

ARC 211
LIGHT CONSTRUCTION TECHNOLOGY

COURSE DESCRIPTION:

Prerequisites: ARC 111 and ARC 112

Corequisites: None

This course covers working drawings for light construction. Topics include plans, elevations, sections, and details; schedules; and other related topics. Upon completion, students should be able to prepare a set of 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. Develop an understanding of apartment (or multi-family) building construction.
- b. Draw all necessary plans of a small two-story apartment complex and will know how to compute all calculations required in two-story building design.
- c. Develop and exhibit proficiency in the use of technical pens for inking or drafting film.

OUTLINE OF INSTRUCTION:

- I. Ground floor plan and details
 - A. First floor plan design for two-story apartment
 - 1) Floor plan function
 - 2) Floor plan layout
 - 3) Dimensions
 - B. First floor plan details
 - 1) Partitions
 - 2) Splash block
 - 3) General notes
- II. Second floor plan and general notes
 - A. Second floor plan design for two-story apartment
 - 1) Floor plan function
 - 2) Floor plan layout
 - 3) Dimensions
 - B. Second floor plan general notes
 - 1) Stud dimensioning
 - 2) Sheathing dimensioning
 - 3) Examples of wood partitions

- III. Transverse section
 - A. Trusses
 - 1) Design
 - 2) Materials
 - 3) Spacing
 - 4) Stress and load
 - B. Cross section of elevations
 - 1) Direction of ceiling and floor members
 - 2) Placement of girders, headers and columns
 - 3) Notes
 - 4) Dimensions
 - 5) Roof pitch
 - C. Stairs
 - 1) Review of terminology
 - 2) Rises and tread proportions
 - 3) Stair formulae
 - 4) Angle of stairs
 - 5) Plan layout
 - 6) Headroom
 - 7) Railings
 - 8) Notes and dimensions
 - D. Ground and foundations cross-section
 - 1) Wall section review
 - 2) Brick-veneer construction
 - 3) Sill details
 - 4) Footing
 - 5) Dimensions and notes
 - E. Insulation symbols
 - 1) Insulation for floor slabs
 - 2) Steel reinforcement
 - 3) Vapor barriers
 - 4) Ventilation
 - 5) Notes and dimensions
 - F. Interior load bearing walls
 - 1) Concrete block
 - 2) Steel and concrete joists
 - 3) Reinforces concrete joists
 - 4) Notes and dimensions
- IV. Sections and details
 - A. Typical and wall section
 - B. Side wall section
- V. Mechanical-electrical schedule
 - A. Isometric hot and cold water piping
 - 1) Use of templates

- 2) Isometric layout
- 3) Symbols, notes and dimensions

VI. Site plan

A. Layout of features

- 1) Lot size
- 2) Lot shape
- 3) Elevation
- 4) Contours
- 5) Roads
- 6) Set back requirement

B. Dimensions and legend

- 1) Property lines
- 2) Electrical transformer
- 3) Contour dimensions
- 4) General notes

REQUIRED TEXTBOOKS AND MATERIALS:

Text to be selected by instructor.

SUGGESTED REFERENCES, PERIODICALS AND VISUAL AIDS:

Ramsey, Charles G. and Harald R Sleeper. Architectural Graphics Standards. 6th edition. John Wiley and Sons.

Rose, Harrington A. Progressive Architecture. Reinhold Publishing Co., Stanford, Conn.
35 mm filmstrips: "Light Commercial Architecture", Robert D. Brown and Wayne E. Holous.
Prentice-Hall Co., Inc.

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.