



## Heating, Ventilating, and Air Conditioning

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### Course Description:

- The Heating, Ventilating, and Air Conditioning program provides students an opportunity to learn about the home building industry. Participants master a variety of HVAC skills. Students apply their knowledge and skills by participating in the “students-built” house project. The course of study descriptions correlates to the modules of the NCCER national standards.



### Instructional Philosophy: Students will be given challenging real world projects and assignments typical of the Construction industry.

- Classroom and lab activities will include a variety of hands-on laboratory experiences, class discussion, open-ended problem solving, work-based learning, and project-based learning.
- Students will often work in teams but will be expected to complete individual assignments in relationship to the team’s work.
- Major projects will be presented to the class and in some situations to the construction professionals.
- Students will be required to draw upon academic skills in the areas of mathematics, science, language arts and technology.



### Class and Student Expectations:

- Student behavior in class will reflect all rules as outlined in the *Student Handbook*.
- Students will be expected to maintain an exemplary level of attendance.
- Students will be in room preparing for class when the tardy bell rings.
- Students should be dressed in professional program attire. Students who are not dressed in uniform will not be permitted to participate in the practical aspect of class for that day.



### Course Standards or Goals:

- Students will participate in the Young American student-built house project.
- Students will participate in SkillsUSA state and National Level of competition.
- Perform to industry standards
- Students will uphold a professional work ethic
- Observe all established safety standards
- Students will work towards completion of NCCER module certifications

- Students will work towards other state and national trade-specific certifications as made available.
- Course achievers attain articulation with Montgomery College and other apprenticeship training programs.
- Course completers gain knowledge and skills which qualify them for entry-level trade positions.



**Major Course Projects and Assignments: See “Course Projects and Assignments” section, attached.**



**Assessment and Grading Plan:**

- Teachers will assess and reassess student learning in a variety of ways over time.
- The report card grade will remain a letter grade.
- Teachers will record grades with the most precision appropriate for the task/assessment (e.g. percentages, points earned, plusses and minuses).
- Teachers will assign a grade no lower than 50% to a task/assessment that meets minimum standards.
- Teachers will establish due dates and deadlines.
- Work turned in after the due date and prior to the deadline may be dropped no more than one letter grade or 10% of the grade.
- Work not attempted and/or not submitted by the deadline will be recorded as a “0.”



**Grading Scale:**

The *MARKING PERIOD GRADE* reflects the percentage of mastery/attainment of the objectives for class work in the student’s program at Thomas Edison High School of Technology, including presentations, projects, other assignments, and assessments, as well as adherence to professional/industry standards. The following MCPS grading scale will be used:

- |                       |                       |
|-----------------------|-----------------------|
| • <b>90 – 100 = A</b> | • <b>60 – 69 = D</b>  |
| • <b>80 – 89 = B</b>  | • <b>Below 59 = E</b> |
| • <b>70 – 79 = C</b>  |                       |



**Components of Quarterly Carpentry Grades:**

**50% DEMONSTRATION OF HANDS-ON SKILLS**

- Skill in the use of HVAC trade tools and procedures
- *NCCER* Performance Profile Tasks and other hands-on projects

- Participation in the Young American student-built house project
- Consistent observation of Carpentry program safety rules and standards

## 25% UNIT TESTS

- Introduction to safety Test
- Sheet Metal Test
- Introduction to HVAC Test
- Trade Mathematics Test
- Basic Electricity Test
- Introduction to Heating Test
- Introduction to cooling Test
- Introduction to Air Distribution Systems Test
- Basic Copper and Plastic Piping Practices Test
- Soldering and Brazing Test
- Basic Carbon Steel Piping Practices Test

## 25% QUIZZES

- Math Warm-ups
- Reading and Writing assignments
- Class Binder and Agenda Book assignments
- Quizzes and Tests (Non *NCCER*)



### Policy for Re-Doing Work:

Re-teaching occurs when teachers or students determine that students are not meeting learning goals. The teacher determines the method and schedule for re-teaching. The teacher identifies reassessment opportunities before the original task / assessment occurs. When these opportunities occur, the teacher will provide only one reassessment opportunity per task/assessment. When tasks/assessments are reassessed, they may be reassessed partially, entirely, or in a different format. The reassessment grade replaces the original grade.

- **Only one opportunity for re-taking tests or re-doing work is offered for each assignment, except as noted below.**
- **The following tasks / assessments which indicate a final measure of learning may *not* be reassessed, except as noted below:**
  - End-of-course or semester exams
  - Assessments which end an instructional unit or period of study
  - Final research papers, reports, or essays
  - Culminating projects or performances
  - Days missed at the Young America student-built house project

- **NOTE: *NCCER* Module Exams may be re-taken as often as necessary for the student to earn certification. When a student successfully passes a re-taken module exam, the maximum score will be 70%.**

**I have read and understand the expectations and syllabus:**

**Parent Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Student Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_