with suggestion for improvement.

4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media.

Students will utilize electronic and written reference manuals and computer diagnostics to identify, troubleshoot, and repair fuel injection systems.

7) Apply scientific reasoning to a variety of contexts.

Students will perform diagnostic services based on the evaluation of a variety of data. Examples would include oil-analysis and Dynamometer applications for vehicle performance testing, similar to doctors placing a patient on a treadmill for diagnosing cardiological disorders.

### **Key Performance Indicators:**

#### **In class:**

- Student scores will be based on: written assignments (20%-30%), lab exercises (40%-50%), and quizzes and tests (20%-30%).

#### **Following class:**

- Upon completion of the course, competency will be demonstrated in subsequent courses and on customer projects. Students will also use on the job service reports and repair orders to verify skills acquired.

### **Representative Text and/or Supplies:**

- Thiessen, Dales, *Diesel Fundamentals*, current edition, Prentice Hall.

**Optimum Class Size:** 10

**Maximum Class Size:** 20

**Signatures:**

I hereby submit this course syllabus:

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Dale Jensen, ,

I hereby find this course consistent with the goals and resources of the Automotive Technology Department:

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Brent Reese, BS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)