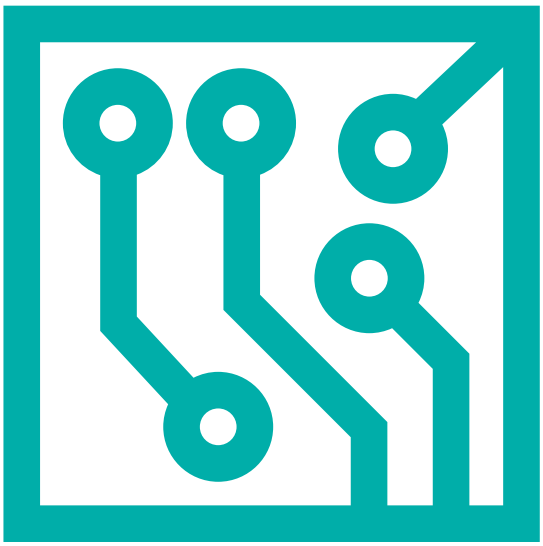
NOCTI

Foundational Credential Blueprint



Engineering Technology Foundations

Code: 1092 / Version: 01

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General Assessment Information

Blueprint Contents

General Assessment Information
Written Assessment Information
Specific Competencies Covered in the Test
Sample Written Items

Test Type: The Engineering Technology 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 New Mexico, Pennsylvania, and Wyoming.

CIP Code

15.9999 - Engineering Technologies/Technicians, Other

Learning that works for America CTE™

Career Cluster 15 - Science, Technology, Engineering, and Mathematics

O*NET™ in*it

17-3027.00 - Mechanical Engineering Technicians

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!

NATIONAL COLLEGE CREDIT RECOMMENDATION SERVICE
University of the State of New York - Regents Research Fund

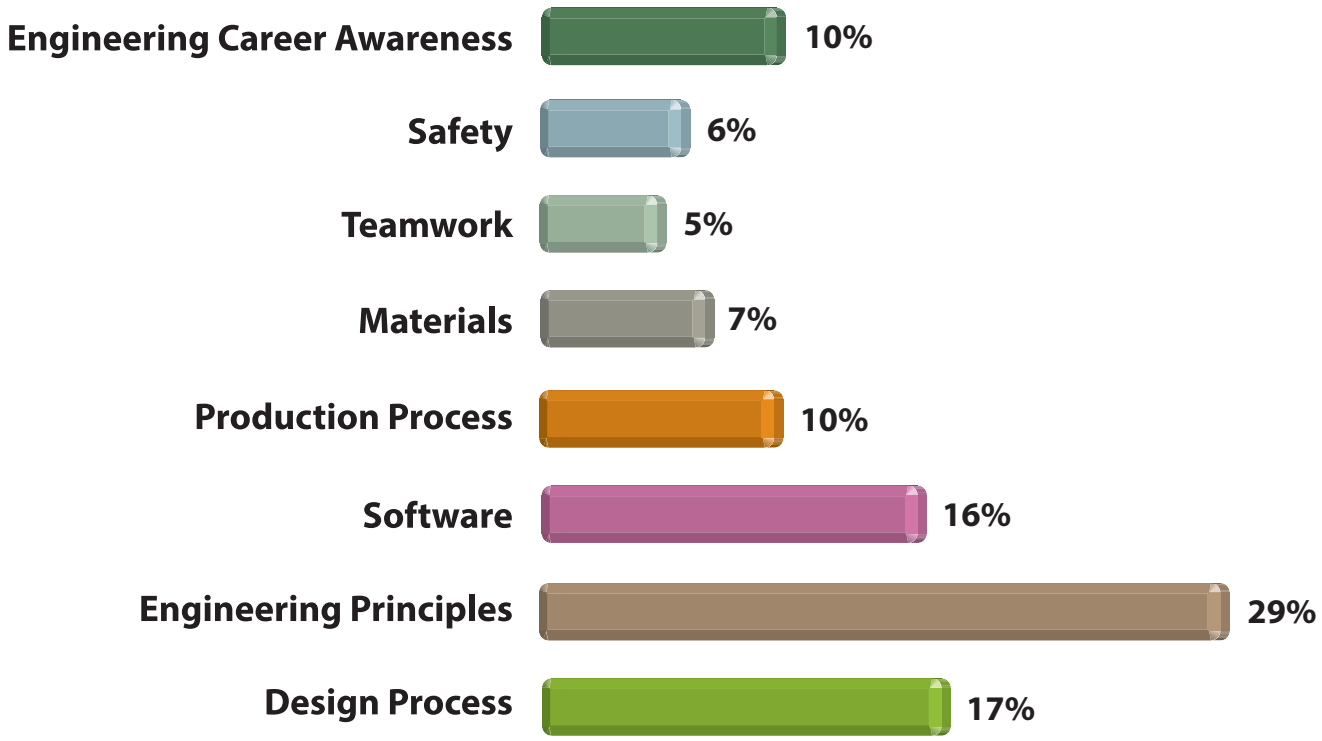
In the lower division baccalaureate/associate degree category, 3 semester hours in Engineering Technology, Mechanical Engineering Technology, Electrical Technology, or Electronic Technology

