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# **Engineering Technology Foundations**

## 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 technical skills at the occupational level and include items which gauge factual and theoretical knowledge. 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.



15.9999 -  
Engineering  
Technologies/Technicians, Other



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



17-3027.00 -  
Mechanical  
Engineering Technicians



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!

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



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

## Written Assessment

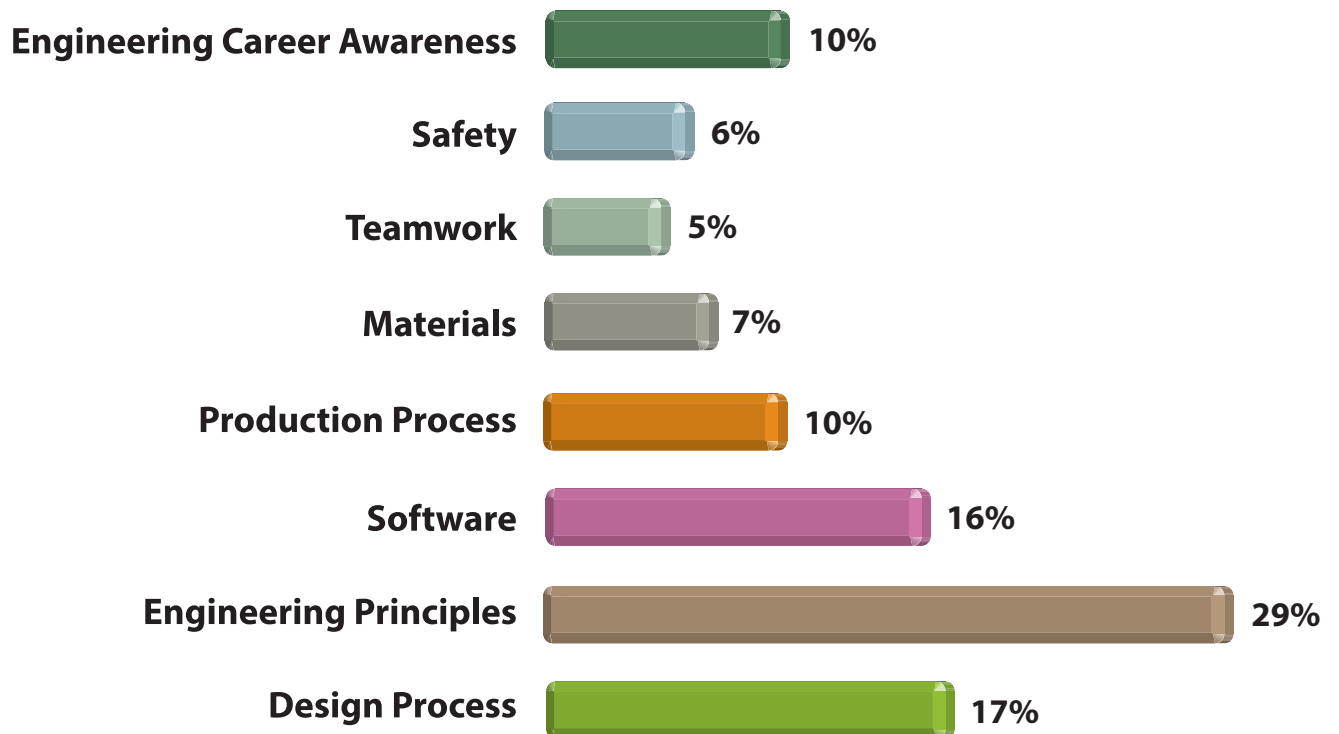
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**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

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## Specific Standards and Competencies (continued)

### Software

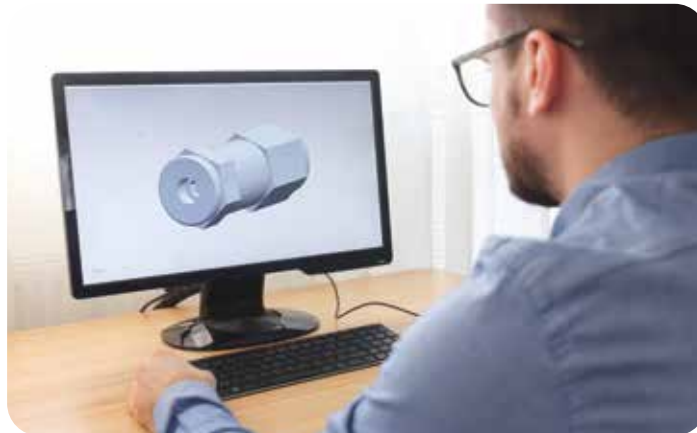
- Discuss word processing and presentation software
- Describe and demonstrate the process for using CAD in a design solution
- Identify and interpret spreadsheet data for engineering applications

### 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