

Department:

Construction Technology

Course Description:

This course includes the general and specific introduction into the construction business. The study of the Occupational Outlook and the various types of jobs available is also included. Students will need to pass a safety test on hand and power tools and equipment operations. The course also presents basic mathematics and its application to the construction industry.

Course Competencies:

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

1. Basic Safety
 - 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. Define safe work procedures to use around electrical hazards.
2. Introduction to Construction Math
 - 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. Recognize and 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. Introduction to Hand Tools
 - a. Recognize and identify some of 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. Introduction to Power Tools
 - a. Identify power tools commonly used in the construction trades.
 - b. Use power tools safely.

- c. Explain how to maintain power tools properly.
5. Introduction to Blueprints
 - a. Recognize and identify basic blueprint terms, components, and symbols.
 - b. Relate information on blueprints to actual locations on the print.
 - c. Recognize different classifications of drawings.
 - d. Interpret and use drawing dimensions.
6. Basic Rigging
 - 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. Basic Communication Skills
 - a. Demonstrate the ability to interpret information and instructions presented in both written and verbal form.
 - b. Demonstrate the ability to communicate effectively in on-the-job situations using written and verbal skills.
8. Basic Employability Skills
 - a. Explain the construction industry, the role of the companies that make up the industry, and the role of individual professionals in the industry.
 - b. Demonstrate critical thinking skills and the ability to solve problems using those skills.
 - c. Demonstrate knowledge of computer systems, and explain common uses for computers in the construction industry.
 - d. Demonstrate effective relationship skills with teammates and supervisors, the ability to work on a team, and appropriate leadership skills.
 - e. Be aware 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 & Elevations
- H. Plans Specifications, & Codes
- I. Blueprint reading
- J. Basic Rigging
- K. Basic Communication Skills
- L. Basic Employability Skills

Learning Assessments:

The instructor's evaluation of the student will be based on class discussion, examinations, assigned activities, class attendance, and student participation.

Instructional Materials:

Textbook: NCCER. (2015). *Core Curriculum Trainee Guide, Introductory Craft Skills* (5th ed.). Boston, MA: Pearson. ISBN-13: 978-0134131436

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” on our [Disability Services website](#).

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.

A Note on Harassment, Discrimination and Sexual Misconduct

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an [online report](#) about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our [Equity Grievance Policy](#).