ARCH 27 Course Outline as of Fall 2016

CATALOG INFORMATION

Dept and Nbr: ARCH 27 Title: 3-D DIGITAL MODELING
Full Title: Architectural 3-D Digital Modeling
Last Reviewed: 2/6/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	2.00	Lab Scheduled	3.00	8	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00 Total Student Learning Hours: 105.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	ARCH 60B

Catalog Description:
Introduction to the use of digital 3-Dimensional (3-D) modeling tools, such as SketchUp, AutoCAD, and Revit, applied to designs for architectural, landscape, and/or interior design environments.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100; AND Concurrent Enrollment in ARCH 25B

Limits on Enrollment:

Schedule of Classes Information:
Description: Introduction to the use of digital 3-Dimensional (3-D) modeling tools, such as SketchUp, AutoCAD, and Revit, applied to designs for architectural, landscape, and/or interior design environments. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100; AND Concurrent Enrollment in ARCH 25B

Limits on Enrollment:
Transfer Credit: CSU;UC.
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 2010	Inactive:	
UC Transfer:	Transferable	Effective:	Spring 2010	Inactive:	Spring 2018

CID:

Certificate/Major Applicable:
Major Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, students will be able to:
1. Effectively use three-dimensional modeling programs to support two- and three-dimensional design development and design presentations.
2. Effectively use digital tools to apply texture, color, light and shadows to models.
3. Export models and views to other programs and import information from other sources to use in model construction.
4. Print or plot graphic representations of digital three-dimensional models in gray tones and color.
5. Use digital modeling skills in preparing 2-dimensional presentations of designs for architectural, landscape, and/or interior design environments.

Topics and Scope:

I. 3-D organization and design principles such as line, shape, geometry, value, color, texture, space, light, unity and variety, focal point and emphasis, balance and rhythm, and scale and proportion
II. Role of the three-dimensional model in studying forms and presenting design concepts
III. Principles and concepts of digital 3-D modeling
IV. Introduction to Sketch-Up, AutoCAD and Revit for use in modeling and presentations
   A. Basic tools and commands
   B. Creating two-dimensional forms
   C. Modeling three-dimensional forms
   D. Identifying and applying textures and colors
   E. Modeling light and shadow
   F. Importing and exporting information
   G. Designing and preparing presentations with Sketch-Up
   H. Printing and plotting
   I. Digital tour of the space

V. Interpreting physical models to create digital models
VI. Interpreting and scanning drawings to create digital models
VII. Modeling considerations for the architect, interior designer and landscape architect
VIII. Application to architectural, and/or interior design and/or landscape environments
IX. Presenting the results of digital modeling
X. Oral presentations and critiques

LAB Topics:
I. Learning to use modeling programs; learning to print assignments; interpreting data to create models
II. Creating 3-D models from drawings and physical sources
III. Applying 3-D organization and design principles to architectural, landscape and/or interior design environments
IV. Creating models of environments, and tours of those models

Assignment:

1. Read 20- 40 pages per week
2. Exercises: Using modeling programs; printing assignment and interpreting data to create models (6-12)
3. Models of architectural, landscape and/or interior design environments and tours of those models (2-4)
4. Oral presentations and critiques (6-8)
5. Quizzes (1-3)
6. Final exam, or final modeling project with oral presentation and critiques

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Models of architectural, landscape, and/or interior design environments and tours of those models	Problem solving 30 - 40%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Exercises: Learning to use modeling programs; learning to print assignment; Models: Interpreting data to create models	Skill Demonstrations 40 - 50%

Exams: All forms of formal testing, other than skill performance exams.

Objective quizzes; Objective final exam, or final modeling project with oral presentation and critiques	Exams 10 - 20%

Other: Includes any assessment tools that do not logically fit into the above categories.

Oral presentations and critiques	Other Category 5 - 15%

Representative Textbooks and Materials:
SketchUp for Dummies, by Aidan Chopra; Wiley and Sons;2014.
SketchUp 2014 for Architectural Visualization by Thomas Bleicher; Packt Publishing; 2014 2nd edition
SketchUp for Interior Design by Lydia Cline; Wiley and Sons; 2014
Modeling the Envirionment by B. Cantrell and N. Yates; Wiley and Sons; 2012
Instructor prepared materials