

LEARNING OBJECTIVES

After completing this lesson, you will be able to:

1. Start AutoCAD program
2. Understand AutoCAD Workspaces
3. Recognize all of the features in the AutoCAD Window

LESSON 1

STARTING AUTOCAD

To Start AutoCAD use one of the 2 methods below.
(Be patient it may take a few minutes to load. It is a large program)

1. Select **Start / All Programs / Autodesk / AutoCAD 2013**
or
Double click on the **AutoCAD 2013 desktop shortcut icon**.
2. The “**Welcome**” window should appear.

Note: Your computer should be connected to the Internet.

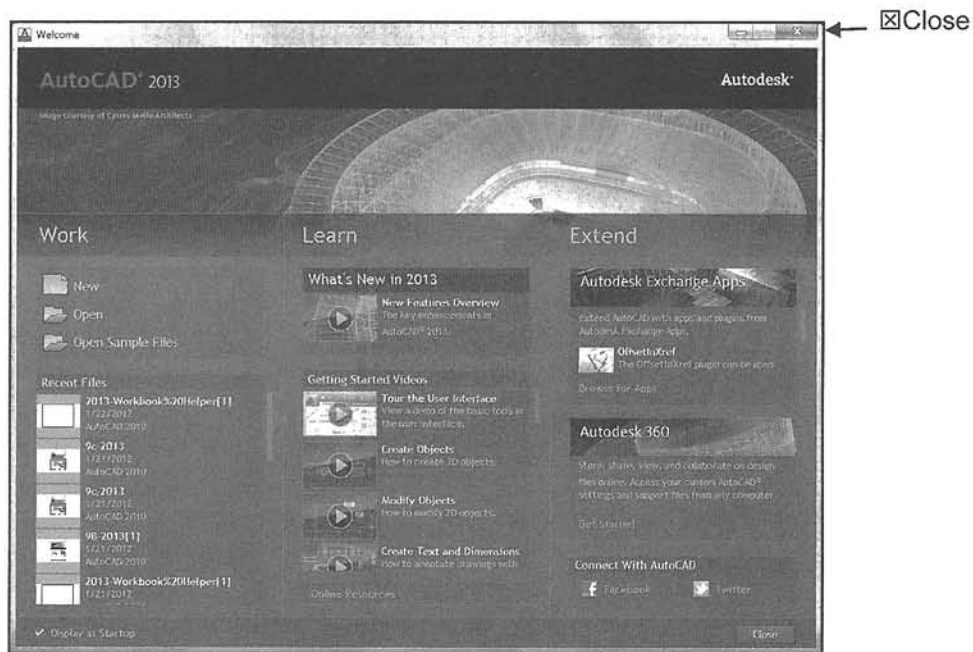
Welcome window includes three areas: **Work**, **Learn**, and **Extend**.

Work allows you to start a **New** drawing, **Open** an existing drawing or **Open a sample drawing** file.

Learn provides you with helpful videos to introduce you to the new AutoCAD 2013 software.

Extend allows you to browse and download applications developed by third-party developers using **Autodesk Exchange**. **Autodesk Cloud** introduces you to the new online document storage available to AutoCAD users.

3. If you would prefer not to view the **Welcome** window at this time just select Close.



Note:

Welcome window will appear each time you start up AutoCAD if you have not unchecked the **Display at Startup** located in the lower left corner.

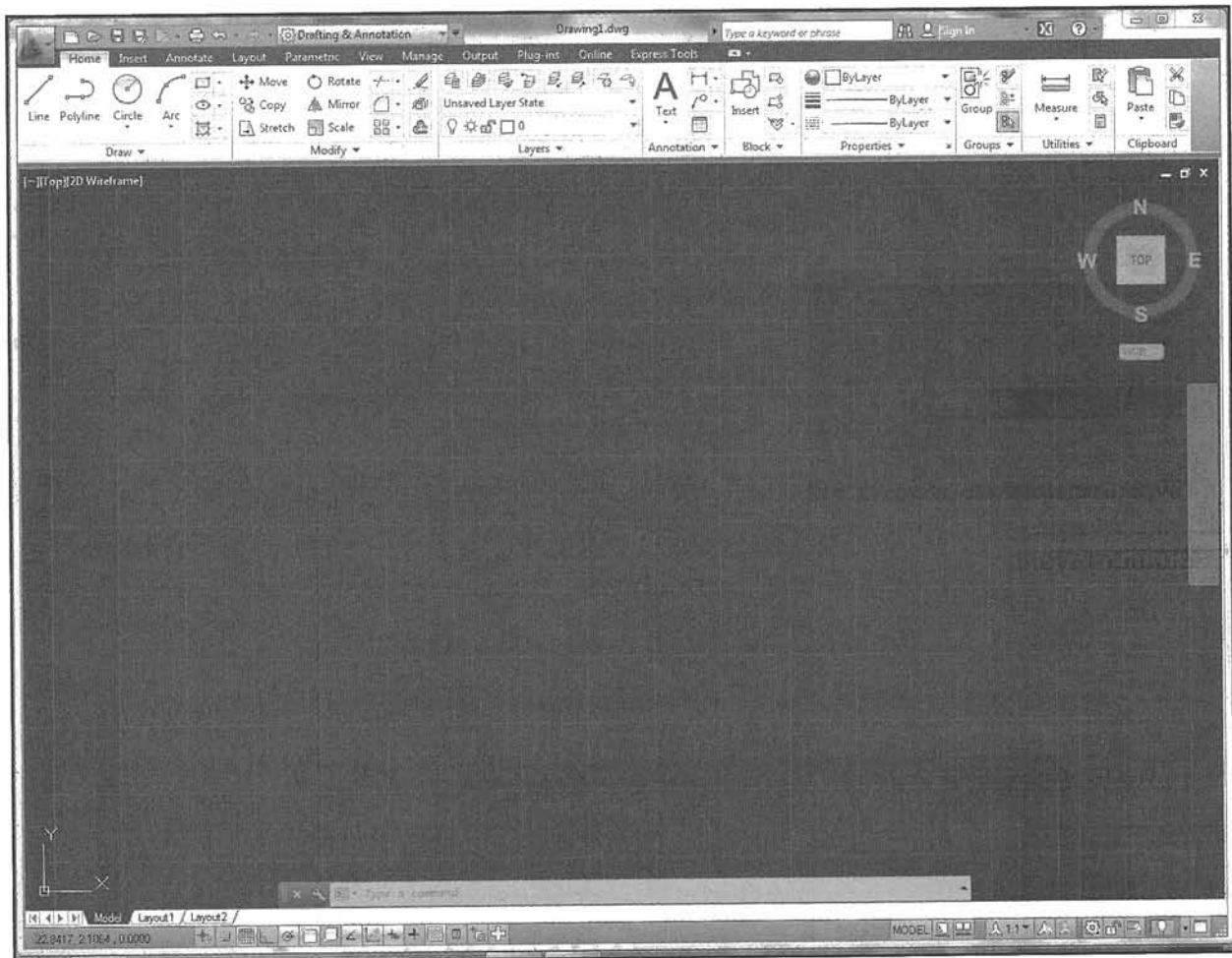
STARTING AUTOCAD....continued

After you have closed the Welcome window, the “Application Window” should appear.

