

COURSE INFORMATION

Course prefix/No.:	BCT 109
Course Title:	Foundations, Floors and Walls
Lecture Hours/Week:	4.0
Lab Hours/Week:	3.0
Credit Hours/Semester	5.0

[*Distance Learning Attendance/VA Statement*](#)
[*Textbook Information*](#)

COURSE DESCRIPTION

This is a study of framing basics, layout and constructing foundations, floors and walls; including material selections and applications.

COURSE COMPETENCIES

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

Module 1 - Blueprints, Codes, and Building Layout

- Describe and explain the function of the various kinds of drawings contained in a set of blueprints.
- Demonstrate how specifications are used.
- Identify various types of lines and read dimensions.
- Establish level points across a building area using a water level and by using a carpenter's hand spirit level in combination with a straightedge.
- Properly set up and use the builder's level, transit-level, and laser level.
- Use an optical level to determine elevations.
- Explain how to lay out building lines by using the Pythagorean Theorem.
- Build batter boards and accurately establish building lines with string.
- Identify and explain the meaning of symbols and abbreviations used on a set of prints.
- Read and interpret plot, foundation, floor, and framing plans.
- Define and explain the purpose of building codes and zoning laws.
- Explain the requirements for obtaining a building permit and the duties of a building inspector.

Module 2 - Concrete forms and footings

- Construct forms for footings, slabs, walks, and driveways.
- Construct concrete forms for foundation walls.
- Lay out and build concrete forms for stairs.
- Explain techniques used for the proper placement and curing of concrete.

- Describe the composition of concrete and factors affecting its strength, durability, and workability.
- Explain the reasons for making a slump test.
- Explain the reasons for reinforcing concrete and describe the materials used.
- Calculate the quantity of concrete needed for footings and foundation walls
- Estimate quantities of concrete for slabs, driveways and walks.

Module 3 - Floor and Sill Framing

- Describe platform, balloon, and post-and-beam framing, and identify framing members of each.
- Describe energy and material conservation framing methods.
- Build and install girders, erect columns, and lay out sills.
- Properly install and anchor sills to foundation wall.
- Lay out and install floor joists.
- Frame openings in floors.
- Lay out, cut, and install bridging.
- Install subfloor.
- Describe methods to prevent destruction by wood pests.

Module 4 - Stair Framing and Finishing

- Name various stair finish parts and describe their location and function.
- Describe stairway designs.
- Define terms used in stair framing.
- Determine the unit rise and unit run of a stairway given the total rise.
- Determine the length of a stairwell.
- Lay out a stair carriage and frame a straight stairway.
- Lay out and frame a stairway with a landing.
- Lay out, dado, and assemble a housed-stringer staircase.
- Apply finish to the stair body of open and closed staircases.
- Install a post-to-post balustrade from floor to balcony on the open end of a staircase.

Module 5 - Wall and ceiling framing

- Identify and describe the function of each part of the wall frame.
- Determine the length of exterior wall studs.
- Describe four different types of walls used in residential framing.
- Determine the rough opening width and height for windows and doors.
- Lay out the wall plates for partition intersections, openings, and OC studs.
- Describe methods of framing corner and partition intersections.
- Assemble and construct a wall section.
- Erect and temporarily brace a wall section plumb and straight.
- Describe the function of and install blocking and backing.

- Apply wall sheathing.
- Lay out, cut, and install ceiling joists.
- Identify and describe the components of nonstructural steel wall framing.
- Install a steel door buck.
- Estimate the materials needed for walls and ceiling framing.

REQUIREMENTS

Attendance Policy

The college attendance policy, stated in the college handbook, will be honored.

Academic Honesty

Students are expected to adhere to the college policy regarding student conduct as stated in the college handbook.

Assignments

Students are expected to complete all assignments and any supplementary exercises designated by the instructor.

EVALUATION STRATEGIES/GRADING

Students must complete all modules, including assignments, projects, labs, and tests. Students must earn at least a “C” in order for the course to serve as a prerequisite and for the course to apply towards a certificate.

Grading Scale

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F = 0-59

Evaluation Method

Tests/Projects (minimum of five total)	10% for each Module
Work Attitude	5% for each Module
Lab	5% for each Module

20% X 5 module grades = 100% Final Grade

ENTRY LEVEL SKILLS

The student must be able to read and solve basic mathematical equations.

PREREQUISITES

RDG 031 or equivalent; and AET 103, BCT 105, BCT 112 **OR**

CO-REQUISITES

AET 103, BCT 105, BCT 112.

METHODS OF INSTRUCTION

Lectures, reading assignments, projects, discussions, video presentations, multimedia presentations, and web content are the major teaching methods used in this course. See instructor for specifics.

LAB EXERCISES

See addendum and/or instructor for additional details.

Effective Date: SP06