DMT 1250

Division: Career and Technical Education
Department: Transportation Technology
Course: DMT 1250
Title: Emission Based Maintenance
Catalog Description:

This course provides theory and lab experience on heavy duty diesel systems that control/regulate the engine emissions. Instruction covers testing, adjusting, maintenance procedures, and safety. Students will be taught the em ission standards and regulations of the federal government and administered by organizations such as the Environmental Protection Agency (EPA) and Mine Safety and Health Administration (MSHA).

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 6; Lecture: 2; Lab: 5
Clock/Hour Requirements: 113
Offered for Non-Credit: No
Prerequisites: DMT 1220

Justification:

This is a course that is designed to teach students how to test and understand emissions. The current standards require an understanding of the emissions coming from a diesel engine. The student will be able to use test information to troubleshoot and repair the machine.

Student Learning Outcomes:

Upon successful completion, students should be able to:

- explain the emissions of a diesel engine
- explain the operation of Exhaust Gas Recirculation, (EGR), Diesel Oxidation Catalist (DOC) and Diesel Particulate Filter (DPF) and how to service them
- test and adjust diesel engines with those systems.

Content:

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

- electronic fuel systems EGR, DOC, DPF
- data aquision system including intake and exhaust systems.

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 complete the class task list. Students will keep a file that contains service reports and book work. All work will be graded by the instructor.

2) Students will become aware of industry specific certification and develop skills sufficient to acquire the same.

The instructor will post certification he/she possesses, and explain the same to students. (Note: most certifications are not available to students without four years of experience.)

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

Students will work in the diesel lab under the supervision of the instructors. Students will demonstrate safe work practices and be graded on the same.

4) Students will demonstrate interpersonal skills specific to the skills and environment inherent in their field.

Students will work in a team environment on lab and customer projects. Students will apply interpersonal skills a nd be graded on the same.

Key Performance Indicators:

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

- written assignments
- lab exercises
- quizzes and tests
- performance in subsequent courses.

Representative Text and/or Supplies:

- Bennett, Sean, *Medium/Heavy Duty Truck Engines, Fuel and Computerized Management Systems,* current edition, Thomson/Delmar Learning.
- Khair, Magdi K. and Majewski, W. Addy, *Diesel Emissions and Their Control,* current edition, SAE International.

Optimum Class Size: 10
Maximum Class Size: 20

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)