



DMT 2605

Division: Career and Technical Education

Department: Transportation Technology

Course: DMT 2605

Title: Diesel Electrical and Electronics II Lab

Catalog Description:

This course gives students the hands on lab experience required for DMT 2601. It covers theory, operation, and diagnosis of diesel batteries, starting systems, charging systems, lighting systems, instrumentation, and diesel accessories. **Co-requisite: The lab DMT 2605 must be taken concurrently with the lecture DMT 2601.**

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 2; Lecture: 0; Lab: 4

Clock/Hour Requirements: 60

Offered for Non-Credit: Yes

Prerequisites: N/A

Corequisites: DMT 2601

Justification:

This course is required for Automotive Service Excellence (A.S.E.) certification. It is approved by the advisory committee for an AAS degree in Diesel and Heavy Duty Technology.

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 achieved by providing students with instructional and hands on experiences in the
DMT 2605

following areas:

- safety
- battery construction
- chemical action
- maintenance free batteries
- hybrid batteries
- recombination batteries
- battery ratings
- direct current motors and the starting system
- starter drives
- cranking motor circuits
- charging systems
- AC generator circuits
- AC generator regulation
- lighting circuits
- conventional analog circuits
- instrumentation and indicator lights
- electrical accessories
- review of the body computers
- advanced lighting circuits and electronic instrumentation
- chassis electronic control systems.

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.

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

The tests and homework for this class are designed to simulate and prepare the students to take A.S.E. certification tests.

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:

- Hollembeak, Barry, *Automotive Electricity and Electronics*, current edition, Thomson/Delmar Learning.

Optimum Class Size: 20

Maximum Class Size: 35

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)