



South Central College

CARP 2023 Advanced Principles 1

Course Outcome Summary

Course Information

Description	Students will be constructing a house from the ground up. Students will be staking out a residential building project and assisting the excavator. Students will build and pour footings and the foundation. Students will continue building basement walls, installing floor joists, erecting exterior and interior walls, and sheathing walls. (Prerequisites CARP 1110; CARP 1121; CARP 1130)
Total Credits	4
Total Hours	112

Types of Instruction

Instruction Type	Credits/Hours
1 lecture 3 lab	112

Pre/Corequisites

CARP 1110 Carpentry Tools and Safety

CARP 1121 Print Reading

CARP 1130 Residential Principles II

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Select an appropriate location for a residence on a property.

Learning Objectives

Locate and identify corner pins.

Establish property setbacks.

Locate building corners on the lot.

2. Locate, form, and pour footings.

Learning Objectives

Build footing forms according to plans.
Install reinforcing rods and pass inspections.
Position concrete according to plans.

3. Evaluate different types of foundations in residential construction.

Learning Objectives

Describe wood foundations.
Explain block foundations.
Identify insulated concrete form (ICF) foundation.

4. Build forms for the foundation.

Learning Objectives

Set forms for foundation.
Straighten and brace foundation forms.
Install rebar into foundation.

5. Participate in pouring foundation.

Learning Objectives

Estimate and order concrete.
Position or Pour concrete.
Identify any potential hazards and plan accordingly.

6. Apply water proofing to the foundation.

Learning Objectives

Explain different water proofing materials.
Strip foundation forms.
Apply appropriate water proofing.

7. Build basement bearing walls.

Learning Objectives

Measure and build exterior walls.
Calculate and build knee walls.
Build interior bearing walls.

8. Recognize different types of residential floor systems.

Learning Objectives

Recognize and explain floor trusses.
Describe "I" joists.
Recognize and explain common lumber joists.

9. Utilize house plan to determine type of floor system to be installed.

Learning Objectives

Identify floor framing plan.
Identify appropriate floor joists from plan.
Install floor joists system.

10. Describe the role of beams in construction.

Learning Objectives

Identify steel beams.
Recognize LVL beams.
Describe built up beams.

11. Explore options of floor underlayment.

Learning Objectives

Discuss one-half-inch sub floor system.
Recognize tongue and groove plywood.
Apply appropriate adhesives in floor system.

12. Lay out exterior walls.

Learning Objectives

Identify and mark stud locations.
Draw trimmer locations.
Recognize different corner construction.

13. Frame exterior walls.

Learning Objectives

Fasten studs to plates.
Connect headers to studs and trimmers.

14. Lay out interior walls.

Learning Objectives

Lay out interior wall plates.
Calculate widths for plumbing walls.
Align studs with joists.

15. Frame interior walls.

Learning Objectives

Fasten studs to plates.
Locate and position interior walls.
Nail and fasten interior walls.

16. Sheath exterior walls.

Learning Objectives

Describe orient strand board.
Recognize plywood sheathing.
Describe foam sheathing.
Install sheathing according to house plans.

17. Layout and frame stairway.

Learning Objectives

Calculate stairwell opening.
Check headroom code requirements.
Lay out stair stringers.
Cut out stair tread and risers.

SCC Accessibility Statement

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Additional information and forms can be found at: www.southcentral.edu/disability

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