

**APTECH 87 Course Outline as of Fall 1997****CATALOG INFORMATION**

Dept and Nbr: APTECH 87 Title: CAD RENDER &amp; MODEL

Full Title: 3D Modeling and Rendering Using CAD

Last Reviewed: 9/14/2020

| Units   | Course Hours per Week |                   | Nbr of Weeks | Course Hours Total |                         |
|---------|-----------------------|-------------------|--------------|--------------------|-------------------------|
| Maximum | 2.00                  | Lecture Scheduled | 2.00         | 17                 | Lecture Scheduled 34.00 |
| Minimum | 2.00                  | Lab Scheduled     | 3.00         | 8                  | Lab Scheduled 51.00     |
|         |                       | Contact DHR       | 0            |                    | Contact DHR 0           |
|         |                       | Contact Total     | 5.00         |                    | Contact Total 85.00     |
|         |                       | Non-contact DHR   | 3.00         |                    | Non-contact DHR 24.00   |

Total Out of Class Hours: 68.00

Total Student Learning Hours: 204.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

A review of 3D Modeling skills covered in ApTech57, Advanced AutoCAD, and a comprehensive study of AutoCAD's Render Program. The student will construct, view, and render computer-generated 3D models. Rendering concepts, lighting sources and angles, reflectivity, surface designation and defining scenes will be covered. Model walkthrough and fly around slide shows will be created.

**Prerequisites/Corequisites:**

Course Completion of APTE 57 ( or APTECH 57)

**Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: A comprehensive study of AutoCAD's 3-Dimensional Modeling and Rendering capabilities. The student will construct, view, and render computer generated 3D Models. (Grade Only)

Prerequisites/Corequisites: Course Completion of APTE 57 ( or APTECH 57)

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **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:           |
| <b>CSU Transfer:</b> | Transferable         | Effective: Fall 1994 | Inactive: Fall 2021 |
| <b>UC Transfer:</b>  |                      | Effective:           | Inactive:           |

**CID:**

**Certificate/Major Applicable:**

Not Certificate/Major Applicable

## **COURSE CONTENT**

**Outcomes and Objectives:**

The student will demonstrate proficiency in utilizing AutoCAD's Render Program as it applies to 3D Surface and Solid Models through creation of renderings. 3D Models and "SLIDE SHOWS" will also be created by the student.

**Topics and Scope:**

1. Review of wire-frame, surface, and Solid 3D Modeling Construction and Viewing Skills.
2. Introduction to Rendering concepts:
  - a. Ambient, Distant, and Point Lights
  - b. Light Sources and Angles
  - c. Light Sources and Reflectivity
  - d. Point Light Sources, Distance and Fall-off
3. Rendering Existing 3D Models:
  - a. Selecting a Rendering Type
  - b. Creating, Saving, and Restoring Views
  - c. Inserting, Modifying, Moving, and Adjusting Lights
  - d. Defining and Modifying Scenes
  - e. Establishing Finishes
4. Construction of Surface and Solid Models
5. Rendering of Student Surface and Solid Models
6. Creation of a "SLIDE SHOW" utilizing student generated models.

**Assignment:**

Existing 3D Models will be rendered, Surface and Solid Models

will be created and rendered, and slide shows will be created utilizing student generated models.

### 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.

Quizzes, Exams

Problem solving  
10 - 30%

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

Class performances, Performance exams, DATA BASE DRAWINGS

Skill Demonstrations  
40 - 60%

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

True/false, Completion, SHORT ESSAY REVIEW QUESTIONS

Exams  
20 - 40%

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

None

Other Category  
0 - 0%

### Representative Textbooks and Materials:

AUTOCAD RENDER REFERENCE MANUAL, LATEST EDITION.