

HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION

STUDENT GRADE RECORD *Career & Technical Education* WINDHAM SCHOOL DISTRICT

Student Name _____

TDCJ # _____

Social Security Number _____

Certified Craft Instructor _____

Certified Craft Instructor Code _____

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
NCCER, Core	0300
NCCER, HVAC, Level-I	0331
EPA, 608, Type I	0336
EPA, 608, Type II	0337
EPA, 608, Type III	0338
CSSO	0102
GREEN ENVIRONMENT	0105
OSHA	510

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

Certified Craft Instructor Signature

Date of Report – CORE _____

Date of Report – CSSO _____

Date of Report – Level I _____

Course Outline Modules	Industry Module Test	Industry Module Performance	Module Competency Rating
CORE			
0. CTE Orientation			
1. Basic Safety- 00101-09			
2. Introduction to Construction Math- 00102-09			
3. Introduction to Hand Tools- 00103-09			
4. Introduction to Power Tools- 00104-09			
5. Introduction to Construction Drawings- 00105-09			
6. Basic Rigging- 00106-09			
7. Basic Communication Skills- 00107-09			
8. Basic Employability Skills- 00108-09			
9. Introduction to Materials Handling- 00109-09			
HVAC LEVEL-I			
10. Introduction to HVAC- 03101-13			
11. Trade Mathematics- 03102-13			
12. Basic Electricity- 03106-13			
13. Introduction to Heating- 03108-13			
14. Introduction to Cooling- 03107-13			
15. Air Distribution Systems- 03109-13			
16. Basic Copper & Plastic Piping Practices- 03103-13			
17. Soldering & Brazing- 03104-13			
18. Basic Carbon Steel Piping Practicess-03105-13			
HVAC LEVEL-II MODULES-Optional			
19. Leak Detection, Evacuation, Recovery, and Charging-03205-07			
20. Troubleshooting Gas Heat-03209-07			
21. Troubleshooting Cooling-03210-07			

Windham Module Test Average	x .75	a	Completer
Windham End of Course Exam	x .25	b	
Windham Module Score (a + b=)			70+
% Competencies Completed			70+
Module Competency Rating			2.7+

I hereby authorize the NCCER Registry Department to verify information in my craft training records to Sponsor Representatives upon request. I release and hold harmless the National Center for Construction Education and Research for this verification process.

Signature _____

Date _____

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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.

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

CORE

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. Basic Safety- 00101-09

Module Test Score _____

Minimum 100% Required

____ Module Rating (4, 3, 2)

- ____ 1. Inspect personal protective equipment (PPE) to determine if it is safe to use (PPE should include safety goggles, hard hat, gloves, safety harness and safety shoes).
- ____ 2. Properly don and remove personal protective equipment (safety goggles, hard hat, and fall protection).
- ____ 3. Demonstrate safe lifting procedures.
- ____ 4. Set up an extension ladder properly.
- ____ 5. Demonstrate three-point contact on a ladder.

2. Introduction to Construction Math- 00102-09

Module Test Score _____

This is a knowledge-based module; there is no performance test.

3. Introduction to Hand Tools- 00103-09

Module Test Score _____

____ Module Rating (4, 3, 2)

- ____ 1. Visually inspect the following tools to determine if they are safe to use:

- Hammer
- Screwdriver
- Saw

____ 2. Make a straight square cut using a crosscut saw.

____ 3. Safely and properly use a minimum of 3 of the following tools:

- Hammer and cat's paw (to drive and pull nails)
- Screwdriver (slotted and Phillips)
- Adjustable wrench
- CHANNELLOCK® pliers
- Spirit level
- Carpenter's square and steel tape
- Saw

4. Introduction to Power Tools- 00104-09

Module Test Score _____

____ Module Rating (4, 3, 2)

- ____ 1. Safely and properly use three of the following tools:
- Electric drill
 - Circular saw
 - Saw Zall®
 - Pneumatic power nailer

5. Introduction to Construction Drawings- 00105-09

Module Test Score _____

____ Module Rating (4, 3, 2)

- ____ 1. Using the floor plan supplied with this module:
- Locate the wall common to both interview rooms.
 - Determine the overall width of the structure studio.
 - Find the distance from the outside east wall to the center of the beam in the structure studio.
 - Find the elevation of the slab.

