

## **ARC 213 DESIGN PROJECT**

### **COURSE DESCRIPTION:**

Prerequisites: ARC 111, ARC 112, and ARC 114

Corequisites: None

This course provides the opportunity to design and prepare a set of contract documents within an architectural setting. Topics include schematic design, design development, construction documents, and other related topics. Upon completion, students should be able to prepare a set of commercial contract documents. Course Hours Per Week: Class, 2. Lab, 6. Semester Hours Credit, 4.

### **LEARNING OUTCOMES:**

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

- a. Develop and draw light construction details (type 1 and 2 as defined in NC building code)
- b. Design a functional building using commercial construction techniques
- c. Perform preliminary code research under supervision
- d. Solve drafting and design problems for steel and/or concrete wood construction
- e. Understand the relationship of building codes as applied to commercial construction technology
- f. Size up major structural components as applied to commercial construction technology

### **OUTLINE OF INSTRUCTION:**

- I. Brief Introduction to Building Codes, and Administrative Law for the project
  - A. Planning the building and construction documents
  - B. Research and details
  - C. Budget and building cost per square foot
  - D. Site and the building environment
  - E. Teamwork building skills
  - F. Weekly schedule update
- II. Floor Plan:
  - A. Symbols
  - B. Dimensioning
  - C. Layout
- III. Structural details of steel products:
  - A. Steel decking
  - B. Steel connections and joints
  - C. Steel Trusses
  - D. Steel "I" Joists
  - E. Steel and wind bracing

- IV. Wall Sections:
  - A. Symbols
  - B. Dimensioning
  - C. Layout
  
- V. Foundation Systems:
  - A. Symbols
  - B. Dimensioning
  - C. Layout
  
- VI. Exterior Elevations
  - A. Symbols
  - B. Layout
  
- VII. Roof Plan and Details
  
- VIII. Problem solving concepts
  - A. Methods
  - B. Documentation
  
- IX. Presentation concepts
  - A. Written
  - B. Verbal
  - C. Oral
  
- X. Scheduling concepts
  - A. Daily
  - B. Weekly
  - C. Graphs
  - D. CPM