CADD—TES STANDARDS

HIGH SCHOOL

DEMONSTRATE AN UNDERSTANDING OF THE HISTORICAL AND CURRENT EVENTS RELATED TO CADD AND THE IMPACT ON SOCIETY.

- Develop a timeline showing important periods that have significance to CADD and explain the impact on society.
- Evaluate current events that have relevance to process digital information.
- Describe the development of graphic language in a digital age.
- Explain the significance of the development Computer Aided Drafting and Design had on society.

ANALYZE THE USE OF CURRENT CADD DESIGN TECHNOLOGY.

- Apply conventional Computer Aided Drafting and Design processes and procedures accurately, appropriately, and safely.
- Describe physical objects as geometric entities.
- Describe and demonstrate the process of using a mechanical or electronic caliper accurately as required by the design intent.
- Describe and demonstrate the use of graphic communication skills through sketching.
- Evaluate and select appropriate method of communication for a given problem.
- Send and access information through a network.
- Express a design of an object as a 3D model.
- Export and import images/files in a variety of file formats.
- Evaluate the choice and placement of dimensions, notes and annotations to clearly communicate design intent.
- Revise a design and update finished drawings appropriately.
- Identify basic geometric elements (e.g., line, circle, rectangle, sphere, and cube).
- Describe objects as geometric entities.
- Describe and apply the following basic geometric concepts to building 3D models: tangent and parallel concentric.

UTILIZE MEASUREMENT AND ANNOTATION SYSTEMS AS THEY APPLY TO CADD TECHNOLOGY DESIGN.

- Explain how the various measurement systems are used in CADD drawings.
- Describe the measurement standards used in the manufacturing industry.
- Determine the proper dimensioning styles for a variety of applications.
- Apply dimensioning to various objects and features.
- Edit a dimension by using various editing methods.
- Demonstrate the processes of lettering and text editing.
- Develop drawings using notes and specifications.
- Demonstrate the methods of creating a title block.

IDENTIFY, DESCRIBE, AND UTILIZE THE BASIC HARDWARE AND OPERATING SYSTEMS USED IN CADD.

- Identify and describe various types of hardware and software.
- Identify and describe the purpose of operating system components.
- Define and apply computer terminology.
- View file names of a storage device.
- Store, copy, move, and retrieve information to/from various drives.
- Rename and backup files.
- Identify the hardware requirements of a given CADD software package.

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UTILIZE PROPER PROJECTION TECHNIQUES TO DEVELOP ORTHOGRAPHIC AND PICTORIAL DRAWINGS.

- Understand the commands and concepts necessary for producing drawings through traditional or computer-aided means.
- Understand the orthographic projection process for developing multi-view drawings.
- Differentiate the various techniques for viewing objects.
- Use the concepts of geometric construction in the development of design drawings.
- Create orthographic, isometric, section, and auxiliary views.
- Explain the Cartesian Coordinate System.
- Describe the process for setting and editing drawing elements.
- Create and edit line types, colors and layers/levels.
- Create and edit basic geometry.
- Place and edit text and fonts.
- Explain and demonstrate the process for creating orthographic, isometric, section views, and auxiliary view.
- Place and edit dimensions.
- Generate a 2-D multi-view drawing.
- Generate a pictorial drawing.
- Scale and print hard copy of an output device.
- Explain the use and need for scaled drawings.

DEMONSTRATE USE AND APPLICATION OF ALTERNATE VIEW APPLICATIONS AND FUNCTIONS.

Identify the function of alternate views.

- Demonstrate the use of cutting planes to clarify hidden features of an object.
- Create and edit construction planes through reference geometry.
- Generate/modify geometric components on construction planes.
- Create a 2-D drawing from a 3-D model.
- Create a 3-D model from a 2-D drawing.

CREATE ASSEMBLIES AND VIEWS IN 3-D FORMAT.

- Create an assembly in 3-D geometry.
- Create an exploded view of a 3-D assembly.

EXPLAIN AND UTILIZE THE CONCEPTS OF SKETCHING AND THE SKETCHING PROCESS USED IN PRELIMINARY DESIGN AND DEVELOPMENT.

- Produce proportional two- and three-dimensional sketches and designs.
- Use sketching techniques as they apply to a variety of objects.
- Use freehand graphic communication skills to represent conceptual ideas, analysis, and design concepts.
- Explain the purpose of sketching and how it applies to design.

IDENTIFY VARIOUS SYMBOLS TO INTERPRET AND READ TECHNICAL DRAWINGS.

- Interpret basic views and dimensions in a working drawing.
- Identify geometric tolerance symbols.
- Interpret drawings, pictures, and symbols.

MAINTAIN A PORTFOLIO TO DOCUMENT KNOWLEDGE, SKILLS, MATERIALS AND EXPERIENCE IN CADD.

- Gather educational and work highlights to include in portfolio.
- Organize and provide a compact disc, web site and/or other digital media for use in demonstrating knowledge, skills, and experience.
- Prepare and conduct effective portfolio oral presentation(s).