Connecticut CTE

Computer Aided Drafting and Design (Grades 9-12)

Computer Aided Drafting and Design

A Computer Aided Drafting and Design CADD

1. Demonstrate an understanding of the historical and current events related to CADD and the impact on society. CADD.01
   - a. Develop a timeline showing important periods that have significance to CADD and explain the impact on society. CADD.01.01
   - b. Evaluate current events that have relevance to process digital information. CADD.01.02
   - c. Describe the development of graphic language in a digital age. CADD.01.03
   - d. Explain the significance of the development Computer Aided Drafting and Design had on society. CADD.01.04
2. Analyze the use of current CADD design technology. CADD.02
   - a. Apply conventional Computer Aided Drafting and Design processes and procedures accurately, appropriately, and safely. CADD.02.01
   - b. Describe physical objects as geometric entities.* CADD.02.02
   - c. Describe and demonstrate the process of using a mechanical or electronic caliper accurately as required by the design intent.*(A2) CADD.02.03
   - d. Describe and demonstrate the use of graphic communication skills through sketching.*(A3) CADD.02.04
   - e. Evaluate and select appropriate method of communication for a given problem.* CADD.02.05
   - f. Send and access information through a network.*(A4) CADD.02.06
   - g. Express a design of an object as a 3D model.*(A5) CADD.02.07
   - h. Export and import images/files in a variety of file formats*(A6) CADD.02.08
   - i. Evaluate the choice and placement of dimensions, notes and annotations to clearly communicate design intent.*(A7) CADD.02.09
   - j. Revise a design and update finished drawings appropriately.*(A8) CADD.02.10
   - k. Identify basic geometric elements (e.g., line, circle, rectangle, sphere, and cube).*(A9) CADD.02.11
   - l. Describe objects as geometric entities.*(A1) CADD.02.12
   - m. Describe and apply the following basic geometric concepts to building 3D models: tangent and parallel concentric.*(A10) CADD.02.13
3. Utilize measurement and annotation systems as they apply to CADD technology design. CADD.03
   - a. Explain how the various measurement systems are used in CADD drawings. CADD.03.01
   - b. Describe the measurement standards used in the manufacturing industry. CADD.03.02

c Determine the proper dimensioning styles for a variety of applications. CADD.03.03

d Apply dimensioning to various objects and features. CADD.03.04

e Edit a dimension by using various editing methods. CADD.03.05

f Demonstrate the processes of lettering and text editing. CADD.03.06

g Develop drawings using notes and specifications. CADD.03.07

h Demonstrate the methods of creating a title block. CADD.03.08

4 Identify, describe, and utilize the basic hardware and operating systems used in CADD. CADD.04

a Identify and describe various types of hardware and software.*(B11) CADD.04.01

b Identify and describe the purpose of operating system components.* (B12) CADD.04.02

c Define and apply computer terminology*(B13) CADD.04.03

d View file names of a storage device.*(C14) CADD.04.04

e Store, copy, move, and retrieve information to/from various drives.* (C15) CADD.04.05

f Rename and backup files*C16) CADD.04.06

g Identify the hardware requirements of a given CADD software package. CADD.04.07

5 Utilize Proper projection techniques to develop orthographic and pictorial drawings. CADD.05

a Understand the commands and concepts necessary for producing drawings through traditional or computer-aided means. CADD.05.01

b Understand the orthographic projection process for developing multi-view drawings. CADD.05.02

c Differentiate the various techniques for viewing objects. CADD.05.03

d Use the concepts of geometric construction in the development of design drawings. CADD.05.04

f Create orthographic, isometric, section, and auxiliary views.(E25) CADD.05.06

g Explain the Cartesian Coordinate System.*(E20) CADD.05.07

h Describe the process for setting and editing drawing elements.*(E21) CADD.05.08

i Create and edit line types, colors and layers/levels.*(E22) CADD.05.09

j Create and edit basic geometry.*(E23) CADD.05.10

k Place and edit text and fonts.*(E24) CADD.05.11

l Explain and demonstrate the process for creating orthographic, isometric, section views, and auxiliary view.* CADD.05.12

m Place and edit dimensions.*(E26) CADD.05.013

n Generate a 2-D multi-view drawing.*(E27) CADD.05.14

o Generate a pictorial drawing.*(E28) CADD.05.15

p Scale and print hard copy of an output device.*(E29) CADD.05.16

q Explain the use and need for scaled drawings.*(E30) CADD.05.17

6 Demonstrate use and application of alternate view applications and functions. CADD.06

a Identify the function of alternate views. CADD.06.01

b Demonstrate the use of cutting planes to clarify hidden features of an object. CADD.06.02

c Create and edit construction planes through reference geometry.* (G35) CADD.06.03

d Generate/modify geometric components on construction planes.* CADD.06.04

e Create a 2-D drawing from a 3-D model.*(G34) CADD.06.05

f Create a 3-D model from a 2-D drawing.*(G35) CADD.06.06

7 Create assemblies and views in 3-D format. CADD.07

a Create an assembly in 3-D geometry.*(F31) CADD.07.01

b Create an exploded view of a 3-D assembly.*(F32) CADD.07.02

8 Explain and Utilize the concepts of sketching and the sketching process used in preliminary design and development. CADD.08

a Produce proportional two- and three-dimensional sketches and designs. CADD.08.01

b Use sketching techniques as they apply to a variety of objects. CADD.08.02

c Use freehand graphic communication skills to represent conceptual ideas, analysis, and design concepts. CADD.08.03

d Explain the purpose of sketching and how it applies to design. CADD.08.04

9 Identify various symbols to interpret and read technical drawings. CADD.09

a Interpret basic views and dimensions in a working drawing.*(D17) CADD.09.01

b Identify geometric tolerance symbols.*(D18) CADD.09.02

c Interpret drawings, pictures, and symbols.*(D19) CADD.09.03

10 Maintain a portfolio to document knowledge, skills, materials and experience in CADD. CADD.10

a Gather educational and work highlights to include in portfolio. CADD.10.01

b Organize and provide a compact disc, web site and/or other digital media for use in demonstrating knowledge, skills, and experience. CADD.10.02

c Prepare and conduct effective portfolio oral presentation(s). CADD.10.03