Course Title: AutoCAD Fundamentals

Date/Time/Sessions: Mon Wed Fri | (dates) | 8:00 AM to 5:00 PM

Instructor: Mark S. Sadler
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Class Web Site: http://collincad.bestcadtips.com

Course Description:
This course is designed for students with little or no computer aided design and drafting software experience. Practice drawings are used extensively to demonstrate use of commands and to provide the student with topic-specific drawings for hands-on experience. Topics include applications; creating, storing, and retrieving predefined components; placing, rotation, and scaling components; modifying; rubber banding; adding text and dimensions to drawings, multilayering drawings, girds, orthogonal mode; data storage format for writing auxiliary programs; input and output devices; resolution and physical limitations.

Course Prerequisite(s): General familiarity with using Windows-based computer programs, keyboard and mouse

Course Objectives:
1. Have hands on experience with applications. Creating, storing and retrieving predefined components.
2. Placing, rotating and scaling components.
3. Modify; rubber banding; adding text and dimensions to drawings, multilayering drawings, girds, orthogonal mode.
4. Have a data storage format for writing auxiliary programs; input and output devices; resolution and physical limitations.

Student Expectations:

Textbook: REQUIRED
Mastering AutoCAD 2015 and AutoCAD LT 2015
by George Omura, Brian C. Benton
Publisher: Sybex; ISBN: 978-1118575048

Certification Notes:
No certificates, however transcripts may be obtained by contacting the registrar’s office.

Next Class Possibilities:
Building Information Modeling (BIM) Basic or Google SketchUp.
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 session
Session 1: **Introduction & Background**
- Brief history of CAD,
- Graphics primer
- 2D and 3D geometry basics
- Vector and raster file

**The Basics**
- The AutoCAD Interface
- Menus, toolbars, command line
- Mousing vs. typing commands, command alias editor
- Scale drawings
- Zooming, panning
- Origin point
- Coordinates, relative and absolute
- Direct distance input
- Orthogonal mode
- Units – Architecture, decimal, metric, surveyor
- Undo and redo

**Drawing Objects**
- Lines
- Circles, ellipses
- Text, multitext
- Arcs, elliptical arcs
- Rectangles
- Points, point styles
- Complex Entities – polygons, splines, multilines

**Navigation & Control**
- World Coordinate System (WCS)
- User Coordinate System (UCS)
- Zoom & Pan
- Snapping
- Grid, snap to grid
- Layers, layer manager
- Colors
- Linetypes
- List & Inquiry

Session 2: **Editing**
- Selecting Objects—selection sets, fence
- Copying Objects
Moving Objects
Resizing Objects
Editing Objects—chamfer, fillet, offset, stretch, break, divide
Trim & Extend
Grips—move, rotate, scale, mirror
Pedit—editing polylines
Editing text and multtext
Dimensioning—linear, angle, radius, diameter, continuous, aligned, baseline, Quick Dimension
Adding text to dimensions
Distance, area calculation

**Isometric drawing**

Session 3: **Power Tools**
Blocks—creating, redefining, inserting
Xrefs
Hatch Patterns
Arrays—rectangular, polar
Mirroring
Filtering Selections
Groups
Design Center

**Printing & Plotting**
Model Space
Paper Space