

Architectural Drafting

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Test Type: The Architectural Drafting assessment is included in NOCTI's Teacher assessment battery. Teacher assessments measure an individual's technical knowledge and skills in a proctored proficiency examination format. These assessments are used in a large number of states as part of the teacher licensing and/or certification process, assessing competency in all aspects of a particular industry. NOCTI Teacher tests typically offer both a written and performance component that must be administered at a NOCTI-approved Area Test Center. Teacher assessments can be delivered in an online or paper/pencil format.

Revision Team: The assessment content is based on input from subject matter experts representing the following states: Florida, New Mexico, Pennsylvania, and Virginia.



15.1303- Architectural
Drafting and
Architectural CAD/CADD



Career Cluster -
Architecture and
Construction



17-3011.01- Architectural
Drafters

Written Assessment

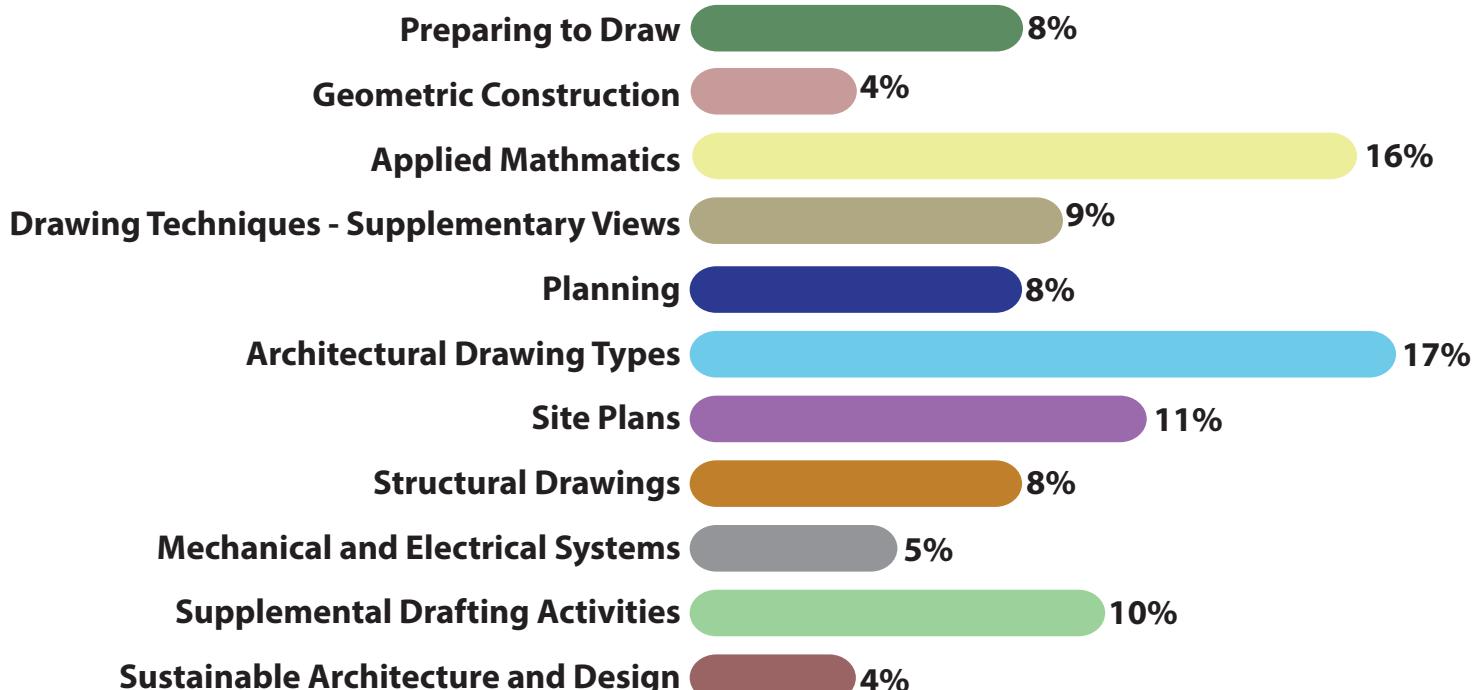
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

Administration Time: 3 hours

Number of Questions: 146

Number of Sessions: This assessment may be administered in one, two, or three sessions.