6. Basic Rigging- 00106-09

Module Test Score _____

____ Module Rating (4, 3, 2)

- ____ 1. Select and inspect appropriate slings for a lift.
- ____ 2. Given various loads, determine the proper hitch to be used.

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- _____ 3. Select and inspect appropriate hardware and/or lifting equipment.
- _____ 4. Demonstrate and/or simulate the proper techniques for connecting hitches.
- _____ 5. Demonstrate the proper use of all hand signals according to ANSI B30.2 and B30.5.
- _____ 6. Describe or demonstrate pre-lift safety checks.
- _____ 7. Demonstrate and/or simulate how to lift the load level.
- _____ 8. Describe and/or demonstrate safety precautions for attaching and disconnecting a load.

7. Basic Communication Skills- 00107-09

Module Test Score _____

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

- _____ 1. Fill out a work-related form supplied by your instructor. (Handouts 4 and 5 are sample forms and are provided in the AIG for this module as an optional resource.)
- _____ 2. Read instructions for how to properly don a safety harness, orally instruct another person to don the apparatus.
- _____ 3. Perform given task after listening to oral instructions.

8. Basic Employability Skills- 00108-09

Module Test Score _____

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

- _____ 1. Demonstrate the ability to access, retrieve, and print from the following basic software programs:
 - Email
 - Databases
 - Internet

9. Introduction to Materials Handling- 00109-09

Module Test Score _____

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

- _____ 1. Demonstrate proper materials-handling techniques.

HVAC LEVEL-I

10. Introduction to HVAC- 03101-13

Module Test Score _____

This is a knowledge-based module; there is no performance test.

11. Trade Mathematics- 03102-13

Module Test Score _____

This is a knowledge-based module; there is no performance test.

12. Basic Electricity- 03106-13

Module Test Score _____

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

- _____ 1. Use the proper instrument to measure voltage in an energized circuit.
- _____ 2. Use the proper instrument to measure current in an energized circuit.
- _____ 3. Use the proper instrument to measure resistance.
- _____ 4. Use a multimeter to check circuit continuity.
- _____ 5. Assemble and test series and parallel circuits using a transformer or battery, wires, and selected load devices.

13. Introduction to Heating- 03108-13

Module Test Score _____

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

- _____ 1. Identify the components of an induced draft and condensing furnaces and describe their functions.
- _____ 2. Perform common maintenance tasks on a gas furnace, including air filter replacement and temperature measurements.

14. Introduction to Cooling- 03107-13

Module Test Score _____

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

- _____ 1. Measure temperatures in an operating cooling system.
- _____ 2. Calibrate a set of refrigerant gauges and thermometers.
- _____ 3. Connect a refrigerant gauge manifold and properly calculate subcooling and superheat on an operating system using a temperature probe.
- _____ 4. Identify refrigerants using cylinder color codes.
- _____ 5. Identify compressors, condensers, evaporators, metering devices, controls and accessories.

15. Air Distribution Systems- 03109-1 3

Module test Score _____

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

- _____ 1. Use a tachometer to measure blower motor rpm.
- _____ 2. Read and interpret equivalent length charts and required air volume/duct size charts.

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- _____ 3. Use a manometer to measure static pressure in a duct system.
- _____ 4. Use a velometer to measure the velocity of airflow at the output of air system supply diffusers and registers.
- _____ 5. Use a velometer to calculate system cfm.

