

# Skilled Mechanical Crafts (2023)

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

- 1 Demonstrate an understanding of industry standards for personal safety including the safe use of tools, equipment, and hazardous materials.** <sup>0.1</sup>

## Benchmark 1 <sup>1</sup>

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

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

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

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

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