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 custom and industrial furniture production. MAE6	6 Distinguish the difference between custom and industrial furniture production. MAE6

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