ARCH130 : Commercial Architectural Design I

General Information

Author:	• David D Martin
Course Code (CB01) :	ARCH130
Course Title (CB02) :	Commercial Architectural Design I
Department:	ARCH
Proposal Start:	Spring 2025
TOP Code (CB03) :	(0201.00) Architecture and Architectural Technology
CIP Code:	(04.0901) Architectural Technology/Technician.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000275559
Curriculum Committee Approval Date:	05/22/2024
Board of Trustees Approval Date:	07/16/2024
Last Cyclical Review Date:	05/22/2024
Course Description and Course Note:	ARCH 130 is a study of the concepts of basic commercial building construction. Emphasis is placed on the planning and design of a small commercial retail center of concrete block construction. Students learn the current construction techniques and applicable building codes.
Justification:	Mandatory Revision
Academic Career:	• Credit
Author:	• David D Martin

Academic Senate Discipline

Primary Discipline:	• Architecture
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

• Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

No value

Transferability & Gen. Ed. Options

General Education Status (CB25)

Not Applicable

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	108
Total Course Out-of-Class Hours	54
Total Student Learning Hours	162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	1.5	3
Laboratory Hours	4.5	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	27
Laboratory	81
Studio	0
Total	108
Course Out-of-Class Hours	
Lecture	54
Laboratory	0
Studio	0
Total	54

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

ARCH102 - Architectural Drafting And Design (in-development)

Objectives

- Demonstrate proficiency with a expanded technical vocabulary.
- Execute a complete set of architectural working drawings using either traditional or computer aided drafting methods.
- Develop a three dimensional model of his/her residential design.
- Use International Building Code (IBC).

AND

Advisory

ARCH120 - Residential Architectural Design I (in-development)

Objectives

- Plan and design a two story structure.
- Document selection of components from structural manufacturing literature.

AND

Advisory

ARCH250 - Introduction To Autodesk Revit Architecture (in-development)

Objectives

- Complete a series of architectural drafting problems using the Revit software.
- Explain the relationship between floor plans, elevations, and section views within a parametric environment.
- Create three-dimensional models and construction documents for a residential design project.
- Create photo-realistic renderings of architectural projects.

Entry Standards

Entry Standards

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Laboratory
Methods of Instruction	Multimedia
Methods of Instruction	Guest Speakers

Out of Class Assignments

- Field trip (e.g. a written summary or summaries of visits to local construction sites, tour of architectural offices)

Methods of Evaluation	Rationale
Exam/Quiz/Test	Midterm examination
Project/Portfolio	Final individual project (e.g. working drawings or architectural model of a two story, three or four bedroom residential structure)
Exam/Quiz/Test	Final examination or presentation (e.g. 5-10 minute presentation of the final project to the instructor and the rest of the class)
Project/Portfolio	Portfolio review and critique (e.g. critique of all of the work that the student has accomplished during the course)

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Bakhoum, Nagy R., Wakita, Osamu A.	The Professional Practice of Architectural Working Drawings	New York: John Wiley	2023	9781119875338

Other Instructional Materials (i.e. OER, handouts)

No Value

Materials Fee

No value

Learning Outcomes and Objectives

Course Objectives

Plan and design a single story commercial structure.

Draw a set of working drawings for a commercial structure.

Recognize the basic principles of design of public structures.

Expand use of the building code and how it applies to commercial buildings.

SLOs

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. Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
ARCH Architectural Drafting & Design - Certificate	Demonstrate skills in the production of working drawings of residential and commercial structures; discuss how design/drawing techniques, application of the International Building Code (IBC), building construction techniques, and other standards affect the design of their structure.
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)
ARCH Architectural Drafting and Design	Demonstrate skills in the production of working drawings of residential and commercial structures; discuss how design/drawing techniques, application of the International Building Code (IBC), building construction techniques, and other standards affect the design of their structure.
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)

Describe the technical vocabulary as it applies to the study of one story commercial construction. Expected Outcome Performance: 70.0