16. Basic Copper & Plastic Piping Practices- 03103-13

Module Test Score _____

Module Rating (4, 3, 2)

- _____ 1. Cut and bend copper tubing.
- _____ 2. Safely join copper tubing using mechanical fittings.
- Flare tubing and complete a flared connection.
 - Use a compression fitting and ferrule to make a connection.
 - Use a swagging tool to swage a piece of tubing.
- _____ 3. Cut and join lengths of plastic pipe.

17. Soldering and Brazing- 03104-13

Module Test Score _____

Module Rating (4, 3, 2)

- _____ 1. Properly set up and shut down oxyacetylene equipment.
- _____ 2. Properly set up and shut down an acetylene single tank.
- _____ 3. Properly prep and safely solder copper tubing in various planes, using various fittings.
- _____ 4. Properly prep and safely braze copper tubing using various fitting.

18. Basic Carbon Steel Piping Practices- 03105-13

Module test Score _____

Module Rating (4, 3, 2)

- _____ 1. Cut, ream, and thread steel pipe
- _____ 2. Join lengths of threaded pipe using selected fittings.

HVAC LEVEL-II MODULES

20. Leak Detection, Evacuation, Recovery, and Charging- 03205-07

Module Test Score _____

Module Rating (4, 3, 2)

- _____ 1. Identify the common types of leak detectors and explain the advantages and disadvantages associated with each type.
- _____ 2. Use selected electronic, ultrasonic, liquid (bubble), and ultraviolet/fluorescent leak detectors to leak test a pressurized operational system.

- _____ 3. Under supervision, use a recovery and / or / recycle unit to recover the refrigerant from a system.
- _____ 4. Under supervision, use a mixture of nitrogen and a trace amount of HCFC-22 refrigerant to pressurize a refrigerant system in preparation for leak testing.
- _____ 5. Under supervision, demonstrate and / or describe how to evacuate a system using the deep vacuum method.
- _____ 6. Describe how to perform a vacuum leak test on an evacuated system.
- _____ 7. Under supervision, demonstrate and / or describe how to evacuate a system using the triple evacuation method.
- _____ 8. Under supervision, demonstrate and / or describe how to use a dry nitrogen as the moisture-absorbing gas when triple evacuating a system.
- _____ 9. Under supervision, demonstrate and / or describe how to charge a system by weight.
- _____ 10. Under supervision, demonstrate and / or describe how to charge a system using the superheat method.
- _____ 11. Under supervision, demonstrate and / or describe how to charge a system using the sub cooling method.
- _____ 12. Under supervision, demonstrate and / or describe how to charge a system using the charging pressure charts method.

21. Troubleshooting Gas Heating- 03209-07

Module test Score _____

Module Rating (4, 3, 2)

- _____ 1. Analyze control circuit diagram(s) for a selected gas heating appliance.
- _____ 2. Identify the tools and instruments needed to troubleshoot a gas heating appliance.
- _____ 3. Develop a checklist for troubleshooting a gas heating appliance.
- _____ 4. Isolate and correct malfunctions in a gas heating appliance:
- Control circuits
 - Combustion system
 - Safety controls
 - Air systems

22. Troubleshooting Cooling- 03210-07

Module Test Score _____

Module Rating (4, 3, 2)

- _____ 1. Develop a checklist for troubleshooting cooling systems.
- _____ 2. Analyze control circuit diagram(s) for a selected cooling system.

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- _____ 3. Identify the tools and instruments needed to troubleshoot a cooling system.
- _____ 4. Isolate and correct malfunctions in a cooling system:
- Electrical problems
 - Compressor electrical failures
 - System-related compressor problems
 - Refrigerant overcharge and undercharge
 - Evaporator and condenser problems
 - Metering device problems
 - Refrigerant lines and accessories
 - Non condensables and contamination

_____ Number of Skills Completed ÷

49 Number of Skills on SPR =

_____ % of Skills Completed

Conference

Date: _____ Hours in class: _____

Comments:

Teacher initial: _____ Student initial: _____