Written Assessment

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

Administration Time: 2 hours
Number of Questions: 82
Number of Sessions: This assessment may be administered in one, two, or three sessions.

Areas Covered



Specific Standards and Competencies Included in this Assessment

Engineering Career Awareness

- Describe engineering fields
- Identify job functions in engineering
- Describe ethics related to engineering

Safety

- Explain and demonstrate the proper use of personal protective equipment (PPE)
- Discuss engineering safety

Teamwork

- Identify the roles and responsibilities of engineering design team members
- Identify characteristics of an effective design team

Materials

- Select the correct materials and components for specific functions
- Test materials for specific characteristics

Production Process

- Explain quality control
- Identify engineering measurement tools and instruments
- Identify statistical process controls

(Continued on the following page)

Specific Standards and Competencies (continued)

Software

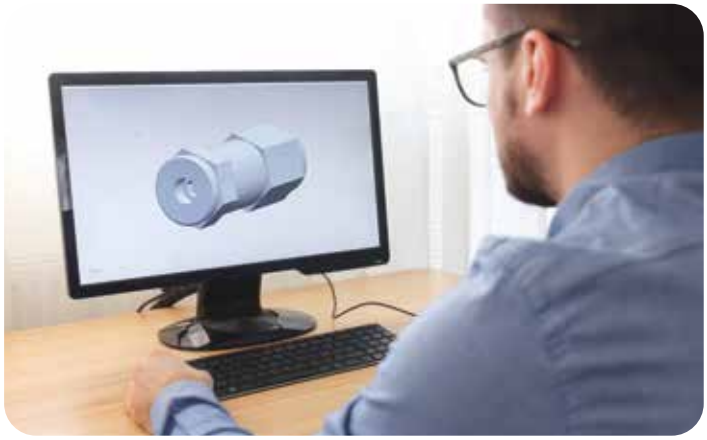
- Discuss word processing and presentation software
- Describe and demonstrate the process for using CAD in a design solution
- Identify and interpret spreadsheet data for engineering applications

Engineering Principles

- Describe statics principles in engineering
- Describe mechanical systems principles
- Describe electricity principles
- Identify components and applications of fluid power principles
- Describe principles and applications of thermodynamics

Design Process

- Identify the components of the design process
- Identify the elements of a well-written problem statement
- Describe the process of brainstorming
- Build a prototype from working drawings using appropriate materials
- Test prototype to defined criteria



Sample Questions

An engineer who deals with surveying is called a/an _____ engineer.

A. mechanical
B. electrical
C. industrial
D. civil

The amount that a dimension may vary is called

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

To double the size of an object in a CAD drawing, use the ____ command.

A. query
B. scale
C. find
D. search

The AC voltage wave form is called a _____ wave.

A. cosine
B. full
C. half
D. sine

The original sample of a product or process used in research and development is called the

A. originator
B. prototype
C. instigator
D. pattern