

College of San Mateo
Official Course Outline

1. **COURSE ID:** DRAF 122 **TITLE:** Computer-Aided Drafting II
Units: 3.0 units **Hours/Semester:** 32.0-36.0 Lecture hours; 48.0-54.0 Lab hours; and 64.0-72.0 Homework hours
Method of Grading: Grade Option (Letter Grade or P/NP)
Prerequisite: DRAF 121

2. **COURSE DESIGNATION:**
Degree Credit
Transfer credit: CSU; UC

3. **COURSE DESCRIPTIONS:**
Catalog Description:
Intermediate computer aided drafting for students who have completed a basic course in AutoCAD. Includes plotting, wireframe modeling, AutoCAD 3D modeling, render, slide shows, blocks and attributes. A materials fee in the amount shown in the Schedule of Classes is payable upon registration.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
Upon successful completion of this course, a student will meet the following outcomes:
 1. Apply appropriate software file management procedures
 2. Create drawings using the drawing and edit commands of the AutoCAD drafting software.
 3. Apply ASME Y14 Standards in dimensioning and tolerancing in drawings.
 4. Create and use symbol libraries in drawings.
 5. Create architectural drawings for a residential structure.
 6. Develop mechanical drawings.
 7. Archive (electronic files) and output drawings with printers and plotters.
 8. Cultivate and assess an active commitment to finding creative and inventive solutions and integrate their technical computer graphics knowledge to achieve viable solutions in producing CAD drawings. CAD drawings.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
Upon successful completion of this course, a student will be able to:
 1. Apply appropriate software file management procedures.
 2. Create drawings using the drawing and edit commands of the AutoCAD drafting software.
 3. Apply ASME Y14 Standards in dimensioning and tolerancing in drawings.
 4. Create and use symbol libraries in drawings.
 5. Create architectural drawings for a residential structure.
 6. Develop mechanical drawings.
 7. Archive (electronic files) and output drawings with printers and plotters.
 8. Cultivate and assess an active commitment to finding creative and inventive solutions and integrate their technical computer graphics knowledge to achieve viable solutions in producing CAD drawings. CAD drawings.

6. **COURSE CONTENT:**
Lecture Content:
 1. PUTTING IT ALL TOGETHER
 - A. SPEED
 - B. TECHNIQUE
 - C. SCALE
 - D. PLOTTING
 - E. UPDATING DRAWINGS
 - F. DIMVARS
 2. AUTOCAD 3D
 - A. ELEV
 - B. VPOINT
 - C. HIDE
 - D. X,Y,Z, FILTERS

- E. 3DFACE
 - F. 3D LINES
 - G. UCS
 - H. DVIEW
 - I. 3D REVOLUTIONS
 - J. 3D MODELING
 - K. AUTOSHADE
3. SLIDE SHOW
4. BLOCKS AND ATTRIBUTES
- A. CREATING
 - B. EXTRACTING
 - C. INSERTING

7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Other (Specify):
- a. Communication: Students will read and translate data relative to geometry, fabrication and assembly/installation requirements into a graphical form easily understood by others with similar technical understanding.
 - b. Reading assignments: Instructor will assign reading from course text and syllabus each week
 - c. Computation: Students will use basic mathematical operations as required to define graphic geometry parameters.
 - d. Writing/drawing assignment:
 - i) Student will be required to submit one research paper on a CADD drafting topic. The paper will include a clear general and specific purpose, introduction, body, and conclusion, use of effective organizational format, and smooth transitional devices
 - ii) Students will keep a portfolio of drawings that reflect their progress throughout the semester.
 - e. Skill building:
 - i) Instructor will demonstrate various CADD drawing processes.
 - ii) Students will be asked to perform specific drawing exercises at increasingly challenging levels.
 - f. Multimedia:
 - i) Students will watch PowerPoint presentations of drawing constructions and techniques and analyze them according to theory and concepts taught in class.
 - g. Critical thinking and problem solving:
 - i) Lecture/discussion to understand use of specific drawing techniques.
 - ii) Students will select and apply appropriate spatial relationship principles to determine problem solutions.

8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

- a. Sketches of Planned Drawings- to reflect students' ability to summarize a strategy in drawing assembly strategies.
- b. Completion of Timed Assigned Drawings - to demonstrate students' ability to use evidence and reasoning skills to complete work.
- c. Written Exams - to reflect students' knowledge of theories, concepts, recognize and use evidence and skills presented in class lectures, text and discussions.

Reading Assignments:

Reading assignments are research related using publications in the CSM library as well as the internet.

Specifically using the following:

- Industrial Design magazines
- Engineering Design magazines
- Architectural magazines
- Furniture and product design texts

Other Outside Assignments:

Outside assignments are specific to the needs of the class based on student's interest/major field of study such as architecture, industrial design, engineering and construction/fabrication.

9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Written homework - to reflect students' ability to write procedures that meet evidence and reasoning skills objectives; Presentations - to demonstrate students' ability to inform and use evidence and reasoning skills when appropriate; Written exams/timed drawing exams - to reflect students' knowledge of theories, concepts, recognize and use evidence and skills presented in class demonstrations, lectures, text and discussions; Participation - to reflect students' involvement in class discussions, giving feedback on projects to fellow classmates, doing lab projects and homework assignments; Final Project - to reflect students' knowledge of theories, concepts, skill level, ability to organize information, and apply reasoning skills presented in demonstrations, class discussions, lectures and text.

10. **REPRESENTATIVE TEXT(S):**

Possible textbooks include:

A. Tickoo. *AutoCAD 2015: A Problem Solving Approach*, ed. Clifton Park, NY: Thompson-Delmar , 2015

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Course Originator: Valeria Vorobey