

DRAF 101: BEGINNING COMPUTER AIDED DESIGN (CAD)

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2025
Credits:	3
Total Contact Hours:	108
Lecture Hours :	36
Lab Hours:	72
Hours Arranged:	0
Outside of Class Hours:	72
Total Student Learning Hours:	180
Strongly Recommended:	ENGL C1000.
Transferable to CSU:	Yes
Transferable to UC:	No
Grading Method:	Standard Letter

Catalog Course Description

A basic course for pre-engineering, pre-architecture students, and other students who have no previous Computer Aided Design (CAD) and mechanical drawing experience. 36 lecture hours, 72 lab hours.

Course Objectives

- Demonstrate basic understanding of Computer Aided Design (CAD) and mechanical drawing practices. These include line types, text, hand lettering, dimensioning, sections, geometric constructs and CAD model and paper space.
- Use and care for the various types of drafting equipment. These include parallel bar, T square, triangles, scales, and other equipment.
- Use Orthographic projection, geometric construction, lettering, sections, pictorials and dimensioning
- Compose working drawings which show the comprehension of orthographic projection, geometric construction, lettering, and dimensioning.
- Illustrate the basic concepts of mechanical drawing practices, and translate the concepts to drawings in CAD.

Major Course Content

1. Line Types
2. Use of Computers CAD and Drafting Equipment
3. Geometric Construction for CAD and Mechanical Drawing
4. Theory of Shape Description Projection (Orthographic)
5. Sections
6. Principles of Size Description
7. Working Drawings
8. Pictorial Drawing:
 - a. Isometric
 - b. Oblique
 - c. Perspective

Lab Content

- Week 1 Introduction to CAD and drafting. (Sketch)
- Week2 Sketching, Lettering & use of Scale
- Week 3 & 4 Drawing Geometric Constructions
- Week 5 Sketch Orthographic views
- Week 6 Sketch Orthographic views / CAD
- Week 7 & 8 Orthographic views / CAD
- Week 9 & 10 CAD layering (Template)
- Week 11 CAD Text/and Dimensioning
- Week 12 Plotting to scale
- Week 13 Section Drawing (Sketch / CAD)
- Week 14 Pictorial Drawing (Sketch / CAD)
- Week 15 Review (Drawings / Portfolio)
- Week 16 Final Exam

Suggested Reading Other Than Required Textbook

Technical Drawing by Giesecke, Published by Prentice Hall, current addition.

Examples of Required Writing Assignments

Resume, letter of introduction and research papers as required.

Examples of Outside Assignments

Students will produce Axonometric, oblique, and perspective drawings. Solve problems - Exploded cube and various shading problems. Practice skills from the text book and handouts. Read required materials -Text book and hand outs. Students will be required to complete the following types of assignments outside of the regular class time: draw, study, answer questions, practice skills, read required materials, solve problems, write essays, research papers, lab reports, and journals. Students will also observe activities related to course content, participate in activities related to course content.

Instruction Type(s)

Lab, Lecture, Online Education Lab, Online Education Lecture