Colorado CTE

# Design and Pre-Construction (2015): Grades 9, 10, 11, 12, Higher Education

Adopted 2015

**Technical Skills: Use the technical knowledge and skills required to pursue the targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster.** DPCP.01

01. **Read, interpret, and use technical drawings, documents, and specifications to plan a project.** DPCP.01.01
    a. Interpret drawings used in project planning. DPCP.01.01.A
    b. Describe written standards and those specifications that apply. DPCP.01.01.B
    c. Recognize how specifications and standards are arranged for proper access. DPCP.01.01.C
    d. Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work. DPCP.01.01.D

02. **Use and maintain appropriate tools, machinery, equipment, and resources to accomplish project goals.** DPCP.01.02
    a. Select tools, machinery, equipment and resources that match requirements of the job. DPCP.01.02.A
    b. Identify sources of information concerning state of the art tools, equipment, materials, technologies and methodologies. DPCP.01.02.B
    c. Demonstrate use of tools, machinery, equipment and other resources commonly used in design and construction. DPCP.01.02.C

03. **Develop technical drawings drafted by hand and computer generated plans to design structures.** DPCP.01.03
    a. Identify client requirements. DPCP.01.03.A
    b. Use communication skills and strategies to work effectively with people (including clients, team members, and others). DPCP.01.03.B
    c. Draw and sketch by hand to communicate ideas effectively. DPCP.01.03.C
    d. Learn to read and produce technical drawings, understanding the significance of each line in a drawing. DPCP.01.03.D

04. **Employ appropriate representational media to communicate concepts and design.** DPCP.01.04
    a. Convey graphic information using multi dimensional drawings. DPCP.01.04.A

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b. Build models using referenced drawings and sketches. DPCP.01.04.B

c. Utilize computer technology when communicating concepts and designs. DPCP.01.04.C

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**05. Employ principles, conventions, standards, applications and restrictions pertaining to the manufacture and use of construction materials, components and assemblies to incorporate into project design.** DPCP.01.05

a. Select building materials and assemblies upon evaluation that meet project specifications. DPCP.01.05.A

b. Use appropriate combinations of building materials and components that satisfy the requirements of building programs. DPCP.01.05.B

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**06. Apply basic organizational, spatial, structural and constructional principles to the design of interior and exterior space so that design plans are effective.** DPCP.01.06

a. Develop design alternatives that address a given problem. DPCP.01.06.A