Department:

Building Trades

Course Description:

This course provides both a general and specific introduction to the construction business. The course will include a study of the Occupational Outlook and the various types of jobs available in the building trades industry. Emphasis will be placed on the safe operation of hand and power tools and other equipment. The course also covers the application of basic mathematics in the construction industry.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Practice basic safety principles:
   a. Explain the role that safety plays in the construction crafts.
   b. Describe the meaning of job-site safety.
   c. Describe the characteristics of a competent person and a qualified person.
   d. Explain the appropriate safety precautions to take around common job-site hazards.
   e. Demonstrate the use and care of appropriate personal protective equipment (PPE).
   f. Properly don and remove personal protective equipment (safety goggles, hard hat, and personal fall protection).
   g. Follow the safety procedures required for lifting heavy objects.
   h. Describe safe behavior on and around ladders and scaffolds.
   i. Explain the importance of Hazard Communications (HazCom) and material safety data sheets (MSDSs).
   j. Describe fire prevention and firefighting techniques.
   k. Describe safe work procedures to use around electrical hazards.

2. Apply basic mathematics functions to the construction field:
   a. Add, subtract, multiply, and divide whole numbers, with and without a calculator.
   b. Use a standard ruler and a metric ruler to measure.
   c. Add, subtract, multiply, and divide fractions.
   d. Add, subtract, multiply, and divide decimals, with and without a calculator.
   e. Convert decimals to percentages and percentages to decimals.
   f. Convert fractions to decimals and decimals to fractions.
   g. Explain what the metric system is and how it is important in the construction trade.
   h. Use metric units of length, weight, volume, and temperature.
   i. Recognize some of the basic shapes used in the construction industry and apply basic geometry to measure them.

3. Use hand tools properly:
   a. Identify the basic hand tools used in the construction trade.
   b. Use hand tools safely.
c. Describe the basic procedures for taking care of hand tools.

4. Use power tools properly:
   a. Identify power tools commonly used in the construction trades.
   b. Use power tools safely.
   c. Explain how to maintain power tools properly.

5. Use blueprints:
   a. Identify basic blueprint terms, components, and symbols.
   b. Relate information on blueprints to actual locations on the print.
   c. Identify different classifications of drawings.
   d. Interpret and use drawing dimensions.

6. Describe basic rigging principles:
   a. Identify and describe the use of slings and common rigging hardware.
   b. Describe basic inspection techniques and rejection criteria used for slings and hardware.
   c. Describe basic hitch configurations and their proper connections.
   d. Describe basic load-handling safety practices.
   e. Demonstrate proper use of American National Standards Institute (ANSI) hand signals.

7. Demonstrate basic communication skills:
   a. Interpret information and instructions presented in both written and verbal form.
   b. Communicate effectively in on-the-job situations using written and verbal skills.

8. Apply basic employability skills:
   a. Give an overview explanation of the construction industry, the role of companies that make up the industry, and the role of individual professionals in the industry.
   b. Apply critical thinking skills to solve problems.
   c. Demonstrate knowledge of computer systems and explain common uses for computers in the construction industry.
   d. Use effective relationship skills with co-workers and supervisors, work as a team member, and demonstrate appropriate leadership skills.
   e. Explain the significance and challenges of workplace issues such as sexual harassment, stress, and substance abuse.

Course Content:

A. Building Materials
B. General Safety Rules
C. Orientation to the Trade
D. Hand Tools
E. Power Tools
F. Leveling Instruments
G. Reading Plans and Elevations
H. Plans, Specifications, and Codes
I. Blueprint Reading
J. Basic Rigging
K. Basic Communication Skills
L. Basic Employability Skills
Learning Assessments:

Course competencies will be assessed by participation in class discussion and activities, examinations, assignments, and class attendance.

Instructional Materials:

Core Curriculum, Introductory Craft Skills, Contren Learning Series, Pearson Hall.

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students must complete the “Disabilities Self-Identification Form” at this link: https://highlandcc.edu/pages/disability-services.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.