Introduction to Drafting Design

Introduction to Drafting Design is a one-credit course that serves as an introduction to the drafting design technology field. It provides essential information that builds a strong foundation for the entire program. Emphasis is placed on student orientation, safety, tools and procedures, geometric construction, sketching, dimensioning practices, visualization, and orthographic projection concepts. Computer-Aided Drafting (CAD) functions and techniques using CAD software applications are introduced. Upon successful completion of this course, students are able to utilize tools and interpret basic drafting standards to complete a multi-view drawing. This entry-level course is a prerequisite to all other drafting design technology classes.

Career and technical student organizations are integral, cocurricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

Orientation

Students will:

1. Relate the importance of drafting design technology in today’s technological work force.

Safety

2. Demonstrate the safe handling of drafting design tools according to classroom and environmental practices, procedures, and regulations.

Applied Mathematics for Drafting

3. Demonstrate mathematics skills related to drafting design, including basic fractions, scale reading, and conversion of customary to metric and metric to customary measurements.
   - Solving higher-order mathematics applications
     Example: calculating thread depth and pitch
   - Calculating architectural computations
     Examples: area, rise and run

Drafting Instruments and Techniques

4. Demonstrate the use of drawing media and drafting instruments.
   Examples: architectural scales, graphite, lead holders
   - Utilizing computer software for drafting applications
   - Reproducing drafting originals
     Examples: print, plot, blueprint, photocopy
Lettering and Drawing Techniques

5. Demonstrate drafting techniques for freehand sketching, lettering, geometric figures, and the alphabet of lines to create a drawing.

Multi-View Drawings

6. Construct basic multi-view, two-dimensional drawings, including visualizing principle views, creating third-angle projections, selecting proper drawing scale, and organizing layout of primary views.

Basic Dimensioning

7. Apply dimensions and notes to multi-view drawings, utilizing the American National Standards Institute (ANSI) dimensioning standards and decimal, metric, or dual dimensioning.

Fundamentals of Computer-Aided Drafting

8. Utilize CAD software to generate a multi-view drawing using appropriate file management techniques, basic drawing commands, and basic dimensioning techniques.
   Examples: file management techniques—create, set up, and save files
   basic drawing commands—line, ellipse, circle, scale
   basic dimensioning techniques—linear, angular

   • Utilizing CAD software and computer to print a multi-view drawing