

**APTECH 59 Course Outline as of Summer 2022****CATALOG INFORMATION**

Dept and Nbr: APTECH 59 Title: ARCHITECTURAL CAD

Full Title: Architectural CAD

Last Reviewed: 2/6/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.50	17.5	Lecture Scheduled	26.25
Minimum	2.00	Lab Scheduled	1.50	6	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 52.50

Total Student Learning Hours: 105.00

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:**

Preparation of residential construction documents using AutoCAD. Problem solving skills will be developed by applying code requirements to a proposed building addition. The student will create typical construction drawings including plans, sections, elevations, schedules and details.

**Prerequisites/Corequisites:**

Course Completion of APTECH 46

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

Description: Preparation of residential construction documents using AutoCAD. Problem solving skills will be developed by applying code requirements to a proposed building addition. The student will create typical construction drawings including plans, sections, elevations, schedules and details. (Grade Only)

Prerequisites/Corequisites: Course Completion of APTECH 46

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: Spring 2002	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

**Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Apply current local building codes and proper construction practices to the development of a residential addition.
2. Utilize AutoCAD software to produce architectural working drawings for a residential addition.

**Objectives:**

During the course, the students will:

1. Research and apply local building codes relevant to the given project.
2. Select appropriate construction materials relevant to the given project.
3. Identify appropriate construction practices that govern project design.
4. Use proper CAD standards and file organization.
5. Produce working drawings using the AutoCAD software program.
6. Identify the role of Building Information Modeling (BIM) in the design industry.

**Topics and Scope:**

I. Scope of Project

- A. Existing site and/or construction documents
- B. Client's requirements
- C. Client's monetary budget
- D. Timeline for project development and completion of working drawings

II. Schematic Development

- A. Researching pertinent building codes and local regulations
- B. Developing rough diagrams of site and floor plans

III. Project Refinement

- A. Architectural style
- B. Pertinent construction practices and materials

IV. AutoCAD Drawing Conventions

- A. Template drawing environment and settings
- B. Printing overview
- V. Construction Drawings
  - A. Site plan
  - B. Floor plan
  - C. Foundation and floor framing plan
  - D. Ceiling and roof framing plan
  - E. Building sections
  - F. Exterior elevations
  - G. Detail drawings
  - H. Utility plan
- VI. Sheet Set Organization and Plotting
- VII. Building Permits
  - A. Submittal process
  - B. Plan check
  - C. Revisions
- VIII. Role of Building Information Modeling (BIM) in the Design Industry

All topics are covered in both the lecture and lab portions of this course.

**Assignment:**

Lecture Related Assignments:

1. Reading assignments (10-15 pages per week)
2. Project presentations (1-2)
3. Quizzes (0-4)
4. Exams (1-2)
5. Final exam

Lab Related Assignments:

1. CAD working drawings (6-12 sheets)

**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 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.

Working drawing sheets

Problem solving  
50 - 60%

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

None

Skill Demonstrations  
0 - 0%

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

Quizzes, exams, final exam

Exams  
30 - 40%

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

Project presentations

Other Category  
10 - 20%

**Representative Textbooks and Materials:**

AutoCad 2017: A Problem Solving Approach. Sham Tickoo, AutoDesk Press 2016

Instructor prepared materials