

**DFT 12 - Beginning AutoCAD Drafting****Catalog Description****Transfer Status:** CSU/UC**Unit(s):** 3.00**Lecture:** 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)**Lab:** 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)**Total:** 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: This course introduces students to basic drafting concepts using both freehand sketching and AutoCAD, an industry-standard computer-aided drafting (CAD) application. It is intended for drafting majors, engineering majors, interior design majors and pre-architectural students. Topics include line and geometric shape development, freehand sketching, basic AutoCAD commands, text commands, file management, orthographic and pictorial projection, dimensioning, sectioning, auxiliaries, and architectural drawings using sketching and a two-dimensional (2D) drafting application. Document reproduction, printing and plotting will be introduced and practiced.

Objectives

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

1. Create representative freehand sketches of objects using lines, curves and circles to create technical shapes using orthographic and pictorial techniques.
2. Properly set up AutoCAD with drafting settings to create, edit and save drawing files.
3. Draw, edit and dimension freehand sketches or technical details, using AutoCAD including the control of software options and creation of paper-based prints.
4. Produce, edit and dimension orthographic projection drawings, pictorial drawings in mechanical and architectural applications using AutoCAD.

Course Content**Topic Titles / Suggested Time Topic****Lecture**

<u>Topics</u>	<u>Lec Hrs</u>
Sketching	2.00
Starting AutoCAD	1.00
Drawing Setup and Saving Drawing Files	1.00
Basic Drawing Commands	1.00
Cartesian Coordinate Problems	2.00
Templates and Layers	2.00
Dimensioning	3.00
Mechanical Parts Problems	4.00
Geometric Construction Problems	2.00
Orthographic Construction Problems	4.00
Sectional Views	2.00
Auxiliary Drawings	2.00
Annotation and Pictorial Drawings Applications	4.00
Architectural Drawings, Layers and Scales	4.00

Total Hours: 34.00**Lab**

<u>Topics</u>	<u>Lab Hrs</u>
Sketching	3.00
Drawing Setup and Saving Drawing Files	1.00
Basic Drawing Commands	1.00
Cartesian Coordinate Problems	3.00
Templates and Layers	3.00
Dimensioning	4.00
Mechanical Parts Problems	6.00
Geometric Construction Problems	3.00

Topics	Lab Hrs
Orthographic Construction Problems	8.00
Sectional Views	3.00
Auxiliary Drawings	4.00
Annotation and Pictorial Drawing Applications	6.00
Architectural Drawings, Layers and Scales	6.00
Total Hours: 51.00	

Methods of Instruction

- A. Class Activities
- B. Collaborative Group Work
- C. Demonstrations
- D. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- E. Lecture
- F. Multimedia Presentations

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Projects
- D. Homework
- E. Class participation

Examples of Assignments

Reading Assignments

1. Read the section in your text about dimension applications and be prepared to answer questions from the reading in the next class session.
2. Read the chapter on Section Views. Consider the question, "Why are section views important to drafting?" and be prepared to discuss in the next class session.

Writing Assignments

1. Having read the chapter on Section Views, write complete answers to the worksheet questions and submit to the instructor.
2. Complete the instructor-led exercise on drafting parameters in class, and write a brief summary (minimum 250 words) of the parameters used to prepare your DWG file for submission.

Out-of-Class Assignments

1. Prepare a freehand sketch of the kitchen floorplan provided by the instructor and submit your sketch at the next class meeting.
2. For extra credit, search the acronym NIST and the term ISO and prepare hand-written definitions for each. Submit at the start of the next class session. No late submissions will be accepted.

Recommended Materials of Instruction

Shih, R. (2024). Principles and Practices: An Integrated Approach to Engineering Graphics and AutoCAD 2025. *SDC Publications, 2024*. 9781630576813.

Minimum Qualifications

Drafting
Engineering (Masters Required)

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