

ARCH120 : Residential Architectural Design I

General Information

Author:	<ul style="list-style-type: none">David D Martin
Course Code (CB01) :	ARCH120
Course Title (CB02) :	Residential 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) :	CCC000015696
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 120 presents a study of the numerous considerations required to build a two story dwelling. Discussion covers fundamentals of design, structural considerations, building code considerations, and techniques of construction.
Justification:	Mandatory Revision
Academic Career:	<ul style="list-style-type: none">Credit
Author:	<ul style="list-style-type: none">David D Martin

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none">Architecture
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08) Course is not a basic skills course. <input type="checkbox"/> 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 <ul style="list-style-type: none">Grade with Pass / No-Pass Option Course Support Course Status (CB26) Course is not a support course
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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.

Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience

Education Status (CB10)

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.
- Establish continued ability in the use of drafting instruments and media.
- 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

ENGR109 - Computer Aided Design AutoCAD I (in-development)

Objectives

- Create a complete set of CAD drawings that communicates technical information for a complex geometric part or assembly.

AND

Advisory

ARCH105 - Perspective Graphics with Introduction to SketchUp and Rhinoceros (in-development)

Objectives

- Demonstrate skills in the use of the SketchUp drawing software program.

AND

Advisory

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

Objectives

- Complete a series of architectural drafting problems using the Revit software.
- Create three-dimensional models and construction documents for a residential design project.

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

Methods of Instruction Presentations

Out of Class Assignments

- Field trip (e.g. a written summary or summaries of visits to local construction sites, tour of architectural offices)
- Final individual project. (eg. this will typically consist of a set of working drawings or architectural model of a two story, three or four bedroom residential structure.)

Methods of Evaluation

Rationale

Exam/Quiz/Test

Midterm examination

Exam/Quiz/Test

Final examination or presentation (e.g. a written or verbal presentation of the final project to the instructor and the rest of the class)

Project/Portfolio

Portfolio review and critique. (e.g. portfolio 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)

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
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Other Instructional Materials (i.e. OER, handouts)

No Value

Materials Fee

No value

Learning Outcomes and Objectives

Course Objectives

Plan and design a two story structure.

Draw a complete set of documentation or working drawings.

Document selection of components from structural manufacturing literature.

Expand usage of the International Building Code (IBC).

Demonstrate familiarity with a body of technical vocabulary coinciding with the study of two story construction.

SLOs

Discuss the application of the International Building Code (IBC) to 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)

Explain various technical terms as they apply to the study of two story residential construction.

Expected Outcome Performance: 70.0

ILOs
Core ILOs

Communicate clearly, ethically, and creatively; listen actively and engage respectfully with others; consider situational, cultural, and personal contexts within or across multiple modes of communication.

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

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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)

Evaluate structural manufacturing literature to select the proper structural building components for 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.

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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)

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

Introduction to the Project (2 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 in a two-story structure
- Stairs
- Location within structure
- Design and construction
- Code requirements
- Client considerations
- Designing for client/student cultural relevancy

Architectural Drawing Techniques (8 Hours)

- Freehand sketching.
- Preliminary sketches
- Instructor and peer critique
- Presentation drawings
- Use of the SketchUp software
- Working drawings setup
- Cartooning of sheets
- Computer Aided Design (CAD) file setup
- Examples of "real-world" projects

Construction Concerns (4 Hours)

- Structural needs in a two-story wood frame structure
- Materials and construction techniques

Presentation of Project (2 Hours)

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

Architectural Working Drawings (8 Hours)

- Site plan
- Floor plan
- Roof plan
- Landscaping plan

- Exterior elevations
- Interior elevations - notations

Total Hours: 27

Laboratory/Studio 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 (19 Hours)

- Scale and proportion
- Weather and sunlight
- Traffic flow in a two-story structure
- Stairs
- Location within structure
- Design and construction
- Code requirements
- Client considerations
- Designing for client/student cultural relevancy

Architectural Drawing Techniques (27 Hours)

- Freehand sketching.
- Preliminary sketches
- Instructor and peer critique
- Presentation drawings
- Use of the SketchUp software
- Working drawings setup
- Cartooning of sheets
- Computer Aided Design (CAD) file setup
- Examples of "real-world" projects

Construction Concerns (10 Hours)

- Structural needs in a two-story wood frame structure
- Materials and construction techniques

Presentation of Project (3 Hours)

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

Architectural Working Drawings (19 Hours)

- Site plan
- Floor plan
- Roof plan
- Landscaping plan
- Exterior elevations
- Interior elevations - notations

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 liaison?

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