



Mr. Jones HVAC Course Syllabus

First of all, let me say welcome to your 12th grade school year at Audenried Charter High School, and welcome to the HVAC III course.

Course Overview

Description of Course:

This course prepares students for careers in heating, air conditioning, ventilation, and refrigeration by developing the technical knowledge, hands-on skills, and professional competencies required in residential, commercial, and industrial settings. Students study HVAC/R systems, electrical and mechanical components, refrigeration principles, heating and cooling systems, ventilation, controls, troubleshooting, installation, maintenance, and repair while applying industry safety standards and environmental regulations. Emphasis is placed on the use of hand and power tools, diagnostic equipment, system testing, preventive maintenance, technical documentation, and problem-solving through hands-on, project-based learning experiences. Students develop professional communication, teamwork, customer service, and workplace safety skills while building a portfolio that demonstrates competencies aligned with the Pennsylvania Competency Task List for Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (CIP 47.0201). The course prepares students graduating in **2025, 2026, and 2027** for postsecondary education, industry certifications, apprenticeships, and entry-level careers in HVAC/R installation, maintenance, and service.

Course Topics

Quarter 1

- **UNIT 1:** Introduction to Cooling
- **UNIT 2:** Troubleshooting Heating & Cooling
- **UNIT 3:** Heat Pumps

Quarter 2

- **UNIT 4:** Introduction to Hydronic Systems
- **UNIT 5:** Air Distribution Systems
- **UNIT 6:** Leak Detection, Evacuation, Recovery & Charging

Quarter 3

- **UNIT 7:** Basic Copper & Plastic Piping Practices
- **UNIT 8:** Soldering & Brazing

Quarter 4

- **UNIT 9:** Basic Carbon Steel Piping Practices
- **UNIT 10:** Senior Symposium

What You Need to Know to Succeed

Materials

All students **MUST** have ...

- Three-ring binder
- Pencils and highlighters
- Pens

Grading Scale:

- 30% - Assessments (5 total per quarter)
- 40% - Studentwork: classwork, homework, exit tickets (daily)
- 10% - Participation (daily)
- 20% - Lab Work & Shop Performance

Yearly Grade Breakdown:

Quarter One -20%	Quarter 2- 20%	Quarter 3- 20%	Quarter 4- 20%
Quarter 1 Exam - 5%	Quarter 2 Exam - 5%	Quarter 3 Exam - 5%	Quarter 4 Exam - 5%

*** This means that 20% of your final grade is from your Quarter Exams**

Citizenship/Participation

Participation in all class activities and lectures is expected and required. Regular and consistent attendance and **participation** in all class activities and discussions are behavioral expectations in this class.

O (Outstanding) - student's performance in class has a positive influence on the class.

S (Satisfactory) - student adheres to the rules and procedures of the class.

N (Needs Improvement) - student's behavior is disruptive to the class.

Classroom Rules

1. **Be respectful of peers, materials and work areas**
2. **Be on time for class and prepared**
3. **No rough housing**
4. **No cell phone use during class**

Consequences For Rule Violations

First Reminder	Verbal warning & redirection
-----------------------	------------------------------

Second Reminder	Loss of participation points
Third Reminder	More points lost + seat change
Fourth Reminder	More points lost + seat change + call home
Final Step	PBIS Referral / Write-Up/ MTSS Removal

* Serious offenses can, at the teacher's discretion, result in more severe consequences regardless of previous steps taken. Any infraction of the rules may affect your participation grade. It can also be a cause for further action at the teacher's discretion.

* Any infraction of the rules can result in a loss of privileges (field trips, rewards, etc.)

Classroom Procedures / Policies

This classroom is both a learning space and a professional HVAC training environment.

Students are expected to operate the way successful technicians operate in the field: **safely, responsibly, professionally, and with pride in their work.**

Our priorities are:

Safety • Skill • Professionalism • Accountability • Teamwork

1. Entering Class

When you enter the HVAC classroom:

1. Arrive on time and enter calmly.
2. Place personal belongings in the designated area.
3. Sit in your assigned seat/workstation.
4. Check the board for the day's **Do Now, objective, materials, and safety expectations.**
5. Begin the Do Now immediately without waiting for the teacher to tell you.
6. Do not touch tools, equipment, materials, or training systems until instructed.