Note: If your screen does not appear as shown below go to the **Intro section** of this workbook and follow the steps for configuring AutoCAD to match the workbook configuration.

The following pages will describe each area and element.

I know you are anxious to start drawing but be patient and read the remainder of this lesson. It is very important that you understand and are familiar with AutoCAD's interface.



AUTOCAD APPLICATION WINDOW

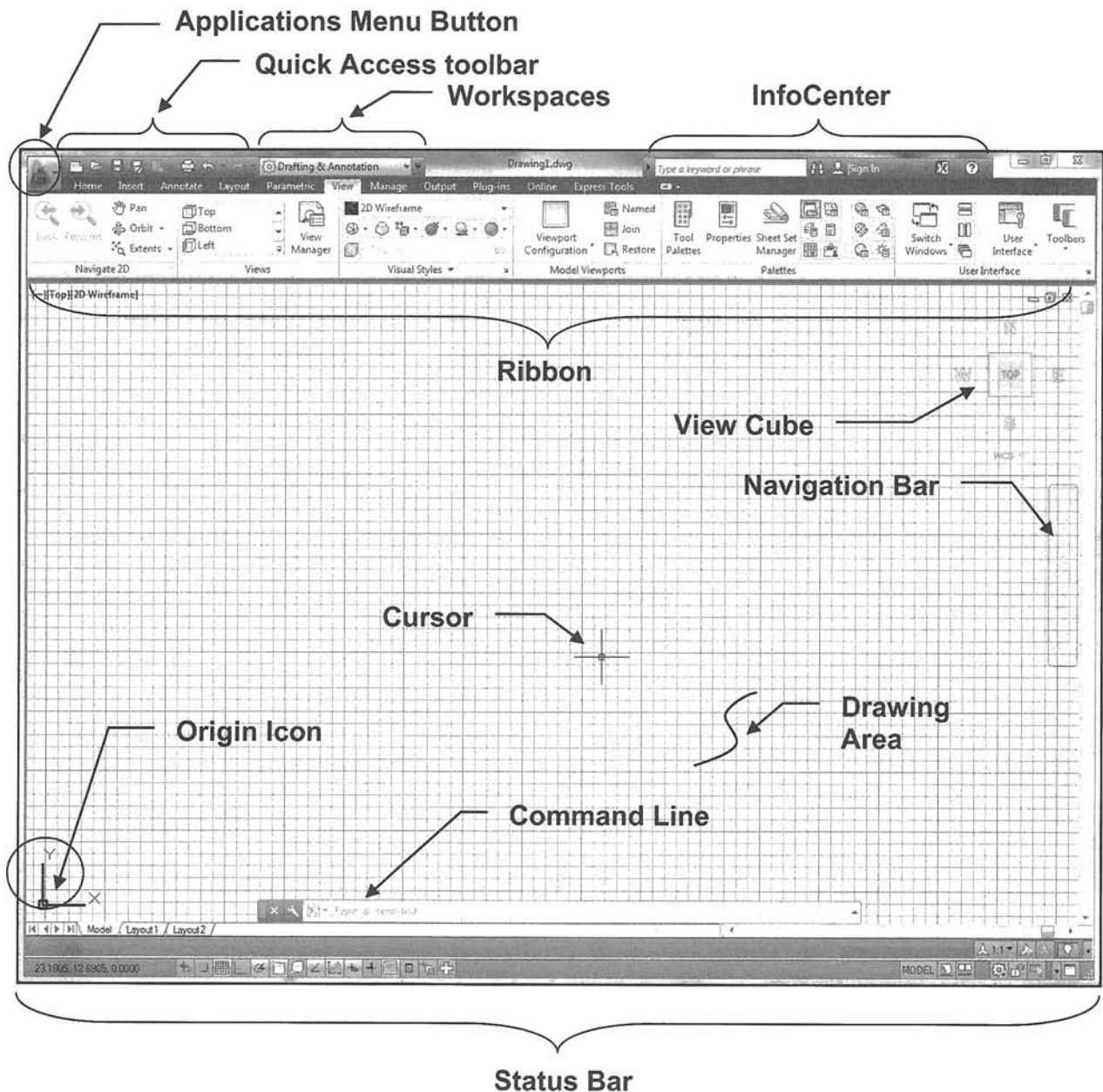
The AutoCAD Application Window default workspace **Drafting & Annotation**, is shown below.

Important:

I have changed my 2D background color to white for this workbook. Yours may be another color. You may change the color of many areas using:

Options / Display tab / Colors button

If the remainder of your screen does not appear as shown below go to the **Intro section** of this workbook and follow the steps for configuring AutoCAD to match the workbook configuration.



A description of each area is shown on the following pages.

APPLICATION WINDOW DESCRIPTIONS

WORKSPACE

Workspaces controls the display of ribbons, tabs, menus, toolbars, and palettes. AutoCAD gives you the option of deciding how you would like them displayed. When you use a workspace, only the menus, toolbars, and palettes that are relevant to a task are displayed. For example if you selected the 3D Modeling workspace only 3D menus, toolbars and palettes would be displayed.

There are 3 preset Workspaces.

Drafting & Annotation (shown on the previous page)

This workspace is the default display. It displays the necessary ribbons, tabs, menus, tools and palettes for 2D drafting. We will be using this workspace for all lessons within this workbook.

3D Basics

This 3D Basics workspace provides a simple workspace with the most basic tools for creating and visualizing 3D Models.

3D Modeling

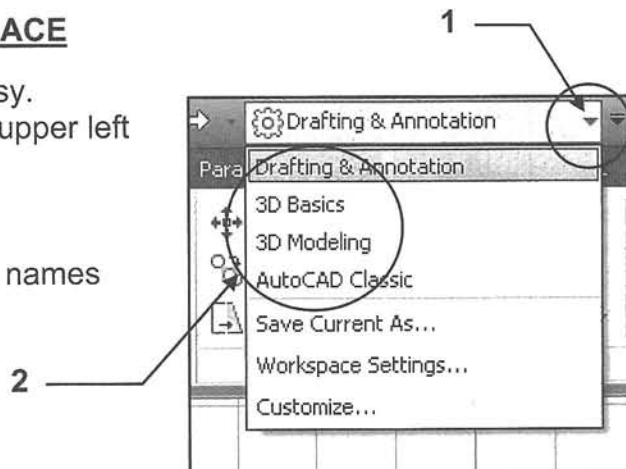
The 3D Modeling workspace provides access to the vast array of 3D tools in AutoCAD.

AutoCAD Classic or AutoCAD LT Classic

AutoCAD kept the classic workspace from older releases of AutoCAD if a user preferred not to use the Ribbon. The classic workspace arranges the toolbars on the sides and top of the screen.

HOW TO SELECT A WORKSPACE

1. Selecting a workspace is easy. Select the ▼ located in the upper left corner of the screen.
2. Select one of the workspace names displayed.



