## DIESEL MECHANICS

### STUDENT GRADE RECORD

**Career & Technical Education**  
**WINDHAM SCHOOL DISTRICT**

**STUDENT NAME**: ________________________________  
**TDCJ #**: ________________________________

**Instructor Name**: ________________________________  
**Unit**: ________________________________

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### WSD Certificate

Y / N

If I were hiring for this position, I would: (check one)

- [____] 0-No recommendation at this time.  
  (Cannot be used for Completers.)  
- [____] 1-Hire this person and look no further.  
- [____] 2-Interview this person along with other applicants  
- [____] 3-Not hire this person.

**Complete only if student attempted industry certification.**

<table>
<thead>
<tr>
<th>Name of Industry Certificate</th>
<th>Code</th>
<th>P/F</th>
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<tr>
<td>ASE, Diesel Engines-T2</td>
<td>0222</td>
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<tr>
<td>ASE, Preventive Maintenance Inspection (PMI)</td>
<td>0228</td>
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<tr>
<td>GREEN ENVIRONMENT</td>
<td>0105</td>
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I attest that all of the information reported on this form is true.

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### Course Outline Modules

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<td>16. Basic Fuel Systems</td>
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<td>27. Diesel Engine Charging Systems</td>
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<td>30. Preventive Maintenance and Troubleshooting</td>
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### Windham Module Test Average

<table>
<thead>
<tr>
<th>Windham Module Test Average</th>
<th>x . 75</th>
<th>a</th>
<th>Completer</th>
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### Windham End of Course Exam

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<tr>
<th>Windham End of Course Exam</th>
<th>x . 25</th>
<th>b</th>
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\[
\text{Windham Module Score} = (a + b) = 70+
\]

% Competencies Completed: 70+

Module Competency Rating: 2.7+
# Recording Directions

**Skill Rating:** Post the student’s competency rating for each skill performed.

**Module Test Score:** Enter the student’s test score for the module.

**Module Rating:** Use the following scale to determine module rating:

- **4 Skilled:** Can perform competencies independently with no supervision.
- **3 Moderately Skilled:** Can perform competencies with limited supervision.
- **2 Limited Skill:** Requires instruction and close supervision to perform competencies.
- **1 Unskilled:** Exposed to concept, but no hands-on experience.

**Note:** When evaluating a student’s module rating, skill performance should be given priority.

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## 1. CTE Orientation

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<th>Teacher</th>
<th>Student</th>
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<tr>
<td>Initial</td>
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1. Identify employment opportunities related to the course.
2. Identify the number of classroom hours a student must attend to be considered as a completer.
3. Identify the industry-recognized certification.
4. Identify course expectations including:
   - Working conditions
   - Attendance expectations
   - Instructor’s expectations

## 2. Introduction to Diesel Engines

**Module Test Score:**

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## 3. Shop Safety

**Module Test Score:**

Minimum 100% Required

**Module Rating (4, 3, 2, 1)**

1. Determine correct fire extinguisher to use for various situations.
2. Demonstrate the ability to safely lift an object.
3. Interpret Material Safety Data Sheets (MSDS).

## 4. Tools, Precision Tools, and Fasteners

**Module Test Score:**

**Module Rating (4, 3, 2, 1)**

1. Demonstrate the proper use of hand tools.
2. Demonstrate how to operate portable and stationary tools safely.
3. Demonstrate how to use a torque wrench.
4. Demonstrate how to use a micrometer.

## 5. Principles of Operations

**Module Test Score:**

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## 6. Engine Blocks

**Module Test Score:**

**Module Rating (4, 3, 2, 1)**

1. Conduct a cylinder block inspection.
2. Inspect a cylinder and liner.
3. Install cylinder liner.

## 7. Crankshafts

**Module Test Score:**

**Module Rating (4, 3, 2, 1)**

1. Inspect a crankshaft for defects.
2. Inspect a flywheel and vibration damper.

## 8. Piston, Rings, and Connecting Rods

**Module Test Score:**

**Module Rating (4, 3, 2, 1)**

1. Demonstrate piston service.
2. Install piston rings.

## 9. Cylinder Heads and Related Components

**Module Test Score:**

**Module Rating (4, 3, 2, 1)**

1. Demonstrate head disassembly procedures.
2. Check for cracks and leaks in a cylinder head.
3. Demonstrate the service of valves and related components.
10. Camshaft and Valve Train Components
   Module Test Score ______
   Module Rating (4, 3, 2, 1)
   1. Remove and replace a diesel engine camshaft.
   2. Inspect and diagnose valve guide wear.

