

# MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

## COURSE OUTLINE

**DEPT. DSL**

**COURSE NUMBER: 1135**

**NUMBER OF CREDITS: 3**

**Lecture: 1 Lab: 2 OJT 0**

<b>Course Title:</b>
Fuel Injection Principles

<b>Catalog Description:</b>
Fuel Injection Principles explains and demonstrates diesel engine operation with fuel systems, the basic repair and rebuilding of injectors and timing of the fuel system to the engine.

<b>Prerequisites or Necessary Entry Skills/Knowledge:</b>
None

### FULFILLS MN TRANSFER CURRICULUM AREA(S)

- ☐ Goal 1: Communication: By meeting the following competencies:
- ☐ Goal 2: Critical Thinking: By meeting the following competencies:
- ☐ Goal 3: Natural Sciences: By meeting the following competencies:
- ☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- ☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- ☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- ☐ Goal 7: Human Diversity: By meeting the following competencies:
- ☐ Goal 8: Global Perspective: By meeting the following competencies:
- ☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- ☐ Goal 10: People and the Environment: By meeting the following competencies:

<b>Topics to be Covered</b>
Combustion chambers
Injectors
Engine timing
Fuel delivery

<b>Student Learning Outcomes</b>
Demonstrate injector test procedures
Reassemble and adjust injectors to manufacture specifications
Set and adjust timing on engines
Clean and repair injectors

Discuss combustion
Analyze the operation of an injector using a tester and identify repair necessary
Explain the effect on performance of an engine dependent on operation
Reference the stages of combustion and burning of fuel
Describe combustion chamber designs
Operate injectors

<b>Is this course part of a transfer pathway:</b> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input checked="" type="checkbox"/>
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Revised Date: 8/2021