Collin College - Continuing Education
COURSE SYLLABUS

COURSE INFORMATION

Course Number: CADD 6255

Course Title: AutoCAD Fundamentals

Course Description:
This course is designed for students with little or no computer aided design and drafting experience. Practice drawings are used extensively to demonstrate use of commands and to provide the student with topic-specific exercises for hands-on experience. Topics include the application interface; naming, storing, and retrieving drawings; creating and modifying elements; placing, mirroring, rotation, and scaling components; adding text and dimensions to drawings; using layers to organize drawings; snaps, grids, and orthogonal mode; controlling lineweights using colors and layers; and printing and sharing your work.

Course Prerequisite(s):
Familiarity with using a personal computer, including use of the mouse and keyboard. Some experience using Windows-based software, such as emailing, opening and saving files is helpful..

Required Textbook:
Mastering AutoCAD 2021 and AutoCAD LT 2021
George Omura with Brian C. Benton
Publisher: Sybex/Wiley, ISBN: 978-1119715351

Software download is available to students for installation on personal computer:
https://www.autodesk.com/education/edu-software/overview

Course Objectives:
1. Extensive hands-on experience with AutoCAD, creating, storing and retrieving predefined components.
2. Placing, rotating, and scaling components.
3. Creating and Modifying elements; rubber banding; adding text and dimensions to drawings, multilayering drawings, grids, orthogonal mode.
4. Setting up and automating the printing process.

Next course recommendation: AutoCAD Advanced, Revit Architecture Essentials

Instructor Notes:
This course will teach you the fundamentals of AutoCAD, the leading design and drafting software, allowing you to take control of a professional workstation with confidence. It will give you the skills needed to create, edit, and manage drawings and help you prepare to work in any industry that uses CAD drawings.

Lesson Plan – by week or session

Session 1: **Introduction & Background, A Few Basic Tools**
Brief history,
Graphics primer: view types
Essential Concepts of Geometry
Vector and raster files
The AutoCAD Interface
Menus, toolbars, command line
Mousing vs. typing commands
Zooming, Panning
The Origin point – the center of AutoCAD's universe

Session 2: **Precision and Accuracy**
Coordinates, Relative and Absolute
Direct Distance Input
Orthogonal mode
Units – Architectural, decimal, metric, surveyor
Undo and redo

Session 3: **Object Creation and Modification**

Lines and Polylines

Circles, ellipses
Text, Multitext, Quick Leaders, Multileaders
Hatches, Arcs
Rectangles
Points, point styles, dividing a line using points
Complex Entities – ellipses, polygons, splines

Session 4: **Editing Objects**
Selecting Objects—selection sets, fence
Copying Objects
Offsetting Objects
Moving Objects
Resizing Objects
Modifying Objects—Chamfer, Fillet, Stretch, Break, Explode
Trim & Extend – the sibling commands

Session 5: **Navigation & Control**
World Coordinate System (WCS)
User Coordinate System (UCS)
Creating and Saving Views
Zooming and Panning
The Snap Basket setup and use

Session 6: **Drawing Organization**
The Grid, setting up and snapping to the grid
Layers, Layer Properties Manager, Layer States Manager
Layer Colors, Object Colors, and Lineweights
Linetypes, loading and using
Linetype Scale to control the line's appearance
List Command & Properties Dialog Box

Session 7: **Annotating the Drawing**
Grips and the Wheel of Five—Stretch, Move, Rotate, Scale, Mirror Pedit—editing polylines, using line and arc segments
Editing Text and Multitext objects
Dimensioning—linear, angular, radius, diameter, continuing, aligned
Dimension, a new tool for placing dimensions
Adding text to dimensions: prefix, suffix, multiline
Distance, area calculation

Session 8: **Printing & Plotting, Power Tools**
Printing from Model Space and Paper Space
Page Setup for quick, easy printing
Printing to Paper or to PDF electronic files
Custom Hotkeys and the Command Alias Editor
Xrefs: Creating, inserting, clipping
Hatch Patterns – more possibilities
Arrays—rectangular, polar
Filtering Selections using Quick Select
Working with Groups
Using the Design Center

Course Sessions: The topics listed above are a general guideline to indicate all topics that will be covered during your course. Do not plan your personal calendar based on these sessions. All class sessions will involve both theory and hands-on exercises in which the students will use the tools covered to make actual drawings.

Method of Evaluation: Unless otherwise stated, course completion is evaluated based on attendance. Students must be in attendance at least 80% of the class time in order to be considered a successful completer of the course.

Americans with Disabilities Act: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal opportunity. It is the student's responsibility to contact the ACCESS office, SCC-G200 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current Collin Student Handbook for additional information.
http://www.collin.edu/studentresources/personal/studenthandbook.aspx