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