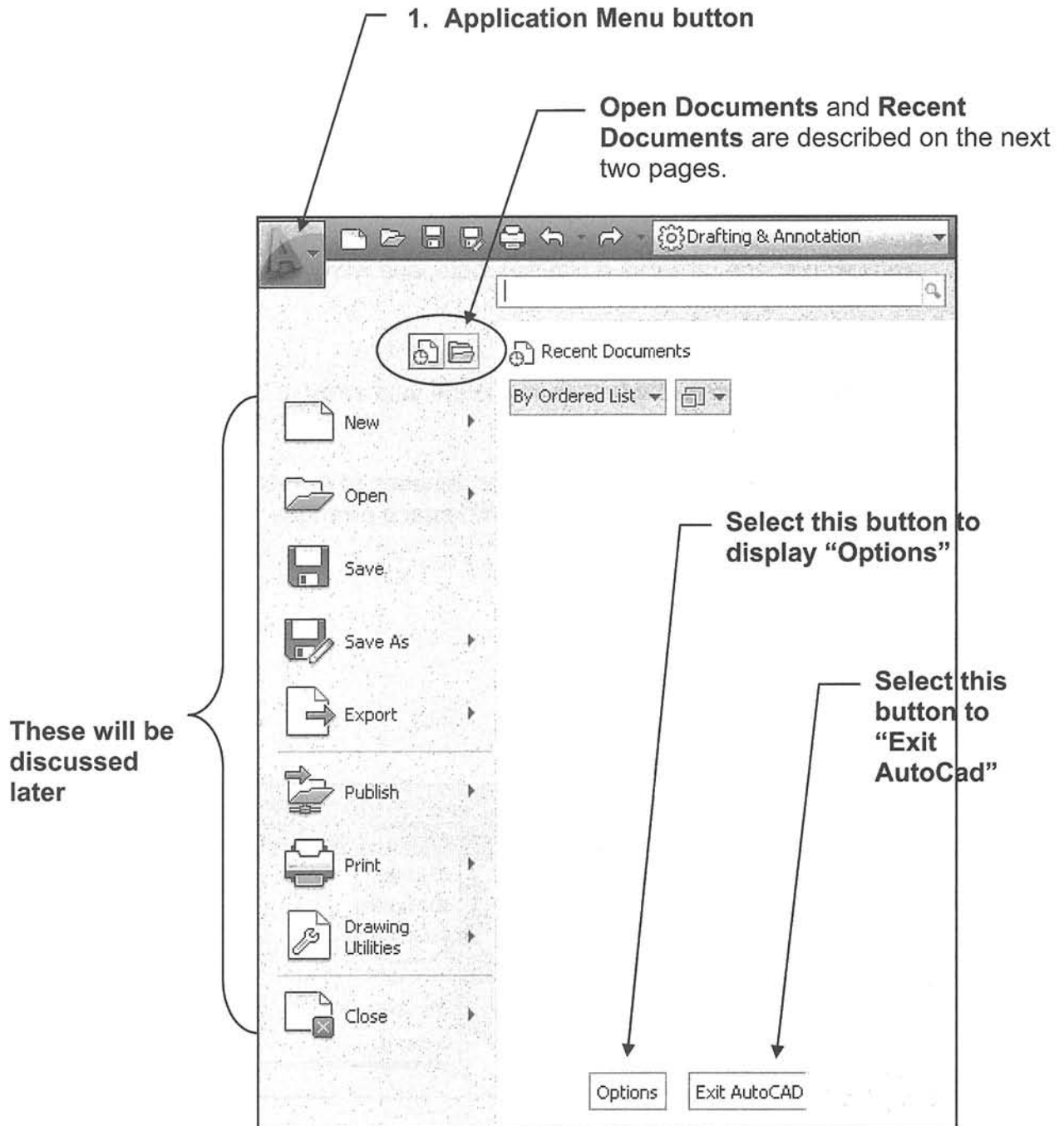
Note: We will be using “Drafting & Annotation”.

APPLICATION WINDOW DESCRIPTIONS

APPLICATION MENU

The Application Menu provides easy access to common tools
Each of the tools will be discussed later in the workbook.

1. Click on the **Application Menu button** in the upper left corner of the AutoCAD display screen. (The big "A")



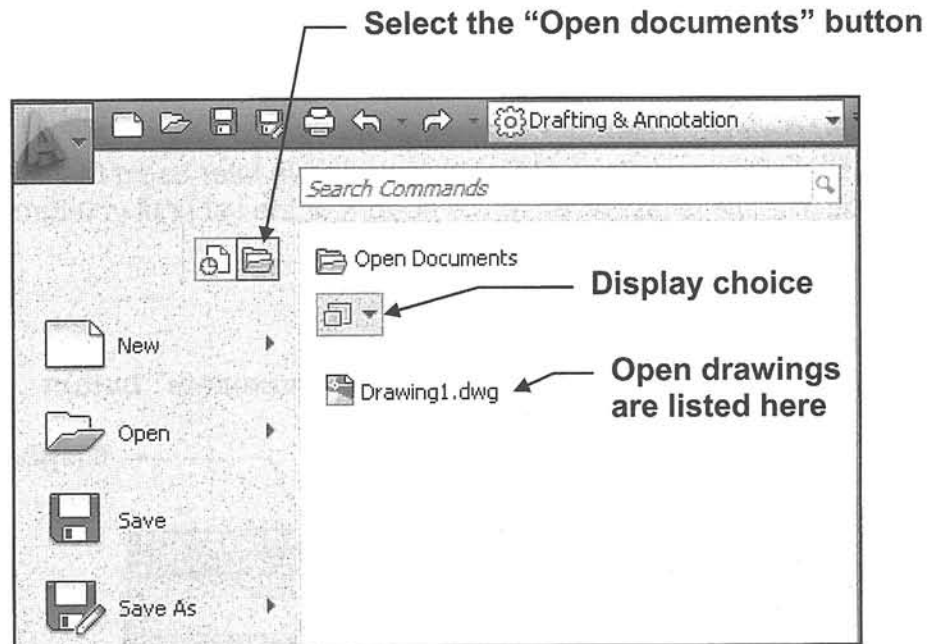
APPLICATION WINDOW DESCRIPTIONS....continued

Open Documents

First let me emphasize **this is not a method to “open” a drawing file.**

Open Documents is a list of all documents that are already open within AutoCAD.

Display choice: The list of documents may be displayed as icons or images. If you hover the cursor over a document name a preview image will appear.



Important setting change for new AutoCAD users.

AutoCAD allows you to have multiple drawing files open at the same time. This is very helpful to experienced AutoCAD users but can be confusing for users **NEW** to AutoCAD.

While using this workbook you might find it helpful if you change a setting to restrict you to only one AutoCAD drawing file to be open at one time. This will only change AutoCAD and will have no affect on any other software on your computer. This setting may be turned ON and OFF instantly. (1 = ON 0 = OFF)

- 1.You should only have one drawing open. Close all but one drawing file.
- 2.Type: sdi <enter>
- 3.Type: 1 <enter>

Now AutoCAD will restrict you to one drawing on the screen. If you choose to go back to multiple drawings repeat the steps above except enter “0” instead of “1”.

