

Architectural Drafting

Description

The NYC SkillsUSA Architectural Drafting contest is developed to evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of architectural drafting.

Eligibility

Open to active NYC SkillsUSA members enrolled in programs with architectural drafting as the occupational objective.

Clothing Requirements

- White polo shirt (plain or with SkillsUSA or SkillsUSA NY monogram) OR white dress shirt with a plain black tie (no pattern) or a SkillsUSA black tie OR business-like white collarless blouse or white blouse with a small plain collar.
- Black Dress Slacks (accompanied by black dress socks or black or skin-tone seamless hose) or black dress skirt (knee-length, accompanied by black or skin-tone seamless hose).
- Black leather shoes that are not backless or open toe

Equipment and Materials

- 1. Supplied by NYC chair/committee:**
 - a. Desktop computer with monitor. Software will be pre-installed with Autodesk 2024 AutoCAD and Revit.
 - b. Colored Printer
- 2. Supplied by contestant:**
 - a. Students may bring published reference books, tables and software manuals.
 - b. All competitors must create a one-page resume.

Scope of the Competition

The contest will assess skill performance by providing a hand sketch and computer-generated problem that may be solved using either board drafting or CAD.

1. Preparation of drawings will include proper dimensions and line type selection according to current drafting standards.
2. During the contest, the contestants will work independently; no assistance from other contestants, instructors or observers is allowed.
3. Limited technical assistance for computer or software malfunction may be given by appropriate manufacturers' representatives or members of the technical committee.
4. Contestants will each be given the same amount of time to accomplish the problem. Everyone will begin at the same time and take the required lunch break, and no one will be allowed to work past the contest conclusion. (Additional time may be granted for equipment malfunction.)
5. Each contestant will be responsible for establishing plotting procedures at the computer

and for plotting his or her work to a plot file on a USB flash drive. Students must have a program on their computer to allow them to plot to a PDF if the program of choice does not allow this plotting option.

6. Criteria to evaluate skill performance are general in nature and will be done from plotted drawings, manual drawings and sketches. Specific criteria will be based on the demonstration of competency in those elements of accuracy and productivity included in the contest problem.
7. Competencies to be demonstrated may be selected from the Standards and Competencies below.

STANDARDS AND COMPETENCIES

1. Demonstrate understanding of terms and principles used in the architectural profession

- 1.1. Define and use terms commonly used in the architectural profession.
- 1.2. Explain the application of geometric objects to building materials.
 - 1.2.1. Define the characteristics of an equilateral triangle and its application to Architecture.
 - 1.2.2. Define the characteristics of an isosceles triangle and its application to Architecture.
 - 1.2.3. Define the characteristics of a square and its application to architecture.
 - 1.2.4. Define the characteristics of a parallelogram and its application to architecture.
 - 1.2.5. Define the characteristics of an equilateral triangle and its application to architecture.
 - 1.2.6. Define the characteristics of a hexagon and its application to architecture.
 - 1.2.7. Define the characteristics of an octagon and its application to architecture.
 - 1.2.8. Define the characteristics of a circle and its application to architecture.

2. Interpret and apply conventional General Drafting Standards to architectural drafting situations

- 2.1. Define function of each line in the Alphabet of Lines.
- 2.2. Explain the graphical characteristics of each line.
 - 2.2.1. Visible/Object Lines: Thick solid lines that represent visible edges or contours of the part. Visible lines of floor plans are medium thickness (0.6 mm).
 - 2.2.2. Hidden Lines: Hidden lines should always touch where the visible feature starts or ends (0.3mm). Hidden lines may be omitted from drawings for clarity purposes.
 - 2.2.3. Section Lines: Section lines represent the area of the part that would be cut in a section view (0.3 mm).

- 2.3. Explain orthographic elevation projection.
 - 2.3.1. Architecturally, views are referred to as elevations.
 - 2.3.2. Roof plan is the top view and front elevation is the front view, etc.
 - 2.3.3. Elevations are oriented on site with reference to true north or building north.
- 2.4. Explain the terms and definitions used in detail drawings, working drawings and drafting.
- 2.5. Define and describe the components that comprise architectural drawings.
 - 2.5.1. Necessary multi-views
 - 2.5.2. Dimensional information
 - 2.5.3. Specified materials
 - 2.5.4. Revision block, title block and sheet size
 - 2.5.5. Drafter/reviewer names
 - 2.5.6. Enlarged views and sections showing detail
 - 2.5.7. General notes with construction information
 - 2.5.8. Schedules: doors, windows and room finishes
- 2.6. Define and describe the components that comprise architectural construction (working) drawings.

3. Develop a set of working drawings from a provided scenario with provided materials using competencies identified for drafting certification by the American Design Drafting Association

- 3.1. Produce multiview drawings with lines, curves, surfaces, holes, fillets, rounds, chamfers, run outs and ellipses.
- 3.2. Use standard drafting techniques to create section views to improve the visualization of new designs.
- 3.3. Clarify multiview drawings and facilitate the dimensioning of drawings.
- 3.4. Summarize and apply the principles and procedures for adding size information to a drawing according to standard dimensioning practices.
- 3.5. Draw and label site plans, floor plans, foundation plans, plumbing plans, mechanical plans, electrical plans and landscaping plans with elevations, sections, details, schedules and necessary multiviews.