

Skilled Mechanical Crafts (2023)

The following competency is to be taught within ALL technical level courses offered in your school's approved pathway ⁰

- 1 Demonstrate an understanding of industry standards for personal safety including the safe use of tools, equipment, and hazardous materials.** ^{0.1}

Benchmark 1 ¹

- 1 Utilize technology resources to investigate training, education and careers available in the skilled mechanical trades fields of construction.** ^{1.1}
- 2 Demonstrate proper use of basic hand and power tools used in HVAC, Plumbing, and Electrical Trades.** ^{1.2}
- 3 Identify the various types of drawings/ blueprints/schematics used in HVAC, Plumbing, and Electrical Trades, including knowledge of terms, components, and symbols.** ^{1.3}
- 4 Describe various types of heating and cooling systems, including the pros, cons and applications of each.** ^{1.4}
- 5 Explain the basic principles of heating, ventilating, and air conditioning.** ^{1.5}
- 6 Explain the basic principles of a refrigeration system.** ^{1.6}
- 7 Identify & describe the major components of a refrigeration system and the roles they take in the refrigeration process.** ^{1.7}
- 8 Correctly measure, cut, ream, join, groove and/or thread plastic piping/tubing.** ^{1.8}
- 9 Perform soldering and brazing applications.** ^{1.9}
- 10 Demonstrate knowledge of how electrical circuits work.** ^{1.10}
- 11 Demonstrate the procedure for safely using a clamp-on ammeter and a voltage tester.** ^{1.11}
- 12 Compute branch circuit loads and explain installation requirements.** ^{1.12}

13 Demonstrate the ability to properly ground electrical circuits according to codes. 1.13

14 Research the licensure requirements and certification opportunities for the HVAC, Plumbing, and Electrical Trades. 1.14

15 Develop a materials list for the construction of a project. 1.15

16 Demonstrate the ability to read a ruler and calculate square feet and cubic feet. 1.16