

## **Carpentry I – 3-4 Credit Hours**

*All content from NCCER General Carpentry 6<sup>th</sup> edition modules.*

### **ORIENTATION TO CARPENTRY**

#### Learning Objectives

1. Identify the career and training opportunities within the carpentry trade.
  - Describe craft training opportunities within the carpentry trade.
2. Explain the importance of safety in carpentry, and how it impacts contractors and craft professionals on the jobsite.
  - Describe the OSHA Outreach Training Program and contents of a site-specific safety plan (SSSP).
3. Identify skills and attributes of successful carpenters.
  - List the skills and responsibilities of professional carpenters.
  - Summarize the traits and standards followed by professional carpenters.
4. Explain how organizations like SkillsUSA help you connect with construction craft professionals.
  - Describe SkillsUSA programs/competitions and the value they offer to the carpentry trainees and participating organizations.
  - List the seven goals of the SkillsUSA Program of Work.

#### Performance Tasks

This is a knowledge-based module. There are no Performance Tasks.

### **BUILDING MATERIALS AND FASTENERS**

#### Learning Objectives

1. Identify safety hazards and precautions associated with wood, concrete, steel, and composite building materials.
  - Describe the focus four and explain how to reduce hazards associated with handling carpentry materials.
  - Explain the benefits of a job hazard analysis.
2. Identify different types of building materials and calculate needed quantities.
  - Summarize the types of lumber, their characteristics, and how lumber is graded.
  - Describe the types of treated lumber.
  - Identify engineered wood products and their applications.
  - Distinguish between the types of concrete construction materials.
  - Describe the types of steel framing and their applications.
  - Summarize how to calculate lumber, panel, and concrete quantities.
3. Explain how to properly handle and store building materials.
  - Describe how to safely handle and store wood, concrete, and steel building materials.
4. Identify fasteners, anchors, and adhesives used in construction.
  - Describe different types of nails, screws, bolts, and staples.

- Summarize the categories of mechanical anchors.
- List adhesives used in construction and identify their applications.

#### Performance Tasks

1. Learning Objective 2 - Given a selection of building materials, identify a particular material and state its use.
2. Learning Objective 2 - Calculate building material quantities using the described methods.
3. Learning Objective 4 - Demonstrate safe and proper installation of various types of fasteners, anchors, and adhesives.

### **CONSTRUCTION PLANS & DOCUMENTS**

#### Learning Objectives

1. List drawings included in a set of construction plans and explain how to read them.
  - Describe the purpose of each type of drawing in a set of plans.
  - Identify selected lines, architectural symbols, and abbreviations used on plans.
  - Describe the methods of dimensioning construction drawings.
2. Describe the purpose of written specifications.
  - Summarize how specifications are organized.
  - Explain the importance of construction building codes.

#### Performance Tasks

1. Learning Objective 1 - Read and interpret construction plan drawings.
2. Learning Objective 1 - Read and interpret schedules.
3. Learning Objective 2 - Read and interpret written specifications.

### **PRINCIPLES OF SITE AND BUILDING LAYOUT**

#### Learning Objectives

1. Explain how construction drawings are used in site and building layout.
  - Summarize tasks performed during site and building layout.
  - Describe the types of construction drawings used to lay out a building site.
2. Understand fundamental construction math concepts and right triangle calculations used in site layout.
  - Explain how angles, shapes, and the Pythagorean Theorem are used in site and building layout.
3. Describe measuring and leveling tools used in performing site and building layout.
  - Identify measuring tools and their applications.
  - Describe leveling tools and their applications.
  - Describe site layout instruments and equipment.
4. Explain how to measure horizontal and vertical distances, establish building lines, and verify corners are square.
  - Describe how to measure horizontal and vertical distances.
  - Summarize how to establish building lines with batter boards and verify corners are square.

### Performance Tasks

1. Learning Objective 3 - Demonstrate the ability to use common measuring and leveling tools.
2. Learning Objective 3 - Use a water level, builder's level, laser level, or transit level to determine elevations and angles.
3. Learning Objective 4 - Use the 3-4-5 rule or Pythagorean Theorem to verify that intersecting walls are square.