Faculty are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the College-wide Curriculum Committee.

DEPT. Diesel Technology                      COURSE NO. DSL2136

COURSE TITLE Fuel System Theory

CATALOG DESCRIPTION This course covers a study of all distributor pumps used in Industry today with inlet metering, sleeve metering, and Electronic controlled systems. This course will also examines helix and sleeve metering pumps as well as all types of governor systems used in the industry today by all of the major manufacturers. We will also begin the study of unit type injectors that will move into more electronic systems.

5cr. (5 lect./pres. 0 lab 0 other)

AUDIENCE: Second year diesel students

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area : by meeting the following competencies:
Area : by meeting the following competencies:
Area : by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: AUTO1136, DSL1135,

LENGTH OF COURSE: Semester

THIS COURSE IS USUALLY OFFERED:
Every year X Every other year
Fall X Spring Summer Undetermined

Four goals are emphasized in course at Minnesota West Community & Technical College:

1. ACADEMIC CONTENT:
   A. To learn fuel control systems.
   B. To learn about distributor type pumps.
   C. To learn about inline types pumps.
   D. To learn how the mechanical pumps have changed to electronically controlled pumps.
   E. To learn the delivery of fuel from the injection systems to the engine.
2. THINKING SKILLS:
A. To use different situations to troubleshoot problems in the engine and fuel systems for best performance.
B. To be able to think through how fuel and engine performance work together.
C. To think through governor and fuel system operating together.
D. To be able to know the different between distributor and inline pumps.

3. COMMUNICATIONS SKILLS:
A. Participation in class discussion.
B. Complete written reports and assignments
C. To improve oral communications skills through class presentations.

4. HUMAN DIVERSITY:
A. To understand the roles of the technician in communicating with a diverse population.
B. To work effectively in teams comprised of diverse backgrounds.
C. To express personal philosophies on diverse issues.

TOPICS TO BE COVERED: Distributor and inline mechanical fuel systems and a combination mechanical and electrical injection systems. The service and repair of the different fuel systems.

LIST OF EXPECTED COURSE OUTCOMES: The students will be able to repair all types of fuel injection systems. The student will be able to troubleshoot engine problems. This class will prepare the students for the more advanced electronically controlled engines.

LEARNING/TEACHING TECHNIQUES used in the course are:

- [ ] Collaborative Learning  [X] Problem Solving
- [ ] Student Presentations  [ ] Interactive Lectures
- [ ] Creative Projects  [ ] Individual Coaching
- [X] Lecture  [X] Films/Videos/Slides
- [X] Demonstrations  [ ]
- [ ] Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

- [X] Reading  [X] Tests  [ ] Individual Projects
- [ ] Oral Presentations  [ ] Worksheets  [ ] Collaborative Projects
- [X] Textbook Problems  [ ] Papers  [ ] Portfolio
- [X] Group Problems  [ ] Term Paper
- [ ] Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES The students will be able to repair all types of fuel injection systems. The student will be able to troubleshoot engine problems. This class will prepare the students for the more advanced electronically controlled engines.
"This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal."

The information in this course outline is subject to revision

**Veteran Services:** Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

*This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.*

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