

**ARCH 156 Course Outline as of Fall 2011****CATALOG INFORMATION**

Dept and Nbr: ARCH 156 Title: SKETCHUP FOR 3D MODELING

Full Title: Using SketchUp Software for 3D Modeling

Last Reviewed: 3/12/2007

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	17.5	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: 33 - 3 Enrollments Total

Also Listed As:

Formerly:

**Catalog Description:**

Use of the SketchUp software program to produce 3D models of buildings, interiors, and construction details. Students will learn to use 3D modeling as part of the design process and to prepare finished presentations.

**Prerequisites/Corequisites:****Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: Use of the SketchUp software program to produce 3D models of buildings, interiors, and construction details. Students will learn to use 3D modeling as part of the design process and to prepare finished presentations. (Grade or P/NP)

Prerequisites/Corequisites:

Recommended:

Limits on Enrollment:

Transfer Credit:

Repeatability: 3 Enrollments Total

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:

<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
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<b>CSU Transfer:</b>	Effective:	Inactive:
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<b>UC Transfer:</b>	Effective:	Inactive:
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**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon completion of this course, the student will be able to:

1. Use SketchUp software to produce 2D and 3D scale models using primarily the mouse tool as input.
2. Produce accurate perspective drawings from basic construction plans and two-dimensional drawings of objects.
3. Produce simple rendered surfaces for presentations, for architecture, landscapes, interiors, and construction details, including 3D detailing to generate isometric details.
4. Import and export files from sources such as AutoCAD, 3DS files, raster based files, and a variety of other rendering and modeling packages.
5. Repeating students will use updated versions of SketchUp and/or apply program to advanced projects.

### **Topics and Scope:**

- I. Using basic computer drawing tools and techniques
  - A. Mouse
  - B. Toolbox
  - C. Selecting objects
  - D. Drawing lines and basic geometric forms
  - E. Scale
- II. Creating planar geometric shapes and surfaces using the mouse tool
- III. Creating and viewing (rotating) basic geometry in 3 dimensions
- IV. Drawing in 3D
  - A. Pencil tool
  - B. Push-pull tools
- V. Geometric components
  - A. Moving in components in relation to one another
  - B. Keeping components coplanar

- VI. Interpreting basic construction plans and two dimensional drawings of objects
- VII. Connecting and generating forms
- VIII. 3D model
  - A. Completing a 3D model of a house
  - B. Producing a mirrored version
  - C. Producing an array of identical model units
  - D. Rescale all or any component of the model
- IX. Input and output files to / from:
  - A. CAD
  - B. 3DS files
  - C. Raster based files (digital images, 3PG, JPEG, TIFF, etc.)
  - D. Other rendering and modeling packages
- X. Introduction to rendering techniques and styles
  - A. Wire frame
  - B. Blue line
  - C. Ink and pen
  - D. Markers
  - E. Photo-realism
- XI. With repeat
  - A. New version(s) of Sketch-up
  - B. Advanced projects

**Assignment:**

1. Reading, approximately 10 - 20 pages per week.
2. Weekly assigned drawings illustrating techniques and skills related to each class. Assignments will be printed out on paper for grading by instructor.
3. Final project consisting of a completed 3D model, printed for grading and presented on-screen during a class presentation.
4. 2-3 brief essays (2-3 pages each) about issues related to using the SketchUp software.
5. Final exam.
6. Repeating students will use new version(s) of SketchUp software and/or apply program to advanced projects.

**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.

Essays
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Writing 5 - 10%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None
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Problem solving 0 - 0%
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**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Assigned drawings; final project

Skill Demonstrations  
60 - 80%

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

Multiple choice, True/false, Matching items, Completion, Short answer

Exams  
10 - 20%

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

Attendance and participation

Other Category  
0 - 10%

**Representative Textbooks and Materials:**

The SketchUp 5 Workbook: Building Your Ideas in SketchUp: A Student Guide.

Bonnie Roskes, @Last Publications, 2005.

Instructor prepared materials.