

NEW HORIZONS CAREER AND TECHNICAL EDUCATION CENTER  
School Year 2020 - 2021

Class Syllabus - CTE Center –Woodside Lane Campus

INSTRUCTOR: Lester DeBerry

EMAIL: [LESTER.DEBERRY@NHREC.ORG](mailto:LESTER.DEBERRY@NHREC.ORG)

PHONE: 757 874-4444 EXT HVAC 5543 or Front Office Ext 5509

BOOKS: NCCER PEARSON

- I. CORE CURRICULUM – Introductory craft skills 5<sup>th</sup> ed.
- II. HEATING, VENTILATING, AND AIR CONDITIONING Level one 4th ed.
- III. HEATING, VENTILATING, AND AIR CONDITIONING Level two 4th ed.

OBJECTIVE:

- I. OSHA SAFETY REQUIREMENTS
- II. EPA 608 CERTIFICATION( Type I, Type II, Type III, Universal and 410 A)
- III. ELECTRICAL THEORY ( ampage, resistance, OHM Law, circuit parallel and series, line voltage and control voltage, single and three phase, and others)
- IV. MECHANICAL THEORY- BASIC REFRIGERANT CYCLE ( components operations, terminology, superheat, sub cool, states of matter; liquid to gas vapor and others)
- V. PIPING ( gas line black iron, soft soldering, silver soldering, flaring and swaging copper pipe, flex pipe and others)
- VI. NATIONAL MECHANICAL CODE ( DPOR requirements and testing for journeyman and master tradesman)
- VII. BASIC HAND TOOLS AND MATH ( electrical, pipe fitting, mechanical and others)
- VIII. MISC ( self-study, additional theory, personal protective equipment, projects)
- IX. TEST EVERY MONDAY, QUIZ TWICE WEEKLY AND THREE PROJECTS OVER THE SCHOOL YEAR
- X. (TBD)

**NOTE: weekly assignments will be emailed every Friday for the following week.**

## WEEK ONE: 07 SEPT 2020 TO 11 SEPT 2020

- I. Introduction: Tell us something about you, nothing personal, and give three goals you would like to achieve. Basic hand tools, OSHA requirement, PPE lecture 08 Sept. WEEK ONE TEST
- II. Introduction to basic refrigerant diagram 08 Sept. And 09 Sept. 2020
- III. Write two to three paragraphs describing why you chose this course and what you hope to learn from this course. Due Monday 14 Sept. 2020
- IV. Create a google doc explaining the requirements for taking the Journeyman exam (Go to DPOR Website) Be as detailed as possible. Due Monday 14 Sept. 2020
- V. Look up OSHA requirements for reporting to the Department of Labor concerning injury and death on job related incidents. Provide explanation and forms. Due on 14 Sept. 2020.
- VI. Lecture on math ( Fractions and OHM Law) 09 Sept. 2020
- VII. Math Quiz on 10 Sept. 2020 (basic fractions (reading ruler and OHM Law)

## WEEK TWO: 14 SEPT 2020 TO 18 SEPT 2020

- I. Introduction to Principles of Air Flow (CFM, Area formulas, Circumference, Pythagorean Theorem, Basic Rules of Algebra) Lecture on 14 Sept 2020.
- II. Explain how Air Flow Related to Principle of Air Conditioning and Basic Refrigerant Diagram (Heat Transfer Rule of Thumbs) on 14 Sept 2020
- III. Self-Study on 15 Sept 2020 and 16 Sept 2020
  1. Research how air flow relates to BTUs
  2. Convert BTUs to tonnage
  3. What CFM is needed for 2-ton, 3-ton, 4 ton and 5-ton air conditioning equipment.
  4. How calculate required CFM for the tonnage stated above
  5. OSHA safety research and write CFRs for confine space, hazardous substance lead, asbestos, gas free space, fall protection and then write three the safety requirements for each. Due on 21 Sept 2020

IV. Introduction of hand tools for use to calculate CFM, FPM, Stretch Out. 17  
Sept 2020