The expectation: You should be ready to learn and work within the first few minutes of class.

2. Safety Is Non-Negotiable

No assignment, project, or grade is more important than safety.

Students must:

- Follow all teacher directions immediately when working with tools or equipment.
- Wear required PPE at all times during designated lab activities.
- Use each tool only for its intended purpose.
- Inspect tools and equipment before use.
- Report damaged tools, unsafe conditions, spills, injuries, or equipment problems immediately.
- Keep hands, clothing, cords, bags, and materials clear of hazardous work areas.
- Never horseplay, run, throw objects, or distract another student who is working with equipment.
- Never energize, connect, disconnect, open, or operate HVAC/electrical equipment without authorization.
- Follow all applicable electrical, tool, ladder, refrigerant, and shop-safety procedures taught in class.

STOP WORK Authority

Any student or adult may call "STOP" if they see an unsafe condition.

When "STOP" is called, everyone involved must stop work immediately until the instructor determines that it is safe to continue.

Serious Safety Violations

Unsafe behavior may result in:

1. Immediate removal from the lab activity.
2. Completion of a safety review/retraining.
3. Parent/guardian and/or administrator contact when appropriate.
4. Temporary loss of equipment or lab privileges.
5. Additional school consequences for serious or repeated violations.

Students must demonstrate that they can work safely before lab privileges are restored.

3. Personal Protective Equipment — PPE

When PPE is required, students must wear it **before beginning work and for the entire activity.**

Depending on the task, PPE may include:

- Safety glasses/goggles
- Gloves appropriate to the task
- Hearing protection
- Work gloves
- Protective clothing
- Other instructor-designated safety equipment

Students who do not have the required PPE may not participate in the hands-on portion of the activity until the issue is resolved.

4. Tool and Equipment Procedures

If you did not receive permission to use it, do not touch it.

Before using a tool:

1. Receive instruction on its proper use.
2. Understand the associated hazards.
3. Obtain teacher authorization.
4. Inspect the tool.
5. Use the required PPE.

During use:

- Stay focused on the task.
- Keep your work area organized.
- Never loan or exchange tools without following classroom procedures.
- Never modify, misuse, or play with a tool.

After use:

1. Turn off/unplug equipment when directed.
2. Clean the tool if necessary.
3. Return it to its assigned location.
4. Report damage or missing parts immediately.

Tools should leave your hands only to do the job they were designed to do.

5. Tool Accountability

Students are responsible for the tools and materials issued to them or their team.

Before leaving the lab:

- Conduct a tool count.
- Return every tool to its designated location.
- Account for consumable materials.
- Notify the instructor immediately if something is missing.

The class does not leave an incomplete tool inventory for the next group.

6. Movement Around the Lab

Students may move throughout the lab **only when the activity requires it or with teacher permission.**

Do not:

- Enter another team's workspace without permission.
- Congregate around equipment.
- Block exits, walkways, electrical panels, or emergency equipment.
- Sit or lean on workbenches or equipment.
- Enter restricted areas without authorization.

Maintain awareness of your surroundings at all times.

7. Classroom-to-Lab Transition

When the teacher announces a lab transition:

1. Stop academic/classroom work.
2. Listen to the complete safety briefing.
3. Ask questions before beginning.
4. Collect only the materials assigned to your group.
5. Put on the required PPE.
6. Move to your assigned workstation.
7. Wait for the instructor's authorization to begin.

Do not begin because another group has started. Begin when your group has been cleared to work.

8. Cell Phones and Personal Electronics

Phones should not interfere with instruction, safety, or productivity.

Unless specifically authorized for an instructional purpose:

- Phones should be put away during direct instruction.
- Phones may not be used while operating tools or equipment.
- Earbuds/headphones may not be worn during lab work unless specifically authorized.

