

ARC 221
ARCHITECTURAL 3-D CAD

COURSE DESCRIPTION:

Prerequisites: ARC 114

Corequisite: None

This course introduces architectural three-dimensional CAD applications. Topics include three-dimensional drawing, coordinate systems, viewing, rendering, modeling, and output options. Upon completion, students should be able to prepare architectural three-dimensional drawings and renderings. Course Hours per Week: Class, 1. Lab 4, Semester Hours Credit, 3.

LEARNING OUTCOMES:

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

- a. Draw three dimensional wire models.
- b. Draw three dimensional solid models.
- c. Convert and draw two-dimensional details into 3-D architectural models.
- d. Manage data in a three dimensional drawing.
- e. Source three dimensioning model data from construction product vendors and insert into construction documents.

OUTLINE OF INSTRUCTION:

- I. Functions of three dimensional drawings
 - A. Presentations
 - B. Active/comparative models
 - C. Model analysis
- II. Three dimensional drawing environments
 - A. Wire frame
 - B. Solids
 - C. Viewports
 - D. Surface textures
- III. Solid models
 - A. Functional uses
 - B. Integration with 2-D drawings
 - C. Detailing
 - D. Vendor/product Internet access

- IV. Rendering techniques
 - A. Surface techniques
 - B. Material textures
 - C. Shading and Lighting

- V. Mass elements
 - A. Preliminary shapes
 - B. Integrated multiple mass shapes
 - C. Previously designed shapes/blocks

- VI. Design development
 - A. Establishing design protocol
 - B. Design time line
 - C. Editing

- VII. Transition to construction documents
 - A. Multiple document environment
 - B. Defined document package
 - C. Final Reviews