

# BUTTE COLLEGE

## COURSE OUTLINE

### I. CATALOG DESCRIPTION

#### **DFT 12 - Beginning AutoCAD Drafting**

**3 Unit(s)**

**Prerequisite(s):** NONE

**Recommended Prep:** Reading Level IV; English Level III; Math Level III

**Transfer Status:** CSU/UC

34 hours Lecture

51 hours Lab

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.

### II. OBJECTIVES

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

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

### III. COURSE CONTENT

#### **A. Unit Titles/Suggested Time Schedule**

		Lecture	
<u>Topics</u>			<u>Hours</u>
1. Sketching			2.00
2. Starting AutoCAD			1.00
3. Drawing Setup and Saving Drawing Files			1.00
4. Basic Drawing Commands			1.00
5. Cartesian Coordinate Problems			2.00
6. Templates and Layers			2.00
7. Dimensioning			3.00
8. Mechanical Parts Problems			4.00
9. Geometric Construction Problems			2.00
10. Orthographic Construction Problems			4.00
11. Sectional Views			2.00
12. Auxiliary Drawings			2.00
13. Annotation and Pictorial Drawings Applications			4.00
14. Architectural Drawings, Layers and Scales			4.00
Total Hours			34.00

## Lab

<u>Topics</u>	<u>Hours</u>
1. Sketching	3.00
2. Drawing Setup and Saving Drawing Files	1.00
3. Basic Drawing Commands	1.00
4. Cartesian Coordinate Problems	3.00
5. Templates and Layers	3.00
6. Dimensioning	4.00
7. Mechanical Parts Problems	6.00
8. Geometric Construction Problems	3.00
9. Orthographic Construction Problems	8.00
10. Sectional Views	3.00
11. Auxiliary Drawings	4.00
12. Annotation and Pictorial Drawing applications	6.00
13. Architectural Drawings, Layers and Scales	6.00
Total Hours	51.00

#### IV. **METHODS OF INSTRUCTION**

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

#### V. **METHODS OF EVALUATION**

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

#### VI. **EXAMPLES OF ASSIGNMENTS**

- A. Reading Assignments
  - 1. Please read the section in your text about dimension applications and be prepared to answer questions from the reading at the next class.
  - 2. Please read the chapter on Section Views. Consider the question "Why are section views important to drafting?" and be prepared to discuss at the start of next class.
- B. Writing Assignments
  - 1. Complete the instructor-led exercise on drafting parameters in class, and write a brief summary of the parameters used to prepare your DWG file for submission.
  - 2. Having read the chapter on Section Views, write complete answers to the worksheet questions and submit to the instructor when complete.
- C. 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, please search the acronym NIST and the term ISO and prepare hand-written definitions for each and turn in at the start of the next class. No late submissions will be accepted.

## VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

- A. Shih, Randy H.. Principles and Practices: An Integrated Approach to Engineering Graphics. 2011 Edition. Schroff Development Corporation, 2011.

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