DMT 2601

Division: Career and Technical Education
Department: Transportation Technology
Course: DMT 2601
Title: Diesel Electrical and Electronics II
Catalog Description:

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

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 4; Lecture: 4; Lab: 0
Clock/Hour Requirements: 60
Offered for Non-Credit: Yes
Prerequisites: N/A

Corequisites: DMT 2605

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 e dition of *A.S.E. Certification for Diesel Training Programs.*

Content:

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

- 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:

Applied Education Outcomes:

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.

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:

- Hollembeak, Barry, *Automotive Electricity and Electronics*, current edition, Thomson/Delmar Learning.
- DC electric motor kit, available in bookstore.

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)