ILOs Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
ARCH Architectural Drafting & Design - Certificate	Demonstrate skills in the production of working drawings of residential and commercial structures; discuss how design/drawing techniques, application of the International Building Code (IBC), building construction techniques, and other standards affect the design of their structure.
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)
ARCH Architectural Drafting and Design	Demonstrate skills in the production of working drawings of residential and commercial structures; discuss how design/drawing techniques, application of the International Building Code (IBC), building construction techniques, and other standards affect the design of their structure.
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)

Describe the procedure to construct a three-dimensional physical or virtual model of the student's project. Expected Outcome Performance: 70.0

ILOs Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.

Course Content

Lecture Content

Introduction to the Project (3 Hours)

- Size and location limitations
- Building department considerations
- Presentation methods of finished project
- Use of architectural materials
- Reference material sources-Sweet's catalogs
- Manufacturers' resources
- Library and On-Line resources

Design Considerations (5 Hours)

- Scale and proportion
- Weather and sunlight
- Traffic flow
- Retail shop design
- Code requirements
    - Residential vs. commercial
    - Occupant Safety
- Utility needs
- Parking requirements
- Client considerations
    - Underrepresented students in architecture
    - Americans with Disabilities Act(ADA) requirements

Architectural Preliminary Drawing Techniques (6 Hours)

- Freehand sketching.
- Preliminary sketches
- Instructor and peer critique

Construction Concerns (6 Hours)

- Structural needs for a one-story concrete block building
- Materials and construction techniques
- Concrete block
- Footer design
- Slab design
- Roof diaphragm
- Walkway cover
- Pilaster design

Architectural Working Drawings (5 Hours)

- Presentation drawings
- Preparation for working drawings
    - CAD file setup
    - Blocking in sheets
- Working drawings
    - Site plan
    - Floor plan
    - Elevations
    - Structural drawings & details
        - Foundation plan
        - Roof and wall framing plans
        - Framing details
        - Foundation details
        - Examples of “real-world” projects

Presentation of Project (2 Hours)

- Portfolio review and critique
- Creating a three dimensional study model of project
- Verbal and written final presentation

Total Hours: 27

Laboratory/Studio Content

Introduction to the Project (6 Hours)

- Size and location limitations
- Building department considerations
- Presentation methods of finished project
- Use of architectural materials
- Reference material sources-Sweet's catalogs
- Manufacturers' resources
- Library and On-Line resources

Design Considerations (20 Hours)

- Scale and proportion
- Weather and sunlight
- Traffic flow
- Retail shop design
- Code requirements
    - Residential vs. commercial
    - Occupant Safety
- Utility needs
- Parking requirements
- Client considerations
    - Underrepresented students in architecture
    - Americans with Disabilities Act(ADA) requirements

Architectural Preliminary Drawing Techniques (14 Hours)

- Freehand sketching.
- Preliminary sketches
- Instructor and peer critique

Construction Concerns (14 Hours)

- Structural needs for a one-story concrete block building
- Materials and construction techniques
- Concrete block
- Footer design
- Slab design
- Roof diaphragm
- Walkway cover
- Pilaster design

Architectural Working Drawings (19 Hours)

- Presentation drawings
- Preparation for working drawings
    - CAD file setup
    - Blocking in sheets
- Working drawings
    - Site plan
    - Floor plan
    - Elevations
    - Structural drawings & details
        - Foundation plan
        - Roof and wall framing plans
        - Framing details
        - Foundation details
        - Examples of “real-world” projects

Presentation of Project (8 Hours)

- Portfolio review and critique
- Creating a three dimensional study model of project
- Verbal and written final presentation

Total Hours: 81

Additional Information

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

No

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

No Value

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liason?

No Value

Did you contact the DEIA liaison?

No

Were there any DEIA changes made to this outline?

No Value

If yes, in what areas were these changes made:

No Value

Will any additional resources be needed for this course? (Click all that apply)

No Value

If additional resources are needed, add a brief description and cost in the box provided.

No Value