DMT 2410

Division: Career and Technical Education
Department: Transportation Technology
Course: DMT 2410
Title: Chassis Theory and Lab
Catalog Description:

This course provides theory and lab experience for advanced students on the maintenance and repair of heavy duty chassis systems. Instruction covers air brake systems, Automatic Braking System (ABS), steering geometry, front end, tandem alignment, steering, load carrying suspensions, and frame maintenance. This course will emphasize troubleshooting, highway safety, and preventive maintenance.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 6; Lecture: 3; Lab: 9
Clock/Hour Requirements: 180
Offered for Non-Credit: Yes
Prerequisites: DMT 1110

Corequisites: N/A

Justification:

This course instructs students on vehicle safety inspections, chassis systems, air brake settings, and controls. This curriculum was developed using the nationally recognized Automotive Service Excellence (ASE) task lists, manufacturer training materials, and advisory committee input.

Student Learning Outcomes:

Upon successful completion, students should be able to explain and perform competent troubleshooting and maintenance of:

- brake systems
- steering geometry
- alignment systems
- brake hardware, inspection, and settings
- frame maintenance.

Content:

Course objectives will be achieved by providing students with instructional and hands-on experiences in the

following areas:

- dual air brake systems
- schematics and safety
- valve operation
- supply system
- dual circuit air brakes, principles of operation
- dual circuit troubleshooting
- foundation brakes
- front suspension and alignment
- highway suspensions
- frame maintenance and repair
- theory and lab exams.

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 steering, suspension, and brakes.

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 Dynomometer applications for vehicle performance testing, similar to doctors placing a patient on a treadmill for diagnosing cardiological disorders.

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 instructor as to merit.

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 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.

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.

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
- competency in subsequent courses and customer projects

Representative Text and/or Supplies:

- Norman, Bennett, *Heavy Duty Truck Engines, Fuel and Computerized Management Systems*, current edition, Thomson/Delmar Learning.

Optimum Class Size: 10
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

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Robert Boyer, BS, Instructor

I hereby find this course consistent with the goals and resources of the Transportation 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)