A distracted technician can be a dangerous technician.

9. Professional Conduct

Students are preparing for careers where employers expect reliability and professionalism.

That means:

- Be on time.
- Follow directions.
- Communicate respectfully.
- Accept feedback.
- Ask questions when unsure.
- Use appropriate workplace language.
- Help teammates without doing their work for them.
- Take responsibility for mistakes.
- Complete assignments and projects to a professional standard.
- Treat equipment, materials, classmates, instructors, guests, and industry partners with respect.

Your habits in this classroom become your habits on the job site.

10. Working in Teams

HVAC technicians rarely work in isolation.

When working in teams:

- Every student must have a role.
- Everyone participates.
- Communicate before operating equipment.
- Do not interfere with another student's assigned task.
- Verify important steps with your partner/team when directed.
- Help solve problems rather than blaming teammates.
- Each student remains responsible for understanding the work.

Teamwork does not mean one person works while everyone else watches.

11. When You Do Not Understand

If you are unsure about an academic question, ask for help.

If you are unsure about a **tool, electrical connection, equipment procedure, or safety step:**

STOP AND ASK.

Never guess when safety is involved.

12. Attendance and Tardiness

HVAC is a hands-on course. Missing class means missing training that may be difficult to reproduce independently.

Students are expected to:

- Attend every day.
- Arrive on time.
- Make up missed academic work.
- Complete required safety instruction before participating in a lab activity they missed.

Students may not participate in an activity requiring safety training they have not completed.

13. Food and Drinks

Food is not permitted in designated lab/work areas.

Drinks must remain in the designated classroom area and away from:

- Electrical equipment
 - Tools
 - Workstations
 - Training systems
 - Computers or sensitive equipment
-

14. Clean-as-You-Go

Professional technicians do not leave unsafe or disorganized job sites.

Throughout the lab:

- Dispose of waste properly.
- Return unused materials.
- Keep cords and tools organized.
- Clean spills immediately and notify the instructor.
- Keep walkways clear.

Cleaning is part of the assignment—not something that happens after the assignment.

15. End-of-Class Shutdown Procedure

The final portion of class is reserved for restoring the classroom and lab.

When cleanup is called:

1. **STOP** — Stop working.
2. **POWER DOWN** — Turn off equipment as directed.
3. **ACCOUNT** — Check all tools and materials.
4. **RETURN** — Put everything in its designated location.
5. **CLEAN** — Clean your workstation and surrounding area.
6. **INSPECT** — Complete the team's final safety check.
7. **REFLECT** — Complete the Exit Ticket or submit required work.
8. **DISMISSAL** — Remain until the instructor dismisses the class.

The bell does not dismiss the lab—the instructor does.

16. Emergency Procedures

If an emergency occurs:

- Stop working immediately.
- Turn off equipment only if directed and safe to do so.
- Follow the instructor's directions.
- Do not crowd around an injured person or damaged equipment.
- Keep emergency exits and access routes clear.
- Report every injury, even if it appears minor.
- Follow all school emergency procedures.

Students should know the locations of designated:

- Emergency exits
 - Fire extinguishers
 - First-aid equipment
 - Eye-wash/emergency safety equipment, where applicable
 - Electrical disconnects/emergency shutoffs, where applicable
-

HVAC Lab Non-Negotiables

1. Protect yourself and others.
 2. Never operate equipment without authorization.
 3. Wear required PPE.
 4. No horseplay in the lab.
 5. Stop and ask when you are unsure.
 6. Account for every tool.
 7. Leave the workspace better than you found it.
 8. Work like a professional.
-

The Audenried HVAC Standard

We are not simply completing projects. We are learning how professionals work.

Every day students should leave the HVAC program becoming more:

SKILLED. SAFE. RELIABLE. EMPLOYABLE.

If you have questions or need extra help, I am available after school Monday-Friday

My Email address is: WILLIAMJONES@UAROCKET.ORG

UACHS Digital Portal: <https://sites.google.com/view/universal-audenreid-parent-por/home>