Kansas CTE: Construction and Design Pathway

Sheet Metal Technology (2023)

The following competencies are to be taught within ALL application 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
	2 **Demonstrate Time Management Skills** 0.2
	3 **Create and utilize employment documents including a resume and portfolio.** 0.3
	4 **Demonstrate job seeking and interview skills.** 0.4
	5 **Understand and respond to performance reviews.** 0.5
Shop and Machine-Specific Safety 1	1 **Safely utilize and maintain tools common to the sheet metal trade.** 1.1
	2 **Describe types and thicknesses of sheet metal.** 1.2
	3 **Explain and identify accident causes in the sheet metal industry.** 1.
	4 **Describe safe working attire in the sheet metal industry.** 1.4
	5 **Demonstrate safe use of tools and equipment.** 1.5
Sheet Metal Tools and Materials 2	1 **Describe terms and definitions related to sheet metal fabrication and layout.** 2.1
	2 **Discuss the sheet metal forming equipment and their applications.** 2.2
Print Reading, Measuring, and Math Skills 3	1 **Demonstrate print reading skills including the interpretation of plans, elevations, schedules, and details.** 3.1
	2 **Identify the three basic types of layout: parallel line, radial line, and triangulation.** 3.2
	3 **Utilize a tape measure to obtain correct measurements for a ductwork detail.** 3.3
	4 **Calculate circumference and area of a circle.** 3.4
	5 **Demonstrate architect's scale use in sheet metal.** 3.5
	6 **Describe measuring tools.** 3.6
Sheet Metal Layout and Fabrication 4	1 **Discuss terms and definitions.** 4.1

	2 Use various sheet metal equipment to build projects. 4.2
	3 Use various sheet metal hand tools. 4.3
	4 Layout and use the squaring metal shear to cut sheet metal. 4.4
	5 Fasten sheet metal using different bonding methods (e.g. adhesives, fasteners or spot welding). 4.5
	6 Layout and fabricate a basic joint of ductwork (e.g. Rivets and Fasteners) 4.6
	7 Layout and fabricate basic sheet metal fittings. 4.7
	8 Describe the different seams commonly used for ductwork and explain the advantages of each. 4.8
	9 Produce sheet metal/duct work project utilizing concepts and skills. 4.9
Sheet Metal Notching and Use of Forming Machines 5	1 Fasten sheet metal together using the Snap-lock machine and the Pittsburg machine. 5.1
	2 Fasten sheet metal together using appropriate methods consisting of the finger break, rolls, easy edger, drive turner and notching the sheet metal for the various joints. 5.2
	3 Cut various lengths of “S” clips and build drives to connect the fittings together. 5.3
Codes 6	1 Examine the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) guidelines for sheet metal construction. 6.1
	2 Examine the International Mechanical Code (IMC) for the standards used in the construction of sheet metal ductwork. 6.2
	3 Examine the Air Conditioning Contractors of America (ACCA) Manual D to identify the concepts of airflow, static pressure, total pressure, total equivalent length (TEL) associated with each fitting used in the construction trade. 6.3