



DMT 1801

Division: Career and Technical Education

Department: Transportation Technology

Course: DMT 1801

Title: Computerized Engine Controls and Fuel Systems

Catalog Description:

This course provides experience on computerized engine diagnostics. Time will be spent on engine performance factors, scan tools, input sensors, computer outputs, etc. It will also cover maintenance, tune up, diagnostic procedures, and repair on electronics, hydraulic electric unit injection (HUEI), Bosch in-line, common rail, and mechanical fuel systems.

Co-requisite: The lecture DMT 1801 must be taken concurrently with the lab DMT 1805.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 2; Lecture: 2; Lab: 0

Clock/Hour Requirements: 30

Offered for Non-Credit: Yes

Prerequisites: N/A

Corequisites: DMT 1805

Justification:

This course is required for Automotive Service Excellence (A.S.E.) certification. It is approved by the advisory committee.

Student Learning Outcomes:

Upon successful completion of this course, students will be able to safely perform the tasks listed in the current edition of *A.S.E. Certification for Diesel Training Programs*.

Content:

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

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

- Bosch electronic fuel systems
- mechanical fuel systems
- input sensors, function, and testing
- scan tools
- computer diagnostics
- drivability problems
- testing and diagnosing computer controls.

General Education Outcomes:

Applied Education Outcomes:

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

Students will diagnose, repair, test, and study modern diesel fuel injection systems similar to those found in the industry.

3) Students will demonstrate safe practices and awareness of potential hazards in their field of expertise.

Students will study, test on, and practice a safe work environment in the lab area.

Key Performance Indicators:

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- chapter assignments
- final test
- shop cleanup
- feedback as per A.S.E. requirements
- passing A.S.E. tests
- transferring to other post-secondary institutions
- performance in subsequent courses.

Representative Text and/or Supplies:

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

Optimum Class Size: 15

Maximum Class Size: 25

Signatures:

I hereby submit this course syllabus:

Robert Boyer, BS, Instructor

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

Brent Reese, BS, Associate Professor, Chair

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

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:

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

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)