

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