APPLICATION WINDOW DESCRIPTIONS....continued

View Recent Documents

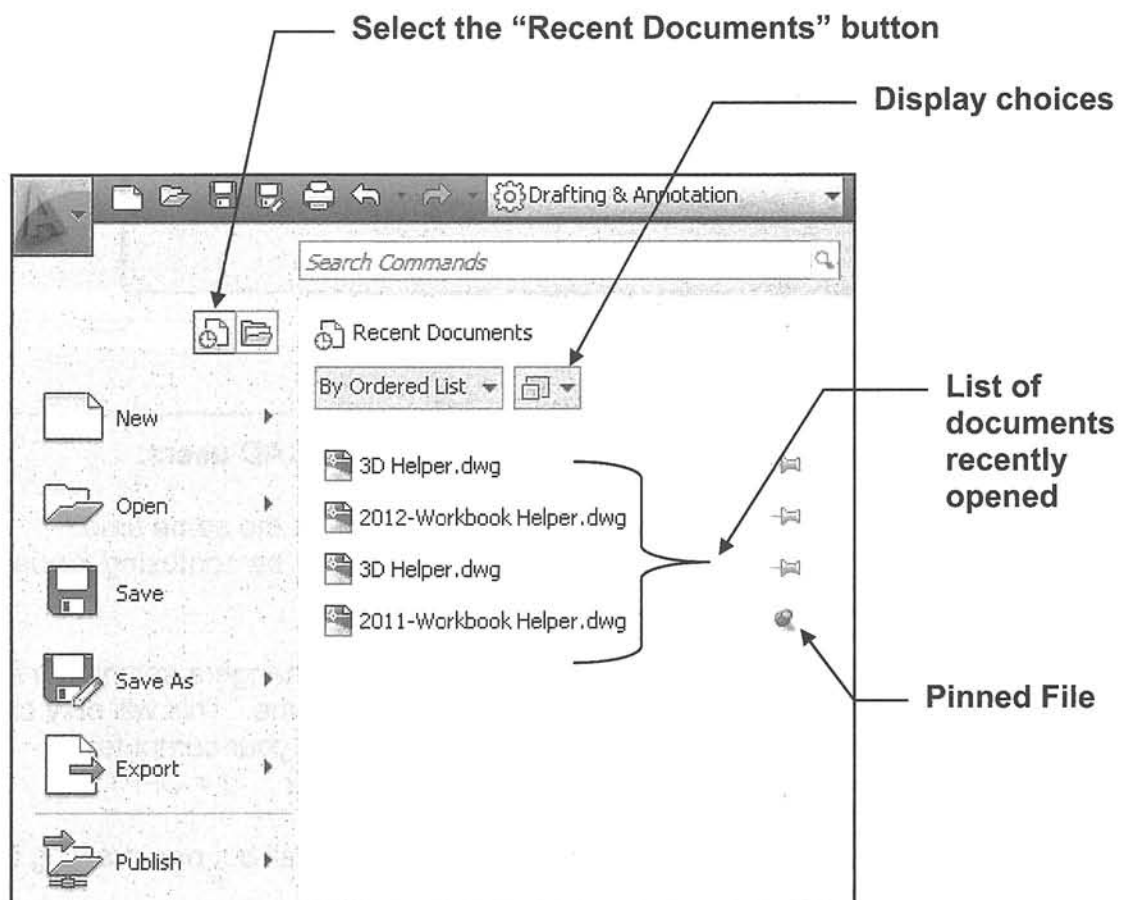
When you select **Recent Documents** a list of the recently viewed documents will appear.

Display choices: This list may be displayed as icons or images and may be sorted in an ordered list or grouped by date or file type.

If you hover the cursor over a document name a preview image will appear.

Pinned Files

You can keep a file listed regardless of files that you save later using the push pin button to the right. The file is displayed at the bottom of the list until you turn off the push pin button.



APPLICATION WINDOW DESCRIPTIONS....continued

Quick Access Toolbar

The **Quick Access Toolbar** is located in the top left corner of the AutoCAD window. It includes the most commonly used tools, such as New, Open, Save, Save as, Cloud Options, Print, Undo and Redo.



How to Customize the Quick Access Toolbar

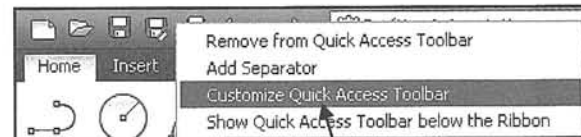
You can add tools with the Customize User Interface dialog box.

For Example:

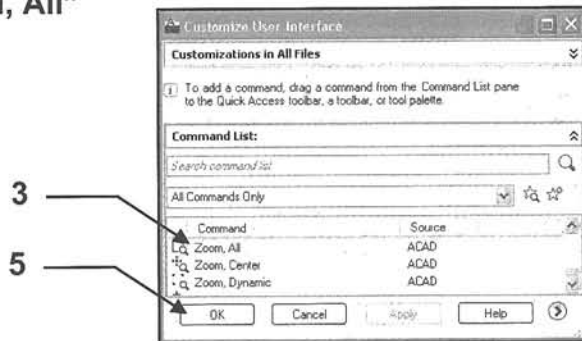
After you have completed Lesson 4 you will find that you will be using **“Zoom All”** often. So I add the **“Zoom All”** tool to the Quick Access Toolbar. If you would like to add the **“Zoom All”** tool, or any other tool, to your Quick Access Toolbar follow the steps below.

1. Place the Cursor on the Quick Access Toolbar and press the right mouse button.

2. Select **“Customize Quick Access Toolbar...”** from the menu.



3. Scroll through the list of Commands to **“Zoom, All”**



4. Press the Left mouse button on **“Zoom,All”** and drag it to a location on the Quick Access Toolbar and drop it by releasing the left mouse button.

5. Select the **OK** button at the bottom of the Customize User Interface dialog box.

The Customize User Interface dialog box will disappear and the new Quick Access Toolbar is saved to the current Workspace.



To Remove a tool:

Place the cursor on the tool to remove and press the right mouse button. Select **Remove from Quick Access Toolbar**.

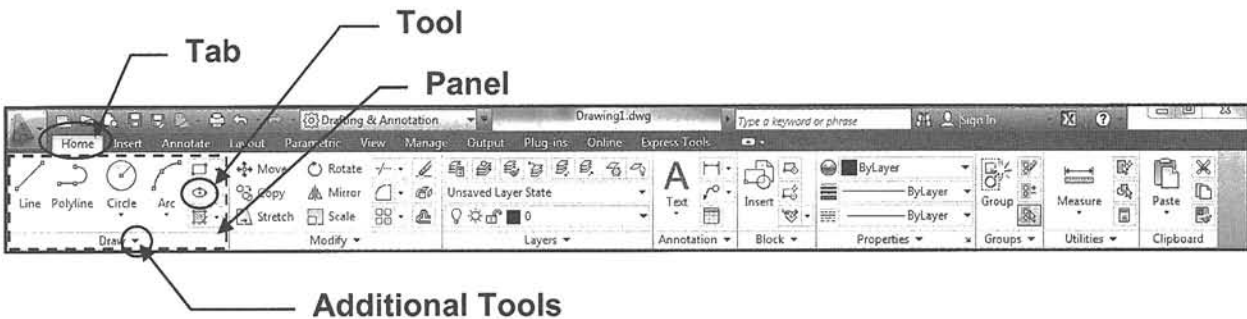
APPLICATION WINDOW DESCRIPTIONS....continued

RIBBON

The **RIBBON** provides access to the AutoCAD tools.

