Colorado CTE

Manufacturing Production (2015): Grades 9, 10, 11, 12, Higher Education

Adopted 2015

Understand the manufacturing process and systems common to welding and related industries. MPRP.01

01. **Identify skills to pursue careers as interpretation and layout of welded and assembled-part prints, mechanical bonding, joining, cohesive bonding, adhesive bonding and mechanical fastening.** MPRP.01.01

    a. Demonstrate the planning and layout operations used in welding processes. MPRP.01.01.A

    b. Show how materials can be processed through the use of welding tools and equipment. MPRP.01.01.B

    c. Demonstrate various types of welding assembly process. MPRP.01.01.C

    d. Demonstrate finishing processes and identify the difference between various types of finishing materials used in the manufacture of welded parts and products. MPRP.01.01.D

    e. Understand the purposes and processes of inspection and quality control in welding manufacturing process. MPRP.01.01.E

    f. Demonstrate various welding systems that require standard hand and machine tools. MPRP.01.01.F

    g. Demonstrate various automated welding systems, welding design for manufacturing, flexible manufacturing systems and material resource planning. MPRP.01.01.G

    h. Demonstrate various joining or combining processes, including welding processes used in manufacturing, maintenance and repair. MPRP.01.01.H

    i. Understand how a manufacturing company is organized and the elements of welding production management. MPRP.01.01.I

Understand the manufacturing process and systems common to the machine tools and materials forming inc

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01. **Identify skills to pursue careers as interpretation and layout of machined and formed-part prints; the cutting, shaping, fastening and finishing of machine tools; and casting, forging, molding, cold forming and shearing processes.** MPRP.02.01

    a. Demonstrate the planning and layout operations used in machine tooled and materials forming process. MPRP.02.01.A

b. Understand and demonstrate how materials can be processed through the use of machine tools, such as milling, drilling, turning and shaping machines and forming equipment such as dies, presses and rolls. MPRP.02.01.B

c. Demonstrate the use of various types of machine and forming assembly processes, such as flow, pressure, cold and adhesive bonding and mechanical fasteners. MPRP.02.01.C

d. Demonstrate finishing processes and the differences between various types of finishing materials used in the manufacturing and machined and formed parts and products. MPRP.02.01.D

e. Interpret the purposes and processes of inspection and quality control in machining and forming manufacturing processes. MPRP.02.01.E

f. Demonstrate the use of various machining and forming manufacturing systems that require standard hand and machine tools. MPRP.02.01.F

g. Demonstrate the use of various machining and forming automated manufacturing systems, tool design, design for manufacturing, flexible manufacturing systems and materials resource planning. MPRP.02.01.G

h. Interpret the development of emerging machining and forming technology systems. MPRP.02.01.H

i. Demonstrate the operation and functions of machine tools in production and prototype work. MPRP.02.01.I

j. Demonstrate the use of industrial forming processes and their application to specific types of materials. MPRP.02.01.J

k. Understand how a manufacturing company is organized and the elements of a machining and forming production management system. MPRP.02.01.K