

## **COURSE OUTLINE**

### **Architecture 135 Architectural Design IV**

#### **I. Catalog Statement**

Architecture 135 is a study of the concepts of two story commercial building construction. Emphasis will be placed on the basic planning and design of medium sized, two-story commercial building of concrete block or tilt-wall construction. Current construction techniques and applicable building codes will be covered.

Units – 3.0

Lecture Hours – 2.0

Total Laboratory Hours – 4.0

(Faculty Laboratory Hours – 4.0 + Student Laboratory Hours – 0.0 = 4.0 Total Laboratory Hours)

Prerequisite: Architecture 130.

Recommended Preparation: Engineering 109, Architecture 250

#### **II. Course Entry Expectations**

Skills Level Ranges: Reading 5; Writing 5; Listening/Speaking 5; Math 3.

Prior to enrolling in the course, the student should:

1. possess the ability to communicate a three-dimensional idea using hand sketching techniques;
2. possess basic skills in the use of the AutoCAD drafting and design program and traditional drafting methods to complete a set of architectural commercial working drawings;
3. understand the concepts of design for small commercial structure;
4. possess the necessary skills required to create a traditional or digital model of a commercial structure;
5. understand the concepts of perspective drawing and possess the ability to complete digital or traditional-method renderings of a small commercial architectural project.

### III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

1. plan and design a two-story commercial structure;
2. draw a set of workings drawings for a medium sized commercial structure;
3. understand the basic principles of design of public structures;
4. expand use of the building code and how it applies to two-story commercial buildings;
5. demonstrate familiarity with a body of technical vocabulary coinciding with the study of two story commercial construction.

### IV. Course Content

- |    |   |          |
|----|---|----------|
| A. | Introduction to the project   | 6 hours  |
|    | <ol style="list-style-type: none"><li>1. Size and location limitations</li><li>2. Building department considerations</li><li>3. Presentation methods of finished project</li><li>4. Use of architectural materials<ol style="list-style-type: none"><li>a. Reference material sources-Sweet's catalogs</li><li>b. Manufacturers' resources</li><li>c. Library and on-line resources</li></ol></li></ol>   |          |
| B. | Design considerations   | 24 hours |
|    | <ol style="list-style-type: none"><li>1. Scale and proportion</li><li>2. Weather and sunlight</li><li>3. Traffic flow</li><li>4. Commercial office design</li><li>5. Code requirements<ol style="list-style-type: none"><li>a. Residential vs. commercial</li><li>b. Occupant Safety</li></ol></li><li>6. Utility needs</li><li>7. Parking requirements</li><li>8. Elevators and Stairs<ol style="list-style-type: none"><li>a. Location within building</li><li>b. Egress requirements</li><li>c. Other design considerations</li></ol></li><li>9. Landscaping and other site requirements</li><li>10. Client considerations</li></ol> |          |
| C. | Architectural drawing techniques  | 46 hours |
|    | <ol style="list-style-type: none"><li>1. Freehand sketching.</li><li>2. Preliminary sketches<ol style="list-style-type: none"><li>a. Instructor and peer critique</li></ol></li><li>3. Presentation drawings</li></ol>  |          |

4. Working drawings
  - a. Cartooning of sheets
  - b. CAD file setup
5. Examples of “real-world” projects
- D. Construction concerns 12 hours
  1. Structural needs for a two-story concrete block building
  2. Materials and construction techniques
    - a. Concrete block
    - b. Tilt-up construction
    - c. Footer design
    - d. Floor Slab design
    - e. Structural steel needs
    - f. Roof diaphragm
- E. Presentation of project 8 hours
  1. Portfolio review and critique
  2. Creating a three dimensional study model of project
  3. Verbal and written final presentation

## V. **Methods of Presentation**

The following instructional methodologies may be used in the course:

- a. lecture;
- b. multimedia;
- c. guest speakers;
- d. individual and group projects;
- e. field trips.

## VI. **Assignments and Methods of Evaluation**

1. Midterm examination.
2. Final individual project. (eg. this will typically consist of a set of working drawings or architectural model of a two story, 20,000 square foot commercial structure.)
3. Final examination or presentation (eg. this will typically be a 5-10 minute presentation of the final project to the instructor and the rest of the class.)
4. Portfolio review and critique. (eg. this is typically a critique of all of the work that the student has accomplished during the course. The work is bound in a portfolio and evaluated by the instructor.)

**VII. Textbook**

Wakita, O., The Professional Practice of Architectural Working Drawings,  
Current Edition, New York: John Wiley and Sons, 2003.  
10<sup>th</sup> Grade Textbook Reading Level. ISBN: 0-471-39540-4

**VIII. Student Learning Outcomes**

1. Students will demonstrate the process to plan, design and document a two story commercial structure.
2. Students will discuss the application of the Uniform Building Code (UBC) and/or the International Building Code (IBC) and how it applies to commercial buildings and their project.
3. Students will describe the terms used in the technical vocabulary as it applies to the study of two story commercial construction and their project.