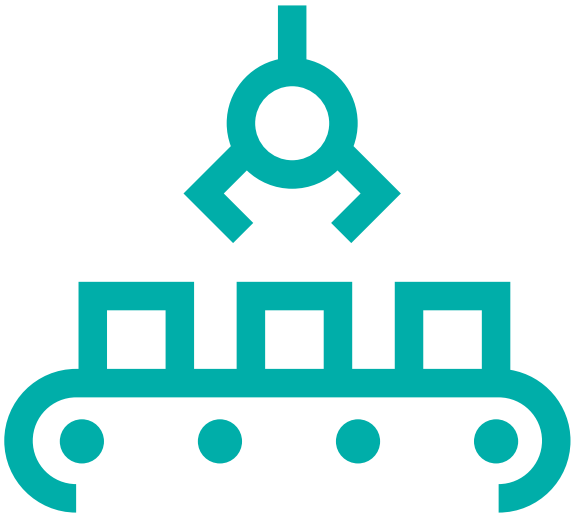
NOCTI

Foundational Credential Blueprint



CAD Foundations

Code: 1090 / Version: 01

General Assessment Information

Blueprint Contents

Test Type: The CAD Foundations industry-based credential is included in NOCTI's Foundational assessment battery. Foundational assessments measure occupational awareness and fundamental competencies within a specific field, providing insight into a learner's progress toward job readiness. Foundational assessments include a written component only and can be used at the secondary and post-secondary levels. Foundational assessments can be delivered in an online or paper/pencil format.

Revision Team: The assessment content is based on input from secondary, post-secondary, and business/industry representatives from the states of Georgia and New Jersey.

CIP Code

15.1302-
CAD/CADD Drafting and/or
Design Technology/Technician

Learning that works for America CTE™

Career Cluster 13 -
Manufacturing

o*net™ in*it

17-3013.00-
Mechanical Drafters

Association for Career and Technical Education ACTE®

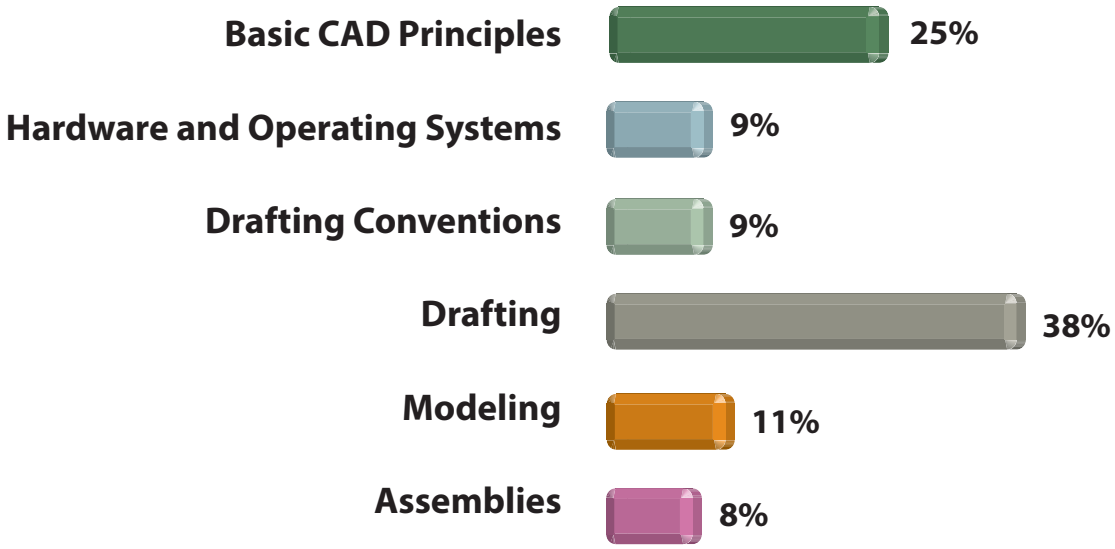
The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!

Written Assessment

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

Administration Time: 2 hours
Number of Questions: 90
Number of Sessions: This assessment may be administered in one, two, or three sessions.

Areas Covered



Specific Standards and Competencies Included in this Assessment

Basic CAD Principles

- Describe objects as geometric entities
- Describe and demonstrate the process of using a mechanical or electronic caliper accurately
- Describe and demonstrate the use of graphic communication skills through sketching
- Express a design of an object as a 3-D 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 all information
- Revise a design and update finished drawings appropriately
- Identify basic geometric elements
- Describe and apply basic geometric concepts to building 3-D models

Hardware and Operating Systems

- Define and apply computer terminology
- View file names on a storage device
- Store, copy, move, and retrieve information to/from various drives
- Rename and back up files

Drafting Conventions

- Interpret basic views and dimensions in a working drawing
- Identify geometric tolerance symbols
- Interpret drawing symbols

(Continued on the following page)

Specific Standards and Competencies (continued)

Drafting

- Explain the Cartesian Coordinate System
- Describe the process for setting and editing drawing elements
- Create and edit line types
- Create and edit basic geometries
- Place and edit text and fonts
- Create orthographic, isometric, section, and auxiliary views
- Place and edit dimensions
- Generate a 2-D multiview drawing
- Generate a pictorial drawing
- Scale and print a hard copy, or save as a .PDF, to an output device
- Explain the use and need for scaled drawings

Modeling

- Create and edit construction planes through reference geometry
- Create a 2-D drawing from a 3-D model
- Create a 3-D model from a 2-D drawing

Assemblies

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

Sample Questions

A three dimensional model of a cylinder could be created by extruding a

A. square
B. triangle
C. circle
D. hexagon

The acronym, CPU, stands for

A. computer projection unit
B. concentric point verification
C. central processing unit
D. computer power user

The amount that a dimension may vary is called

A. leeway
B. clearance
C. tolerance
D. variability

Hidden lines in a sectional assembly view are

A. displayed as a solid line
B. typically not shown
C. shown as phantom lines
D. mandatory

The generation of a 2-D drawing from a 3-D model requires

A. a valid 3-D model
B. preset view ports
C. a valid isometric view
D. preset line types and layers