

ARCHITECTURE 1

COURSE OUTLINE

Textbook: Architectural Design and Drafting Fourth Edition, by Jefferis & Madsen

Sections: 1-7

Supplemental textbooks – Architecture/Design, Engineering, Drawing; Architecture – residential drawing and design by Kicklighter; Architectural Styles by Wallach

General Course Objectives

- ✓ Students will gain knowledge of Architecture: past, present, and future.
- ✓ Students will gain knowledge in detail of all the parts of a structure and the purpose those parts have on the structure.
- ✓ Students will gain knowledge of the environments impact on architectural structures.
- ✓ Students will use knowledge of the instruments and tools in the field of architecture, how those instruments and tools work, and how they benefit the student.
- ✓ Students will know how to produce an architectural drawing.
- ✓ Students will gain knowledge of the process of formally presenting their architectural drawings and the process that must take place for their drawings to become a real life house.

Course Outline

A. Residential Architecture Past & Present

1. Professional Architectural Careers, Office Practices, and Opportunities

- a. Drafter
- b. Designer
- c. Architect
- d. Engineer
- e. Related Fields
- f. Design Basics

2. Architectural Styles

- a. Introduction
- b. Primitive
- c. Classical
- d. English
- e. Spanish
- f. French
- g. Italian
- h. Swiss
- i. Greek
- j. Dutch
- k. German
- l. Western European
- m. Asian

- n. Early American
- o. Contemporary American
- 3. Architectural Drafting Equipment
 - a. Supplies
 - b. Furniture
 - c. Pencils & leads
 - d. Eraser
 - e. Instruments
 - f. Machines
 - g. Scales
 - h. Protractors
- 4. Drafting Media
 - a. Paper & film
 - b. Sheet sizes, title blocks, and borders
- 5. Sketch & Orthographic Projection
 - a. Tools & materials
 - b. Sketching straight lines
 - c. Sketching circular lines
 - d. Measurement lines and proportions
 - e. Multi-view sketches
 - g. Isometric sketches
 - h. Orthographic projection
 - i. Multi-view projection
 - j. Projection features from and inclined plane
- 6. Architectural Lines and Lettering
 - a. Types of lines
 - b. Line techniques
 - c. Lettering
- 7. Computer-Aided Design and Drafting in Architecture
 - a. Terminology of Computer-Aided Design and Drafting
 - b. Designing
 - c. The CADD workstation
 - d. Mobile Computers
 - e. Ergonomics
 - f. Architectural CADD symbols
 - g. Drawing on CADD layers
 - h. Web-Based Architectural Collaboration
- B. Residential Design
 - 1. Building Codes and Interior Design
 - a. National codes
 - b. International building code
 - c. Choosing the right code
 - d. Basic design criteria
 - e. Climatic and geographic design criteria

2. Room Relationships and Sizes
 - a. Floor plan
 - b. Living area
 - c. Sleeping area
 - d. Service area
 - e. Traffic patterns
 - f. Providing universal accessibility
3. Exterior Design Factors
 - a. Site considerations
 - b. Elements of design
 - c. Principles of design
 - d. Floor plan styles
 - e. Exterior styles
4. Conservation & Environmental Design and Construction
 - a. Energy efficient design
 - b. Energy codes
 - c. Energy efficient construction
 - d. Solar energy
 - e. Hydro-electric power
 - f. Healthy architectural design
5. Site Orientation
 - a. Terrain orientation
 - b. View orientation
 - c. Solar orientation
 - d. Wind orientation
 - e. Sound orientation

C. Site Plan

1. Legal Descriptions & Site Plan Requirements
 - a. Legal description
 - b. Site plan requirements
 - c. Grading plan
 - d. Sub-division
 - e. Planned unit development
2. Site Plan Layout
 - a. Site design consideration
 - b. Property lines
 - c. Site plan drawing checklist
 - d. Drawing contour lines
 - e. Drawing the grading plan

D. Floor Plan

1. Floor Plan Symbols
 - a. Wall
 - b. Door
 - c. Window

- d. Schedule
- e. Cabinets, fixtures, and appliances
- f. Common Sizes
- g. Floor plan materials
- h. Stairs
- i. Hallways
- j. Fireplaces
- k. Solid fuel burning appliances
- l. Room titles
- m. Other floor plan symbols
- 2. Floor Plan Dimensions & Notes
 - a. Aligned dimensions
 - b. Floor plan dimensions
 - c. Common sizes
 - d. Dimensioning floor plan features
 - e. Notes and specifications
 - f. Using metric
- 3. Floor Plan Layout
 - a. Laying out a floor plan
 - b. Second floor plan layout
 - c. Basement plan layout
 - d. Floor plan drawing checklist

E. Roof Plans

- 1. Roof Plan Components
 - a. Types of roof
 - b. Pitches
 - c. Shapes
 - d. Materials
 - e. Ventilation and Access
- 2. Roof Plan Layout
 - a. Shape
 - b. Structural material
 - c. Non-structural material
 - d. Dimensions
 - e. Notes
 - f. Drawing gable plans
 - g. Drawing hip roof plans
 - h. Drawing Dutch roof plans

F. Elevations

- 1. Introduction to Elevations
 - a. Required elevations
 - b. Types of elevations
 - c. Scales
 - d. Placement

- e. Surface materials in elevation
 - f. CADD elevation symbols
 - 2. Elevation Layout & Drawing Techniques
 - a. Layout
 - b. Finished quality lines
 - c. Lettering
 - d. Alternative elevations
 - e. Drawing roof intersections
 - f. Drawing irregular shapes
 - g. Drawing grades
 - 3. Millwork & Cabinet Technology, Cabinet Elevation, and Layout
 - a. Types of millwork
 - b. Cabinets
 - c. Cabinet elevations and layout
- G. Supplemental Floor Plan Drawings
- 1. Electrical Plans
 - a. Terms and definitions
 - b. Circuit design
 - c. Energy conservation
 - d. Home automation
 - e. Design considerations
 - f. Universal electrical installations
 - g. Electrical symbols
 - h. Wiring specifications
 - i. Metrics
 - j. Steps in drawing the plan
 - k. Checklist
 - 2. Plumbing Plans
 - a. Terms and definitions
 - b. Size of pipes
 - c. Conservation
 - d. Schedules
 - e. Drawings
 - f. Water systems
 - g. Drainage and vent
 - h. Sewage disposal
 - i. Checklist
 - 3. Heating, Ventilation, & AC
 - a. Energy conservation code
 - b. Central forced air systems
 - c. Hot water systems
 - d. Heat pump
 - e. Zone control
 - f. Radiant heat

- g. Thermo stats
- h. Recovery and ventilation
- i. Symbols
- j. Drawings
- 4. Foundation
 - a. Types of foundations
 - b. dimensioning foundation components
- H. Advanced Architectural CAD
 - 1. Floor Plans
 - 2. Section Views
 - 3. Renderings
 - 4. Elevations

Grading Policy

Students will be graded in the areas listed below, based on a standard points system.

Class work – Each assignment will be given an individual point value. Students will be made aware of that value when assignments are handed out.

Quizzes – 25 pts

Participation/Use of class time – 25pts each week

Projects – 50 Points

Final Project – 200 Points

Final Presentation – 100 Points