Areas Covered



Specific Standards and Competencies Included in this Assessment

Preparing to Draw

- Identify drafting tools and equipment (including CAD)
- Identify and select paper sizes/types, and determine scale and layout
- Identify various line types

Geometric Construction

- Construct and manipulate geometric elements
- Construct and manipulate lines, arcs, and angles

Applied Mathematics

- Demonstrate knowledge of basic mathematical operations
- Perform calculations involving fractions, decimals, and percents
- Demonstrate knowledge of geometry
- Demonstrate knowledge of trigonometry with respect to pitch, rise, and run
- Calculate measures, area, and volume
- Convert scales

Drawing Techniques - Supplementary Views

- Identify pictorial drawings (e.g., perspective)
- Demonstrate knowledge of schematic diagrams
- Demonstrate knowledge of orthographic drawings
- Place dimensions and notes



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Specific Standards and Competencies (continued)

Planning

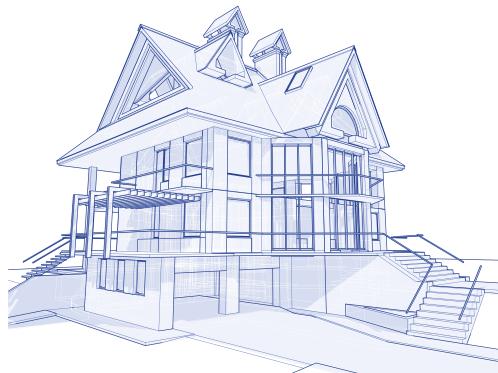
- Examine spatial relationships
- Identify types of house design (e.g., duplex, split level, ranch)
- Determine client needs
- Identify common construction material, properties, and use

Architectural Drawing Types

- Identify architectural terms and symbols
- Identify and develop roof types
- Identify and develop floor plans
- Develop basement and foundation plans
- Identify kitchen and bath arrangements
- Develop interior and exterior elevations
- Develop a wall and a building section
- Draw architectural details

Site Plans

- Draw and dimension site plans
- Interpret landscape plans
- Interpret contours and topographical profiles
- Identify setbacks and easements
- Identify above- and below-ground utilities



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Specific Standards and Competencies (continued)

Structural Drawings

- Draw structural details
- Identify framing and structural components

Mechanical and Electrical Systems

- Identify electrical terms, symbols, and components
- Identify plumbing terms, symbols, and components

Supplemental Drafting Activities

- Draw cover sheet and title block information
- Develop schedules
- Describe responsibilities of related parties (e.g., design professional, contractor)
- Identify basic ADA accessibility compliance regulations
- Recognize ordinances and local building codes

Sustainable Architecture and Design

- Identify various rating systems (e.g., LEED, R-Value)
- Recognize recyclable and “green” building materials and systems

Sample Questions

Bisecting a line creates a second line that is _____ to the original line.

- A. parallel
- B. tangent
- C. perpendicular
- D. horizontal

What is the minimum landing depth required for an entrance door to meet ADA regulations?

- A. 24 inches
- B. 36 inches
- C. 48 inches
- D. 60 inches

A landscape plan uses much of the same information as a _____ plan.

- A. structural
- B. plumbing
- C. site
- D. floor

In a right triangle, the tangent of an acute angle is equal to the

- A. opposite side divided by the hypotenuse
- B. adjacent side divided by the hypotenuse
- C. adjacent side divided by the opposite side
- D. opposite side divided by the adjacent side

Where would a stringer be used?

- A. at a door frame
- B. on a roof truss
- C. at a stair
- D. as part of a joist

Performance Assessment

NOCTI performance assessments allow individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

Administration Time: 4 hours and 15 minutes

Number of Jobs: 3

Areas Covered:

17% Construction Components

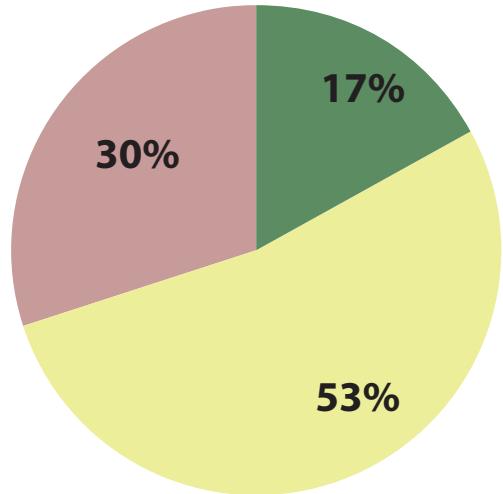
Participant will match the number in the diagram of construction components with corresponding term.

53% Kitchen and Bath Floor Plan

Participant will create the correct drawing of the kitchen and bath layout, sheet size, line work, dimensions, and notes.

30% Front Elevation

Participant will create a front elevation using a plan view and wall section to a correct scale and present final project in digital or hard copy format.



Sample Job

Kitchen and Bath Floor Plan

Maximum Time: 1 hour and 30 minutes

Participant Activity: Each participant will redraw the kitchen/bath plan according to specifications. The final project will be presented in digital or hard copy format.