DMT 1405

Division: Career and Technical Education
Department: Transportation Technology
Course: DMT 1405
Title: Diesel Suspension and Steering Lab
Catalog Description:

This course gives students the hands on lab experience for DMT 1401. This course covers repair and adjustment suspension and steering systems. Students study steering gears, rack and pinion, conventional and McPhearson struts, alignment angles, and alignment with a computerized four wheel alignment fixture. **This lab DMT 1405 must be taken concurrently with the lecture DMT 1401.**

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 2; Lecture: 0; Lab: 6
Clock/Hour Requirements: 90
Offered for Non-Credit: Yes
Credit/Clock Comments:
Prerequisites: N/A

Corequisites: DMT 1401

Justification:

This course is required for Automotive Service Excellence (A.S.E.) certification. It is also 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:

- safety
- history and evolution of diesel suspension systems
- wheel bearings
- tire and wheel design and repair
- four wheel drive front end and types
- suspension electrical and electronic system design and operation
- four-wheel alignment
- spring types
- shock absorber and strut design types
- suspension angles; i.e., camber, caster, and toe.

General Education Outcomes:

1) Read effectively, constructively, and critically.

2) Write clearly, informatively, and persuasively.

3) Speak effectively in a variety of contexts.

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

5) Apply a cultural and historical awareness to a variety of phenomena.

6) Apply computational skills to a variety of contexts.

7) Apply scientific reasoning to a variety of contexts.

8) Apply ethical reasoning to a variety of contexts.

9) Respond with informed sensitivity to an artistic work or experience.

10) Apply personal-fitness and wellness-management principles to lifestyle choices.

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 automotive suspension systems similar to those found in t he industry.

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

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.

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

Key Performance Indicators:

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

- complete shop tasks as outlined in the current edition of *A.S.E. Certification for Diesel Training Programs*
- student feedback as per A.S.E. requirements
- students passing A.S.E. tests
- students transferring to other post secondary institutions
- student performance in subsequent courses.

Representative Text and/or Supplies:

- Knowles, Don, *Automotive Suspension and Steering Systems*, current edition, Thomson/Delmar Learning.

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)