The **TABS** contain multiple **PANELS**. Each **PANEL** contains multiple tools.

When you select a **TAB** a new set of **PANELS** will appear.

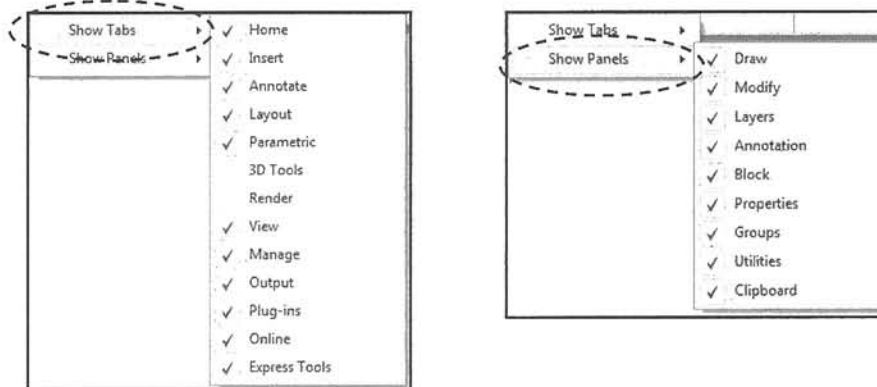


Additional Tools: If you select the ▼ symbol, at the bottom of the panel, the panel will expand to access additional tools.

Control the display of Tabs and Panels

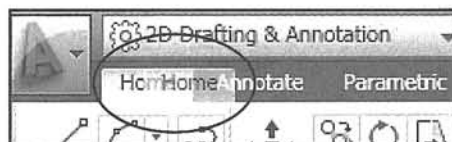
Right click on the Ribbon and select which Tabs or Panels you choose to display.

The check mark confirms the tab or panel is already displayed.



Control the TAB order

If you would like to change the order of the tabs click and drag the tab horizontally to the new location.



Floating PANELS

If you prefer to separate a Panel from the Ribbon you may drag the panel off the Ribbon to a new location on the screen.

APPLICATION WINDOW DESCRIPTIONS....continued

STATUS BAR

The Status Bar is located on the bottom of the screen. It displays the current settings. These settings can be turned ON or OFF by clicking on one of the buttons or by pressing a corresponding function key, F1, F2 etc.



These numbers will change as you move the cursor. The coordinates display the location of the cursor in reference to the Origin. The Origin is currently in the lower left corner of the Drawing Area.

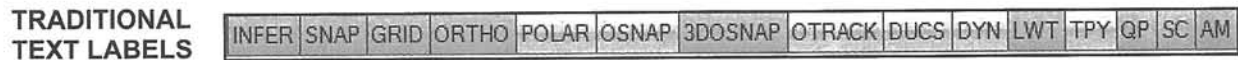
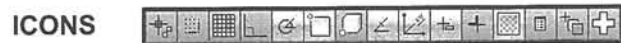
First set of numbers represents the horizontal movement of the cursor (X-axis).
Second set of numbers represents the vertical movement of the cursor (Y-axis).
Third set of numbers represents the Z-axis which is used for 3D and not discussed.

The coordinate display is basically for reference and will be explained more later.

Left side buttons

The left side of the Status bar displays 14 buttons.

These buttons can be displayed as icons or traditional text labels.



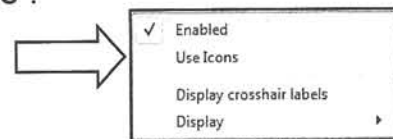
Note: I think it will make it easier to learn if you change the display to Traditional Text.

To change the icon display to traditional text labels.

Right click on any of the buttons and uncheck "use icons".

The check mark means "use icons".

No check mark means "use traditional text labels".



A brief description of each button is shown on the next page. Each button will be discussed in more detail in future Lessons.

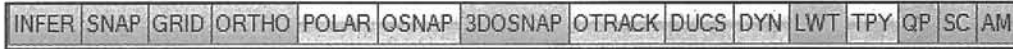
APPLICATION WINDOW DESCRIPTIONS....continued

STATUS BAR BUTTON DESCRIPTIONS


ICONS




TRADITIONAL TEXT LABELS



The Status Bar buttons are used to control the cursor movement and the screen display. The buttons are either ON or OFF. Click on the button to depress (ON). Click again to release (OFF). The color will also change. Light Blue is ON. Gray is OFF.

INFER  (Note: Not used in this workbook)

Inferred Geometric Constrains automatically applies coincident constraints for Endpoint, Midpoint, Center, Node, and Insertion object snaps.

SNAP  (You may also use F9 to toggle ON or OFF)

Increment Snap controls the incremental movement of the cursor. If it is ON the cursor will “snap” in an incremental movement. If it is OFF the cursor will move smoothly. You may set the increments by right clicking on the Snap button and selecting Settings.

GRID  (You may also use F7 to toggle ON or OFF)


The criss-cross lines in the Drawing Area are called the Grid. It is only a drawing aid and will not print. The default spacing is 1 unit of measurement. You may change the Grid spacing at any time by right clicking on the Grid button and selecting Settings.

ORTHO  (You may also use F8 to toggle ON or OFF)

Ortho restricts the movement of the cursor to Horizontal or Vertical. When Ortho is ON the cursor moves only in the horizontally or vertically. When Ortho is OFF the cursor moves freely in any direction.

POLAR  (You may also use F10 to toggle ON of OFF)


PolarSnap restricts cursor movement to specified increments along a polar angle. More on this in Lesson 11


OSNAP  (You may also use F3 to toggle ON of OFF)


When Osnap is ON the cursor will “snap” to preset locations on 2D objects. More on this in Lesson 4.


APPLICATION WINDOW DESCRIPTIONS....continued


STATUS BAR BUTTON DESCRIPTIONS....CONTINUED


3DOSNAP  (You may also use F4 to toggle ON of OFF)
When 3DOsnap is ON the cursor will “snap” to preset locations on 3D objects.
This option will be discussed in the “Advanced Workbook”.


OTRACK  (You may also use F11 to toggle ON of OFF)
Polar tracking restricts cursor movement to specified angles.
More on this in Lesson 11.


DUCS  (You may also use F6 to toggle ON of OFF)
Dynamic User Coordinate System changes the grid plane to follow the XY plane of the dynamic UCS. Used for 3D, refer to Exercise Workbook for Advanced AutoCAD.


DYN  (You may also use F12 to toggle ON of OFF)
When Dynamic Input is ON, you can enter coordinate values in tooltips near the cursor.
More on this in Lesson 11.

