

Department:

Construction Technology

Course Description:

This course provides experience in construction of the sub-floor system in a residential house according to the Uniform Building Code. The student will gain experience in construction and installing exterior walls and interior walls, plus a practical study of sheet rock materials and finishing techniques

Course Competencies:

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

1. Floor Systems
 - a. Identify the different types of framing systems.
 - b. Read and interpret drawings and specifications to determine floor system requirements.
 - c. Identify floor and sill framing and support members.
 - d. Name the methods used to fasten sills to the foundation.
 - e. Given specific floor load and span data, select the proper girder/beam size from a list of available girders/beams.
 - f. List and recognize different types of floor joists.
 - g. Given specific floor load and span data, select the proper joist size from a list of available joists.
 - h. List and recognize different types of bridging.
 - i. List and recognize different types of flooring materials.
 - j. Explain the purposes of subflooring and underlayment.
 - k. Match selected fasteners used in floor framing to their correct uses.
 - l. Estimate the amount of material needed to frame a floor assembly.
 - m. Demonstrate the ability to:
 - 1) Lay out and construct a floor assembly
 - 2) Install bridging
 - 3) Install joists for a cantilever floor
 - 4) Install a subfloor using butt-joint plywood/OSB panels
 - 5) Install a single floor system using tongue-and-groove plywood/OSB panels
2. Wall and Ceiling Framing
 - a. Identify the components of a wall and ceiling layout.
 - b. Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition Ts, bracing, and fire stops.
 - c. Describe the correct procedure for assembling and erecting an exterior wall.
 - d. Identify the common materials and methods used for installing sheathing on walls.
 - e. Lay out, assemble, erect, and brace exterior walls for a frame building.
 - f. Describe wall framing techniques used in masonry construction.
 - g. Explain the use of metal studs in wall framing.
 - h. Describe the correct procedure for laying out ceiling joists.
 - i. Cut and install ceiling joists on a wood frame building.

- j. Estimate the materials required to frame walls and ceilings.
- 3. Introduction to Concrete, Reinforcing Materials, and Forms
 - a. Identify the properties of cement.
 - b. Describe the composition of concrete.
 - c. Perform volume estimates for concrete quantity requirements.
 - d. Identify types of concrete reinforcement materials and describe their uses.
 - e. Identify various types of footings and explain their uses.
 - f. Identify the parts of various types of forms.
 - g. Explain the safety procedures associated with the construction and use of concrete forms.
 - h. Erect, plumb, and brace a simple concrete form with reinforcement.

Course Content:

- A. Layout and Constructing a Floor Assembly
- B. Installing bridging and joists for a Cantilever Floor
- C. Install Subflooring
- D. Layout, Assembling, & Erecting Brace Exterior Walls
- E. Cutting & Installing Ceiling Joists
- F. Constructing Simple Forms with Reinforcement
- G. Perform Volume Estimates for Materials

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. (2013). *Carpentry Level 1 Trainee Guide* (5th ed.). Boston, MA: Pearson. ISBN-13: 978-0133402377

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" 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](#).