

ARC 113
RESIDENTIAL ARCHITECTURAL TECHNOLOGY

COURSE DESCRIPTION:

Prerequisites: ARC 111 and ARC 112

Corequisites: None

This course covers intermediate residential working drawings. Topics include residential plans, elevations, sections, details, schedules, and other related topics. Upon completion, students should be able to prepare a set of residential working drawings that are within accepted architectural standards. Course Hours per Week: Class, 1. Lab, 6. Semester Hours Credit, 3.

LEARNING OUTCOMES:

A student who successfully completes this course should be able to:

- a. Draft a complete set of residential construction documents, including site plan, floor plans, foundation plan, elevations, sections, details, schedules (door, window, finish) roof plan, electric plan and stair layout.
- b. Understand the fundamentals of timber frame construction
- c. Understand the fundamentals of concrete foundation construction (crawl space)
- d. Expand their understanding of the conventions and symbols of architectural drafting

OUTLINE OF INSTRUCTION:

- I. Course introduction
- II. Principles of Residential Construction
 - A. Terminology
 - B. Conventions of wood frame construction
 - C. Roof types
 - D. Exterior finishes
 - E. Interior finishes
 - F. Vapor barriers & insulation
 - G. Ventilation
- III. Basic Residential Planning
 - A. Overview of style options
 - B. Site layout
 - C. Analyzing space / room relationships
- IV. Selection of structural members
 - A. Overview of stresses in members
 - B. Effects of moisture content
 - C. Determination of acceptable loads
 - 1) Dead loads
 - 2) Live loads

- V. Room planning
 - A. Sizing and considerations of rooms
 - B. Typical sizes of furniture / Fixtures
 - C. Working from maximum square footage

- VI. Residential plans (using pre-existing criteria)
 - A. Draft floor plan to include
 - 1) Wall layout
 - 2) Doors & Windows
 - 3) Appliances
 - 4) Cabinets
 - 5) Finished floors
 - 6) Dimensions & notes

 - B. Draft elevations to include
 - 1) Acceptable number of views
 - 2) Exterior coverings
 - 3) Location of doors and windows
 - 4) Floor & ceiling heights
 - 5) Roof slopes
 - 6) Dimensions & notes

 - C. Draft wall section

 - D. Draft foundation plan to include
 - 1) Footings for masonry foundation walls & piers
 - 2) Foundation walls and piers
 - 3) Beams
 - 4) Joists
 - 5) Framing for non-load bearing walls / partitions
 - 6) Pier details
 - 7) Foundation wall details
 - 8) Dimensions & notes

 - E. Draft cabinet details to include
 - 1) Placement
 - 2) Style(s)
 - 3) Dimensions & notes

 - F. Draft site plan
 - 1) Review details for site plan