LWT  Lineweight displays the width assigned to each object. When it is ON the lineweights are visible. More on this in Lesson 3.

TPY  When Transparency Show/Hide is ON all transparent layers will be displayed. If it is OFF no layers will display as transparent. More on this in Lesson 3.

QP  If ON, Quick Properties displays the properties of the object selected. If OFF the Quick Properties box will not appear. More on this in Lesson 12.

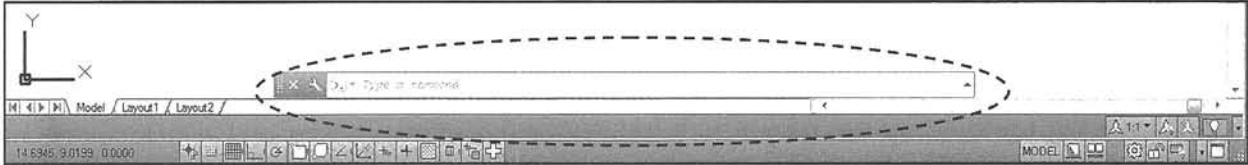
SC  Selection Cycling allows you to select objects that are overlapping. This is most useful when creating 3 dimensional models discussed in the Exercise Workbook for Advanced AutoCAD.

AM  Provides feedback regarding the state of associative annotations when using parametric dimensioning.
This option will be discussed in the “Advanced Workbook”.

APPLICATION WINDOW DESCRIPTIONS....continued

FLOATING COMMAND LINE

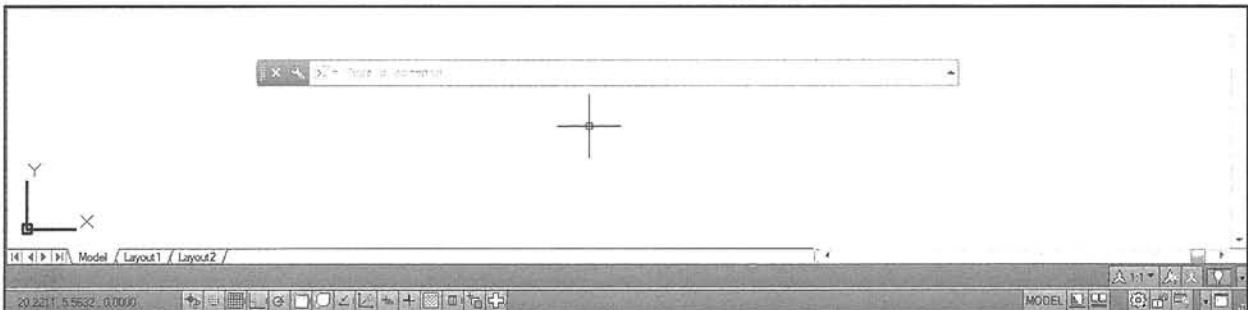
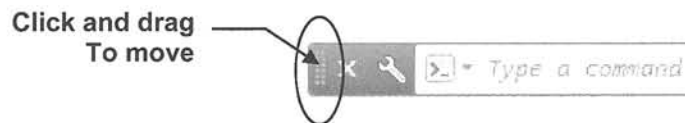
When you first start AutoCAD, and if the software has not been modified, the **Command Line** will be displayed at the bottom of the screen, as shown below.



This is where AutoCAD will prompt you for information and you will enter commands, values and select options. Basically this is how you communicate with AutoCAD.

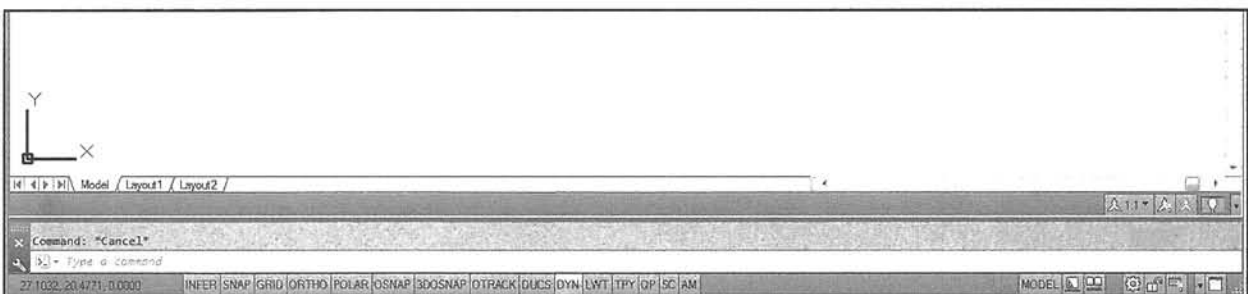
You may “dock” the command line at the top or bottom of the AutoCAD window or let it float in the drawing area.

To move the command line, place the cursor on the left end grip, press the left mouse button and drag the command line to a desired location.



To “dock” the command line drag it to the top or bottom of the drawing area. It will snap to the edge. You can’t dock the command line to the sides.

You may also drag it below the drawing area as shown below.



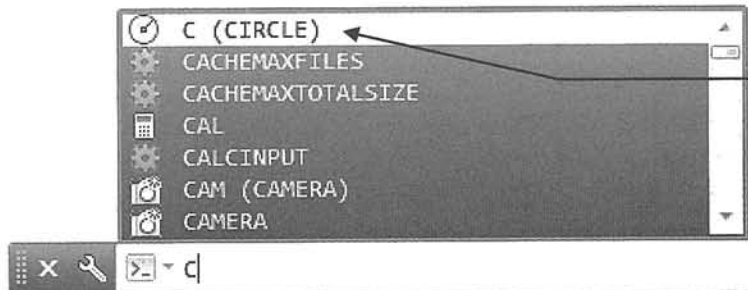
Note: You may toggle the Command Line ON and **OFF** using Ctrl + 9.

APPLICATION WINDOW DESCRIPTIONS....continued

COMMAND LINE

How to enter a command on the Command Line.

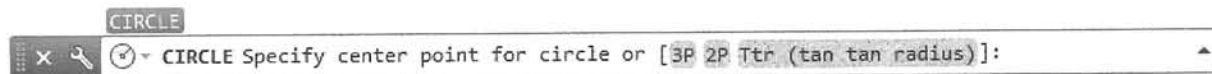
1. Type the first letter of a command, such as **c** for **circle**.



AutoComplete Command Entry automatically completes the entry. It displays a list of all the commands whose prefix matches what you have typed. This enables you to scroll and select from the list.

2. A list of commands that begin with the letter **c** will appear. Select the desired command from the list.
3. When you enter a **command** such as Circle the **prompt** and **options** will be displayed on the command line.
4. The **prompt** for Circle command asks you to:

"Specify center point for circle" or [3P/2P/Ttr (tan tan radius)]:



The information within the [] brackets are options that you may select.

Clickable options are displayed in blue.

Options displayed in Black must be typed or selected from the option menu.