11. Lubrication Systems
    Module Test Score ______

12. Cooling Systems
    Module Test Score ______

13. Air Intake Systems
    Module Test Score ______

14. Exhaust Systems
    Module Test Score ______

15. Diesel Systems
    Module Test Score ______

16. Basic Fuel Systems
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Remove and replace fuel line.

17. Fuel Filters and Conditioners
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Change both bolt-on and spin-on fuel filters.

18. Injection System Fundamentals
    Module Test Score ______

19. Injection Nozzles
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Remove and install a nozzle holder and nozzle.
    2. Disassemble, inspect, clean, reassemble, and test nozzle holders and nozzles.

20. Governors and Acceleration Controls
    Module Test Score ______

21. Multiple Plunger Inline Injection Pumps
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Properly bleed all air from the fuel lines.
    2. Perform diagnostic test to check for proper pump operating pressures, relief valve operation, and fuel line restrictions.

22. Distributor Injection Pumps
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Properly remove, install, and time an opposed plunger, inlet metered distributor pump to an engine.

23. Unit Injector Fuel Injection System
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Properly remove and install a unit injector.
    2. Perform a fuel spill back check.
    3. Perform an engine tune-up on a mechanical unit injection system.
    4. Perform valve clearance adjustment and injector timing adjustment on a diesel engine.

24. Cummins Pressure-Time Injection Systems
    Module Test Score ______
    Module Rating (4, 3, 2, 1)
    1. Perform basic checks and adjustment to the PT fuel pump.
    2. Check PT fuel injection system for fuel system restrictions and air leaks.
    3. Properly remove and install PT fuel injectors.
    4. Perform a timing check on a PT injection engine using the proper timing fixture.
    5. Perform valve crosshead adjustment, valve clearance adjustment, and injector timing adjustment.
25. Basics of Electricity

**Module Test Score** ______

_____ **Module Rating** (4, 3, 2, 1)

_____ 1. Perform battery state of charge and capacity tests.

_____ 2. Properly recharge batteries using either fast or slow charging methods.

_____ 3. Properly jump start vehicles equipped with either 12-volt or 12 to 24-volt electrical systems.

26. Electronic Engine Controls and Fuel Injection

**Module Test Score** ______

_____ **Module Rating** (4, 3, 2, 1)

_____ 1. Demonstrate the basic steps used when troubleshooting engines equipped with electronic controls.

27. Diesel Engine Charging Systems

**Module Test Score** ______

_____ **Module Rating** (4, 3, 2, 1)

_____ 1. Perform checks and adjustments on the charging system.

_____ 2. Remove and install an alternator on a typical diesel engine.

28. Diesel Starting Systems

**Module Test Score** ______

_____ **Module Rating** (4, 3, 2, 1)

_____ 1. Perform starter system tests.

29. Engine Reassembly and Installation

**Module Test Score** ______

_____ **Module Rating** (4, 3, 2, 1)

_____ 1. Reassemble a completely overhauled diesel engine.

_____ 2. Demonstrate procedures for pre-lubrication and preparing the engine for a startup and running.

30. Preventive Maintenance and Troubleshooting

**Module Test Score** ______

_____ **Module Rating** (4, 3, 2, 1)

_____ 1. Perform the following troubleshooting tests: locating a misfired cylinder, cylinder compression check, manometer pressure checks including crankcase pressure, exhaust back pressure, air inlet pressure, air leakage checks, and air box and/or turbocharger boost pressure checks.

_____ 2. Perform primary engine checks.

_____ 3. Properly prepare a diesel engine for short and long-term storage.

_____ Number of Skills Completed +

47 Number of Skills on SPR =

_____% of Skills Completed

<table>
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<th>Conference</th>
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<tr>
<td>Date: _______ Hours in class: _______</td>
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<td>Comments:</td>
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Teacher initial: _______ Student initial: _______