

CAD 111

Revised Spring 2019

CAD 111
Technical Drafting I

Prerequisites:

Basic Computer Knowledge, 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.) Course utilizes AutoDesk CAD software and AutoDesk Certification materials.

Required Materials:

Textbook:

Autodesk AutoCAD Certified User Study Guide, 2019 Edition
William G. Wyatt Ed.D., CET
978-1-63057-260-0

Recommended additional Materials:

USB portable, Stapler, Pencil Sharpener

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 following supplementary materials are available:

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.

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Course Outcomes:

- A. Have a general understanding of CAD operations and a thorough knowledge of the start-up procedures for a CAD system.
- B. Have a working knowledge of steps required for initializing commands to the CAD system using the keyboard.
- C. Be able to generate geometric constructions using a CAD system and be able to use CAD modification tools.
- D. Create industry standard detailed drawings using various CAD tools and by free hand sketching.
- E. Be able to command the system to produce a plot of an active drawing in the system.
- F. Be able to reproduce industry standard detailed drawing files with industry standard dimensions.

Topical Description:

Week	Topics
1	Introduction and Syllabus, AUTOCAD Interface and Environments, 2D vs. 3D, drawing file types, Start a New drawing, Simple Drafting commands, Saving files; AutoDesk Certification opportunities
2	Object Selection, Status Bar and Drafting helpers, Zoom, Mtext, Properties, Cartesian Coordinate System, Paper Space and Plotting a Layout, Viewports
3	Theory and Application of Industry Standards, Imperial vs. Metric, Scale, Geometric Shapes, Drawing Panel, Modify with Grips
4	Modify Panel, Text Style, Text edit, Review Applications
5	Test 1
6	Industry Math Conversions, More Industry Standards, Object Properties, Application of Industry Line Types, LTScale, Layers
7	Template with Border and Title Block, Industry standard Detailed Drawings including 3 rd Angle Projection, Orthographic Views, Pictorial Isometrics, Auxiliary Views, Sketching with proportional scale
8	Detailed drawings, Pline review, Final Project Review
9	Theory and Applications of ASME Dimensions, Dimension Style, Applications of a Template,
10	ASME Dimensions, Sections, Hatching, Blocks, Design Center, Final Project Review
11	ASME Dimensions, Review Applications, In-Class Assessment
12	Test 2
13	Final Project Work with project progress check-up
14	AutoCad 3D introduction, Solid Modeling
15	Exam and Course Review, Project plotting
16	Final Exam

Notes to Instructors:

Required in course materials:

- Industry Standards
- 3rd Angle projection
- Imperial vs Metric units
- ASME industry standards and guidelines for dimensions to prepare students for CAD 241 and CAD 242
- Each student will be required to complete weekly in-class assignments, out of class assignments and a special project.
- (AutoCad) ACU Certification materials used in course materials.