



DMT 1101

Division: Career and Technical Education

Department: Transportation Technology

Course: DMT 1101

Title: Diesel Engine Repair and Overhaul

Catalog Description:

This course will instruct heavy duty mechanics technology students on the basic operation, parts, and overhaul procedures of diesel engines. The course provides theory of four-stroke diesel engines, their design, structure, operation, maintenance, repair, and overhaul. Students will receive detailed instruction on engine lubrication, air, cooling, and exhaust systems. **Co-requisite: This lecture DMT 1101 must be taken concurrently with the lab DMT 1105.**

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

Corequisites: DMT 1105

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:

Upon completion of this course, students will be able to understand and explain:

- cylinder block, lines, crankshafts, main bearings, vibration dampeners, and flywheel
- pistons, rings, and connecting rod assemblies
- combustion chambers, cylinder heads, and assemblies
- cooling systems, lubricating systems, lubricants, air intake, and exhaust system
- basic engine parts
- operation of internal combustion engines

- differences between diesel and gas engines
- operation of a four-stroke engine and a two-stroke engine
- engine performance factors
- engine rebuilding requirements
- proper engine maintenance and be able to perform proper engine maintenance
- engine diagnosis and be able to perform engine diagnosis

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 engine 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:

- Norman, Schariff, Croinchock, *Heavy Duty Truck Systems*, current edition, Delmar Publishers.

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)