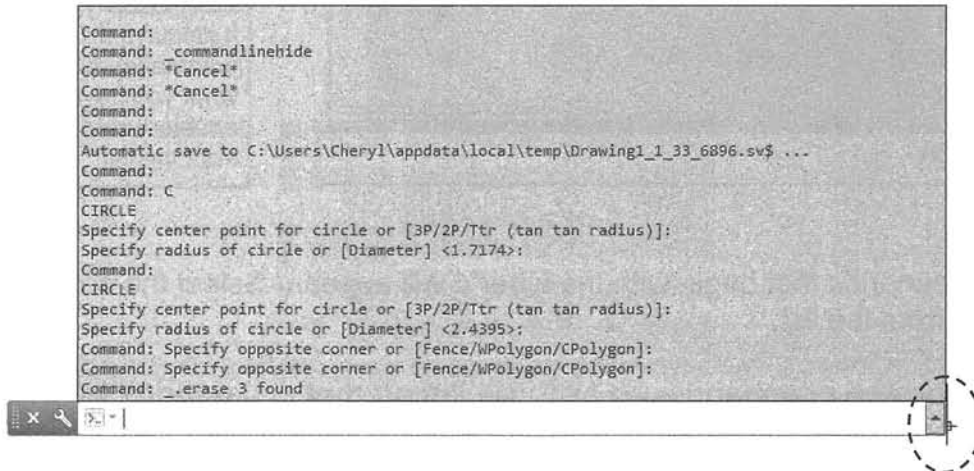
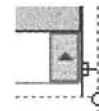
This will be discussed more in Lesson 2.

APPLICATION WINDOW DESCRIPTIONS....continued

FLOATING COMMAND LINE

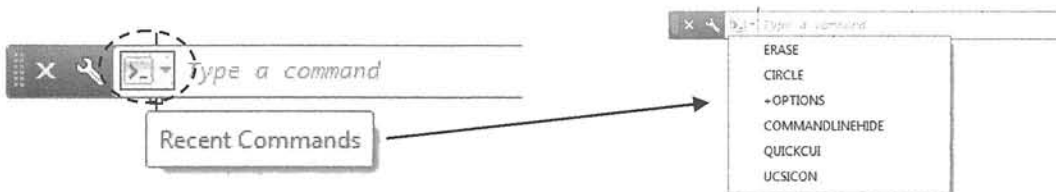
Command and Prompt history

As you enter commands AutoCAD records them as "history". You may display this history by pressing F2 or the up arrow at the right hand end of the command line.

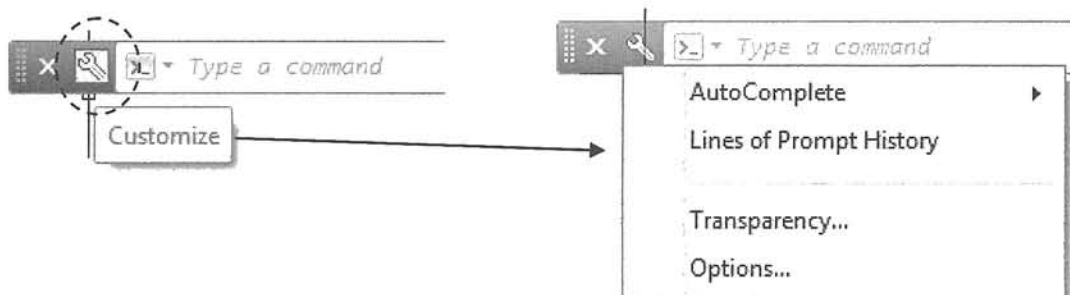


Command Line tools

Recent commands tool displays recently selected commands.



Customize tool allows you to select options for the AutoComplete, control how many lines of history are displayed and the degree of transparency for the Command Line.



APPLICATION WINDOW DESCRIPTIONS....continued

DYNAMIC INPUT

Dynamic Input is another method of inputting commands, values and select options.

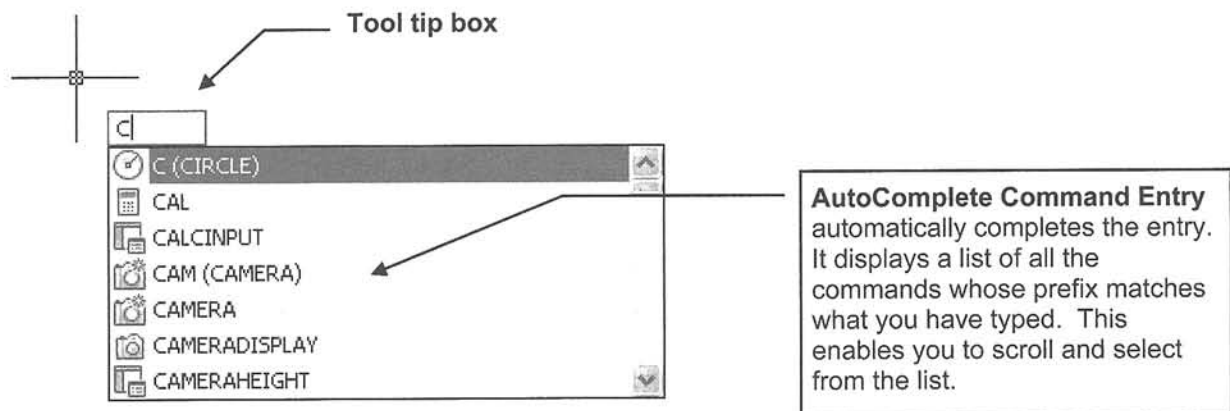
To use Dynamic Input you must turn **ON** the **DYN** button in the Status Bar, shown on page 1-13.



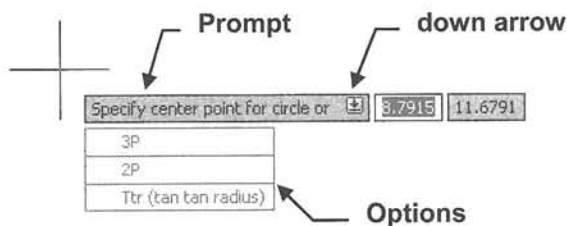
If you choose to use Dynamic Input the command will be entered in the tooltip box beside the cursor.

How to enter a command using Dynamic Input.

1. Place the cursor in the Drawing Area.
2. Type the first letter of a command, such as **c** for **circle**.
3. A list of commands that begin with the letter **c** will appear. Select the command from the list.



4. If you press the ↓ down arrow the options will appear below the prompt.



Notice the command entry is being displayed on the command line also.

Using the Command Line or Dynamic Input is **your choice**.

This will be discussed more in Lesson 2.

APPLICATION WINDOW DESCRIPTIONS....continued

DRAWING AREA

The Drawing Area is the large open area of the screen. This is where you will draw. Consider this your paper.

The color of this area can be changed using **Options / Display tab / Color**

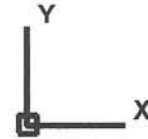
ORIGIN Icon

The Origin icon or UCS icon indicates the location of the Origin.

The Origin is where the coordinates X, Y and Z originate.

The X and Y coordinates for the Origin is 0, 0.

This will be discussed more in future Lessons.

