

AUTOMOTIVE SPECIALIZATION (Electronics)

STUDENT GRADE RECORD Career & Technical Education WINDHAM SCHOOL DISTRICT

Student Name _____

TDCJ # _____

Instructor Name _____

Unit _____

WSD Certificate	Y / N
If I were hiring for this position, I would: (check one) <input type="checkbox"/> 0-No recommendation at this time. (Cannot be used for Completers.) <input type="checkbox"/> 1-Hire this person and look no further. <input type="checkbox"/> 2-Interview this person along with other applicants <input type="checkbox"/> 3-Not hire this person.	
Complete only if student attempted industry certification.	
Name of Industry Certificate	Code P/F
ASE – Electrical-Electronics – A6	0216
OSHA	0100

I attest that all of the information reported on this form is true.

Instructor Signature

Date

Course Outline Modules	Windham Module Test	Module Competency Rating
0. CTE Orientation		
1. Safety Chapter 10		
2. Overview of Electrical/Electronic Systems		
3. Electrical Principles		
4. Electrical Circuits and Ohms Law		
5. Electrical Components		
6. Electronic Components and Principals		
7. Tools and Test Equipment		
8. Wiring and Wiring Repairs		
9. Manufacturer Service Information		
10. Basic Electrical Tests		
11. Automotive Computer Operation		
12. Battery Technology		
13. Starting Systems		
14. Charging Systems		
15. Ignition Systems		
16. Fuel and Emissions Control Systems Electronics		
17. Lighting Systems, Instrumentation, Navigation Systems		
18. Wiper and Horn Systems		
19. Power Accessories, Security Systems, and Entertainment Systems		
20. Restraint System Electronics		
21. Chassis System Electronics		
22. Hybrid Drive Systems		
23. On-Board Diagnostics and Scan Tools		
24. Sensor, Actuator, ,Computer Service		
25. Battery and Starting System Service		
26. Charging System Diagnosis and Repair		
27. Ignition System Diagnosis and Repair		
28. Fuel and Emissions Control Systems Electronics Service		
29. Lighting System Diagnosis and Repair		
30. Power Accessories and Sound System Diagnosis and Repair		
31. Restraint System Service		
32. Chassis System Diagnosis and Repair		
33. Hybrid Drive Systems Diagnosis and Repair		
34. Advanced Diagnosis		
35. ASE Certification		
36. Career Success		
<i>Windham Module Test Average</i>	x . 75	a
<i>Windham End of Course Exam</i>	x . 25	b
<i>Windham Module Score (a + b=)</i>		70+
<i>% Competencies Completed</i>		70+
<i>Module Competency Rating</i>		2.7+

AUTOMOTIVE SPECIALIZATION (Electronics)

STUDENT PROGRESS RECORD

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.

0. CTE Orientation

Teacher Student
Initial Initial

- ____ | ____ 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

1. Review of Safety

Module Test Score _____

Minimum 100% Required

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

- ____ 1. Identify sources of electric shock encountered in the automotive shop.
- ____ 2. Summarize how to prevent electrical burns and electrical fires.
- ____ 3. Recall the steps to take in case of an electrical fire.
- ____ 4. Apply battery safety rules when working with automotive batteries.
- ____ 5. Apply safety rules for working safely around gasoline.
- ____ 6. Apply general safety rules when working in an automotive shop.

2. Overview of Electrical/Electronic Systems

Module Test Score _____

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

- ____ 1. Identify the major parts of electrical/electronic systems.

3. Electrical Principles

Module Test Score _____

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

- ____ 1. Recall the properties of conductors and insulators.
- ____ 2. Recall the components of a simple electrical circuit and their function.

4. Electrical Circuits and Ohms Law

Module Test Score _____

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

- ____ 1. Recall the three Ohm's law formulas that express the relationship among voltage, current, and resistance.
- ____ 2. Use Ohm's law and circuit-type formulas to calculate unknown circuit values.
- ____ 3. Use the formula for calculating electric power.
- ____ 4. Interpret electrical values that use prefixes.

5. Electrical Components

Module Test Score _____

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

- ____ 1. Identify electrical components.
- ____ 2. Interpret electronic component ratings and values.
- ____ 3. Recall the symbols and letter designations for electrical components.

6. Electronic Components and Principles

Module Test Score _____

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

- ____ 1. Recall the common types of transistors.
- ____ 2. Classify integrated circuits as analog, digital, active, or passive.
- ____ 3. Recall the characteristics of waves, signals, and noise.

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7. Tools and Test Equipment

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Identify tools that are commonly used during electrical repairs.
2. Select the proper tool or tester for the job.

8. Wiring and Wiring Repairs

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Compare wire types and sizes.
2. Identify wire protection devices.
3. Apply proper techniques to cut and strip wires.
4. Carry out proper procedures to join components or wires by soldering.
5. Identify wire terminals and connectors.
6. Carry out proper procedures for making connections using various types of connectors and terminals.
7. Carry out proper procedures for servicing factory connectors without damaging them.
8. Carry out proper procedures for repairing wiring and fuse links.

9. Manufacturer Service Information

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Use diagnostic charts.
2. Use component location charts and illustrations.
3. Interpret wiring diagrams.
4. Use a grid to locate specific components on wiring diagrams.
5. Select and use the appropriate wiring diagram to troubleshoot an electrical problem.
6. Select and use technical service bulletins and other sources of information from a manufacturer.

10. Basic Electrical Tests

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Use testing devices to check component operation.
2. Use a multi meter to measure circuit voltage, voltage drop, resistance, and amperage.

