Kentucky CTE

Engineering Technology: Manufacturing Engineering

Apply the design process involving MAE1	a problem identification, conceptualization, and research MAE1A
	b refinement of preliminary ideas, design analysis, development and implementation MAE1B
	c detailed documentation of final design, optimization and final presentation. MAE1C
Identify the basic processes, systems, designs, and materials used in manufacturing. MAE2	2 Identify the basic processes, systems, designs, and materials used in manufacturing. MAE2
Identify product families. MAE3	3 Identify product families. MAE3
Conduct model documentation as the process of recording details such as size, material development process that describes a model for the purpose of communication of ideas. MAE4	4 Conduct model documentation as the process of recording details such as size, material development process that describes a model for the purpose of communication of ideas. MAE4
Apply the principles of design for manufacturing enabling the efficient and effective production of products. MAE5	5 Apply the principles of design for manufacturing enabling the efficient and effective production of products. MAE5
Distinguish the difference between cu fu production. MAE6	6 Distinguish the difference between custom and industrial furniture production. MAE6

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Demonstrate safe and appropriate use of MAE7	**a tools, machines, and materials in materials and processes technology.** MAE7A
Select and defend a material for use in a product, explaining material properties and characterization, based upon manufacturing processes, chemical composition, internal defects, temperature, previous loading, dimensions and other factors. MAE8	**8 Select and defend a material for use in a product, explaining material properties and characterization, based upon manufacturing processes, chemical composition, internal defects, temperature, previous loading, dimensions and other factors.** MAE8
Demonstrate an understanding of mechanisms and how they relate to manufacturing systems. MAE9	**9 Demonstrate an understanding of mechanisms and how they relate to manufacturing systems.** MAE9
Apply the principles of robotics to automated systems. MAE10	**10 Apply the principles of robotics to automated systems.** MAE10
Integrate control systems and equipment with production and production support mechanisms. MAE11	**11 Integrate control systems and equipment with production and production support mechanisms.** MAE11
Demonstrate proficiency in the set-up and operation of manual and CNC wood and/or metalworking machines. MAE12	**12 Demonstrate proficiency in the set-up and operation of manual and CNC wood and/or metalworking machines.** MAE12
Demonstrate proficiency in computer-aided drafting/computer aided manufacturing (CAD/CAM) software. MAE13	**13 Demonstrate proficiency in computer-aided drafting/computer aided manufacturing (CAD/CAM) software.** MAE13