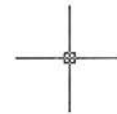


CURSOR

The Cursor is located within the Drawing Area. The movement of the pointing device, such as a mouse, controls the movement of the cursor.

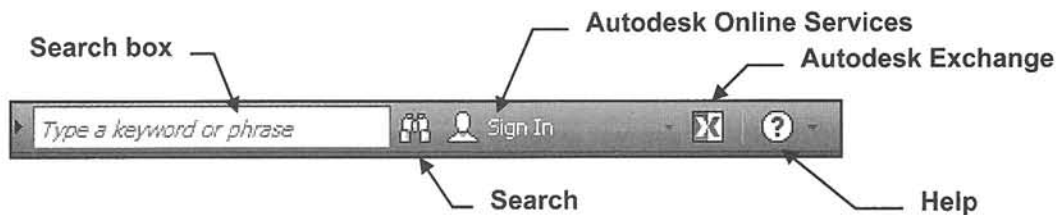
You will use the cursor to locate points, make selections and draw objects.

The size can be changed using **Options / Display tab / Crosshair Size**.



INFOCENTER

The InfoCenter is a tool to search for information. It is located in the upper right corner of the screen.



Search Box

The InfoCenter allows you to search for information by typing key words or a question in the "Help Box". After typing press <enter>

Search

Displays multiple search options.

Autodesk Online Services

Sign in to Autodesk Online to access services that integrate with your desktop software.

Autodesk Exchange

Displays the Autodesk Exchange window.

Help Menu

Displays the Help Window

APPLICATION WINDOW DESCRIPTIONS....continued

VIEWCUBE and NAVIGATION BAR

The ViewCube and the Navigation Bar are used primarily in the 3D mode. They enable you to view and rotate the 3D Model.

We will not be using these tools in this Workbook.
Refer to the "Advanced" workbook.

Since we are not using these tools you may choose to turn their display off. Follow the easy instructions below to turn the display off or on.

How to turn off the View cube and Navigation bar.

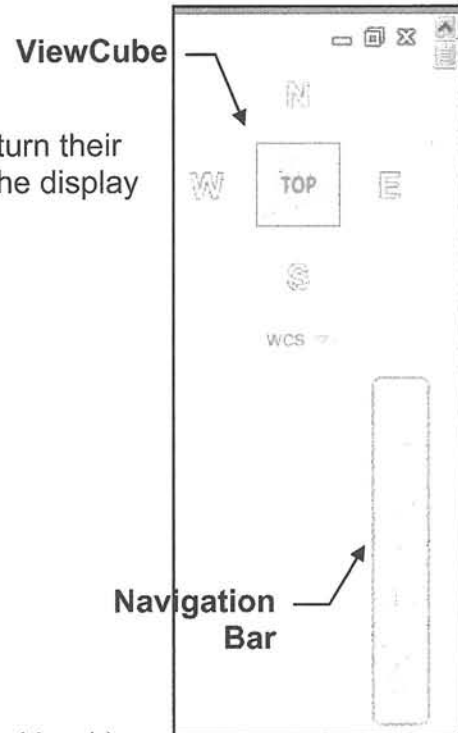
There are 2 methods:

Method 1

1. Type **navbardisplay** <enter>
2. Type **0** <enter> [0 = off 1 = on]
3. Type **navvcubedisplay**
4. Type **1** <enter>

Note: Navvcubedisplay has 4 settings:

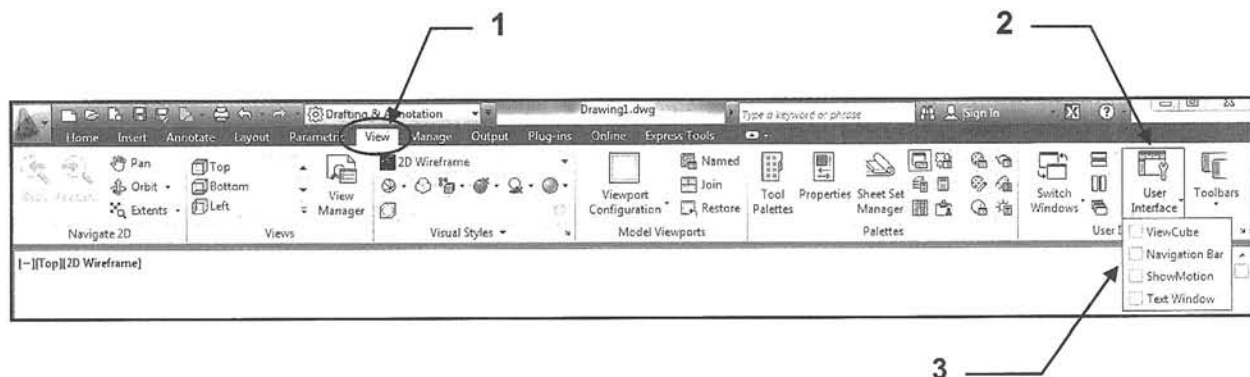
- 0 = Not displayed in 2D or 3D
- 1 = Displayed in 3D only (Select this one for the workbook)
- 2 = Displayed in 2D only
- 3 = Displayed in both 2D and 3D



Method 2.

1. Select the **View** tab
2. Select the **User defined** tool located on the **Windows** panel.
3. Uncheck the ViewCube and Navigation Bar boxes.

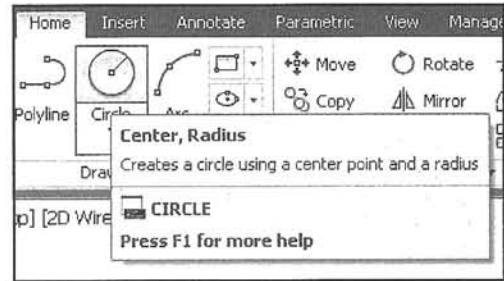
Uncheck = off Check = on



TOOLTIP HELP

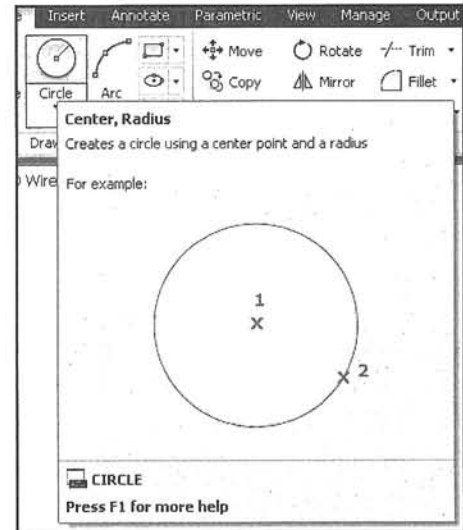
Basic Tooltip

When you hover your cursor over a tool an initial Tooltip will appear telling you the name of the tool with a brief description.



Extended Tooltip

If you hover just a little longer a graphic display, directly from the Help system, will appear.



How to turn off Tooltips

After you become familiar with AutoCAD you will want to turn these off. Or you may just want to delay the extended Tooltips.

1. Type **options** and press <enter>.
2. Select the **Display** tab
3. Uncheck boxes