11. Automotive Computer Operation

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Compare a computer or electronic control system to the human nervous system.
2. Recall the potential locations of automotive computers in an automobile.
3. Recall the various service manual names for an automotive computer.

12. Battery Technology

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Compare types of automotive batteries.
2. Recall the meaning of typical battery ratings.

13. Starting Systems

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the major parts of a starting system and their purpose.
2. Compare the three main types of starting motors.

14. Charging Systems

Module Test Score _____

Module Rating (4, 3, 2, 10)

1. Recall the components of a charging system and their function.
2. Identify the typical locations of voltage regulators on late-model vehicles.
3. Recall the purpose of an alternator vacuum pump.
4. Recall the three basic types of charge indicators and their function.

15. Ignition Systems

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the characteristics and function of basic ignition system parts.
2. Identify cylinder one on a V-type engine.
3. Recall the firing order for four-cylinder engines.
4. Compare the various types of ignition systems.

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16. Fuel and Emission Control Systems Electronics

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the names of the fuel subsystems and their components.
2. Recall the major parts of an electronic fuel injector and their function.
3. Compare single-point and multiport gasoline injection systems.
4. Compare intermittent, timed, and continuous gasoline injection timing systems.
5. Compare narrow and wide band O₂ sensors.
6. Recall the major parts of an electronic fuel pump and their function.

17. Lighting, Instrumentation, Navigation Systems

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Compare headlight bulb designs.
2. Compare conventional and digital instrumentation systems.

18. Wiper and Horn Systems

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the major parts of a windshield wiper system.
2. Recall the major parts of a windshield washer system.
3. Recall the major parts of a horn circuit.

19. Power Accessories, Security Systems, and Entertainment Systems

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the parts of a power window system and their function.
2. Recall the parts of a power door system and their function.
3. Recall the parts of a power mirror system and their function.
4. Compare AM, FM, and digital radio signals.

20. Restraint System Electronics

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Identify the most important parts of vehicle restraint systems.

21. Chassis System Electronics

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the major parts of an anti-lock brake system and their function.
2. Give examples of how ABS can improve safety.
3. Recall the major parts of an electronic shock absorber system and their function.
4. Summarize the parts and operation of an electronic climate control system.
5. Summarize the operation of an electronically controlled automatic transmissions and transaxles.
6. Summarize the operation of parking assist, stability control, and collision avoidance systems.

22. Hybrid Drive Systems

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Recall the major assemblies of a hybrid vehicle and their function.
2. Summarize the hybrid modes of operation.
3. Summarize how a hybrid power splitter can control the engagement of the motor-generators with transaxle or transmission output gears, chains, belts, and shafts.

23. On-Board Diagnostics and Scan Tools

Module Test Score _____

Module Rating (4, 3, 2, 1)

1. Summarize the purpose and operation of on-board diagnostic systems.
2. Compare OBD I and OBD II system capabilities and procedures.
3. Identify the data link connector on most makes and models of cars.
4. Carry out on-board diagnostics and interpret trouble codes with and without a scan tool.
5. Interpret a trouble code chart in a service manual or code conversion by a scan tool.
6. Use the appropriate procedures to erase diagnostic trouble codes.

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24. Sensor, Actuator, Computer Service

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Test various voltage-generating sensors.
- _____ 2. Test variable resistance- and switching- type sensors.
- _____ 3. Carry out proper procedures to service an oxygen sensor.
- _____ 4. Carry out proper procedures to adjust a throttle position sensor.
- _____ 5. Carry out proper procedures to remove and replace various sensors.
- _____ 6. Test servo motors, solenoids, injectors, electric fuel pumps, and other types of actuators.
- _____ 7. Use a VOM to measure computer reference voltage output to sensors.
- _____ 8. Carry out proper procedures to remove and replace a computer.
- _____ 9. Carry out proper procedures to remove and replace a computer PROM.

25. Battery and Starting System Service

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Test a battery.
- _____ 2. Carry out proper procedures for servicing a battery.
- _____ 3. Use a load tester.
- _____ 4. Test battery cables.
- _____ 5. Test a starting system.
- _____ 6. Carry out proper procedures for removing and replacing a starting motor.
- _____ 7. Carry out proper procedures for rebuilding a starting motor.
- _____ 8. Test a starter solenoid.
- _____ 9. Carry out proper procedures for replacing a starter solenoid.

26. Charging System Diagnosis and Repair

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Test the output of a charging system with a VOM and a load tester.
- _____ 2. Carry out proper procedures to remove and replace an alternator.
- _____ 3. Carry out proper procedures to service a voltage regulator.

- _____ 4. Carry out proper procedures to rebuild an alternator.

27. Ignition System Diagnosis and Repair

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Carry out proper procedures to gap and replace spark plugs.
- _____ 2. Carry out proper procedures to adjust pick-up coil air gaps.
- _____ 3. Carry out proper procedures for checking ignition timing.
- _____ 4. Test an ignition coil.

28. Fuel and Emission Systems Electronics Service

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Test electrical/electronic components found on late-model fuel and emission control systems.
- _____ 2. Use a fuel system wiring diagram to locate all the components in the circuit that could be causing problems.

29. Lighting System Diagnosis and Repair

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Carry out troubleshooting procedures used to diagnose common lighting system problems.
- _____ 2. Carry out proper procedures to remove and replace headlight bulbs and other bulbs.
- _____ 3. Carry out proper procedures to replace a turn light switch.
- _____ 4. Test gauges.
- _____ 5. Carry out proper procedures to remove and replace a dash cluster.

30. Power Accessories and Sound System Diagnostics and Repair

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Carry out basic troubleshooting procedures to diagnose power accessories and sound systems.
- _____ 2. Carry out the removal and replacement of a door panel.

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