

Virginia Western Community College

CAD 111

Computer Aided Drafting and Design I

Prerequisites

MTE 1, MTE 2, and MTE3

Course Description

Introduces technical drafting from the fundamentals through advanced drafting practices. Teaches lettering, metric construction, technical sketching, orthographic projection, sections, intersections, development, fasteners, theory and applications of dimensioning and tolerances. Includes pictorial drawing, and preparation of working and detailed drawings. Part I of II. (Credit will not be awarded for both CAD 111 and DRF 111.)

Semester Credits: 3 Lecture Hours: 2 Lab/Recitation Hours: 2

Required Materials

Textbook:

SolidProfessor, Author: Shift, 13:MTC:25441123

Other Required Materials:

USB Flash Drive

Required: free cloud based storage account.

Recommended additional: USB portable

To complete assignments outside the classroom, the student will need access to a current computer and a high-speed internet service and media player. The college provides an open lab for those students without home access to needed software. Students should provide their own stapler and pencil sharpener as these items are not provided in the classrooms.

The following supplementary materials are available:

Tutoring: available free of charge in the open lab M302.

VWCC offers an open computer lab format available throughout each semester if needed.

AutoDesk provides each student with access to a downloadable full version of the AutoCad program. The student can download the program onto their personal computer from the storage site provided in Blackboard.

Course Outcomes

- A. Have a general understanding of CAD operations.
- B. Have a thorough knowledge of the start-up procedures for the system.
- C. Have a working knowledge of steps required for initializing commands to the CAD system using the keyboard.
- D. Have a working knowledge of the steps required for initializing commands for the CAD system using the cursor.
- E. Be able to generate basic geometric constructions.
- F. Understand and be able to perform various tasks associated with modifying and grouping.
- G. Create drawings using various menus.
- H. Be able to command the system to produce a plot of any currently active drawing in the system.

Topical Description

Academic Week	Topic	
Before Start Date	Read Chapter 1	
Week 1	Introduction Syllabus Review Blackboard Check J Drive: Share area Adjust monitor	Start AutoCAD Define key Work Area terms Set up Work Area and toolbars Dock/ Undocked/ Opening Command Entry Line, circles, arcs, delete Saving Work Assignment turn in demonstration
Week 2	Introduction to hand sketching Grammar of lines Orthographic projections	Single View Multi-view Alignment of views

Week 3	Check Homework Solutions (orthographic drawings from iso) Review work area and CAD setup Line, circles, erase Methods of drawing a line Crossing windows	Tan tan rad Zoom, Panning, set units, work area Polar / Angles Basic plotting Limits trim	
Week 4	Check Homework Solutions Offset Fillet / chamfer Ellipse, polygons Xline	Text Object Snaps Blue Boxes	
Week 5	Layers setup Line Types Line weight	Copy, move, rotate, scale Using title block Review for test	
Week 6	Bhatch Test		Test #1
Week 7	Array, Polar array How to dimension Rules / Dimension toolbar Dimension layer		Long Term Assignment Announced
Week 8	Check dimension problems Orthographic drawing 3 views and alignment from iso Paper set up		Long Term Assignment Final Idea Submitted
Week 9			
Week 10	Continue orthographic drawings. Auxiliary Views		
Week 11	Cross sections		
Week 12			Test #2
Week 13	Paper Space		
Week 14	Develop long term assignment.		
Week 15	Continue develop work on long term assignment, Have students turn in current status and progress.		
Week 16			Test #3 (Exam) Long Term Assignment Completed

Notes to Instructors

(List information about optional topics, departmental exams, etc)

1. The final exam/project is worth 20% of the final grade.