

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.

COURSE OBJECTIVES:

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

REQUIRED TEXTBOOKS AND MATERIALS:

To be announced

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.