ARCH250 : Introduction To Autodesk Revit Architecture

General Information

Author:	• David D Martin
Course Code (CB01) :	ARCH250
Course Title (CB02) :	Introduction To Autodesk Revit Architecture
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) :	CCC000600317
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 250 teaches the fundamentals of the latest version of Autodesk Revit Architecture design software. Projects of a residential and commercial nature are utilized. Techniques used in the creation of floor plans, section views, elevations, schedules, and other construction documents are covered.
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)

Course is not a support course

Transferability & Gen. Ed. Options

General Education Status (CB25)

Not Applicable

Transferability

Transferable to CSU only

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

ARCH101 - Drafting And Basic Design (in-development)

Objectives

- Describe the meaning of basic architectural vocabulary terms.
- Demonstrate proficiency in drawing on vellum and in the use of drawing instruments by the completion of various drawing assignments.
- Describe limited examples of the use of the International Building Code as it applies to residential construction.

OR

Prerequisite

ARCH141 - Interior Design (in-development)

Objectives

- Complete a series of basic floor plan designs.
- Demonstrate a familiarity with various architectural styles.
- Complete projects dealing with the arrangement of furniture, floor and window treatments, lighting and accessory planning.
- Prove familiarity with basic design elements.
- Demonstrate a familiarity with a selected technical vocabulary.
- Demonstrate a familiarity with a selected portion of the uniform building code.

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	Demonstrations
Methods of Instruction	Guest Speakers
Methods of Instruction	Presentations

Out of Class Assignments

- Weekly forum posts (e.g. short written response to weekly forum question)
- Individual and group projects (e.g. completion of projects from lab manual)
- Written research (e.g. writing a research paper on an assigned topic)

Methods of Evaluation	Rationale
Exam/Quiz/Test	Performance tests (e.g. timed drawing tests)
Exam/Quiz/Test	Midterm examination (e.g. written questions and a performance-based drawing project)
Exam/Quiz/Test	Final examination (e.g. written questions and a performance-based drawing project)
Project/Portfolio	Portfolio review and critique (e.g. a critique of all of the work that the student has accomplished during the course)

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Martin, D.	Instant Revit!: A Quick and Easy Guide to Learning Autodesk® Revit® 2021	Seattle: CreateSpace Independent Publishing Platform	2020	979-8650217909

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

No Value

Materials Fee

No value

Learning Outcomes and Objectives

Course 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.

SLOs

Demonstrate the use of the two-dimensional tools to create flat 2D drawings. 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 techniques to accomplish drawings utilizing different computer aided design (CAD) software;
ARCH Architectural Drafting and Design	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;

Create a 3D model of a residential two-story house. Expected Outcome Performance: 0.0

Modify family parameters of various Revit families. 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 techniques to accomplish drawings utilizing different computer aided design (CAD) software;
ARCH Architectural Drafting and Design	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;

Create sheet views of various views of a residential structure. 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 and Design	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;
ARCH Architectural Drafting & Design - Certificate	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;

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 (2 Hours)

- Course expectations
- Overview of tutorials and projects
- Introduction to the graphic user interface (GUI) of the Revit software
- Introduction to Parametric Modeling and Building Information Modeling (BIM)
- Use of the 2D tools
- Adding lines, circles, geometric shapes
- Adding text
- Annotating the drawing
- Constraining the model
- Group Tool

Residential Project Model (6 Hours)

- Creating and placing walls
- Door types and placement
- Windows types and placement
- Fixture Placement
- Casework placement
- Roof types and placement
- Light fixtures and ceiling systems
- Furniture placement
- Adding and modifying topography
- Placement of floors
- Placement of thickened slab edges
- Setting up the design options

Residential Schedules and Photo-Realistic Renderings (6 Hours)

- Room, window, and door tags
    - Purpose
    - Placement
    - Modification
- Room finish, door, and window schedules
- Interior room renderings
- Exterior renderings
    - Sun settings

Residential Architectural Construction Documents (5 Hours)

- Title block and border set-up
- Drawing sheet setup
- Site plan and topography
- Plan views
    - Dimensioning
- Elevations
    - Exterior
    - Interior
- Sections
    - Building
    - Wall

Residential Structural and Miscellaneous Construction Documents (4 Hours)

- Structural Plans
    - Roof Framing
        - Plan
        - Details
    - Foundation
        - Plan
        - Details
- Color Room Legends
- Furniture Plans
- Electrical Plans
    - Electrical Symbol Legend

Presentation of Final Residential Project (4 Hours)

- Adding final dimensions and annotations to sheets
- Printing drawings in a PDF (Portable Document Format) file format
- Assembling a digital portfolio of the residential project

Total Hours: 27

Laboratory/Studio Content

Introduction (8 Hours)

- Course expectations
- Overview of tutorials and projects
- Introduction to the graphic user interface (GUI) of the Revit software
- Introduction to Parametric Modeling and Building Information Modeling (BIM)
- Use of the 2D tools
- Adding lines, circles, geometric shapes
- Adding text
- Annotating the drawing
- Constraining the model
- Group Tool

Residential Project Model (11 Hours)

- Creating and placing walls
- Door types and placement
- Windows types and placement
- Fixture Placement
- Casework placement
- Roof types and placement
- Light fixtures and ceiling systems
- Furniture placement
- Adding and modifying topography
- Placement of floors
- Placement of thickened slab edges
- Setting up the design options

Residential Schedules and Photo-Realistic Renderings (15 Hours)

- Room, window, and door tags
    - Purpose
    - Placement
    - Modification
- Room finish, door, and window schedules
- Interior room renderings
- Exterior renderings
    - Sun settings

Residential Architectural Construction Documents (19 Hours)

- Title block and border set-up
- Drawing sheet setup
- Site plan and topography
- Plan views
    - Dimensioning
- Elevations
    - Exterior
    - Interior
- Sections
    - Building
    - Wall

Residential Structural and Miscellaneous Construction Documents (16 Hours)

- Structural Plans
    - Roof Framing
        - Plan
        - Details
    - Foundation
        - Plan
        - Details
- Color Room Legends
- Furniture Plans
- Electrical Plans
    - Electrical Symbol Legend

Presentation of Final Residential Project (12 Hours)

- Adding final dimensions and annotations to sheets
- Printing drawings in a PDF (Portable Document Format) file format
- Assembling a digital portfolio of the residential project

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