



University of Engineering &
Technology Peshawar

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Course Name: Uni-elective I (CAD)

Credit hours: 3

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AutoCAD Commands

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- Nearly every action you perform in AutoCAD is based on a **command**.
- You use commands to tell AutoCAD the actions you want it to perform, and AutoCAD responds with command **prompts**.
- Command prompts tell you the **status** of an action, or they give you options from which you must choose to complete a command.
- You can use any of the following to start **commands**:
 - ▣ AutoCAD **menus** **Toolbars**
 - ▣ **Shortcut menus** **Command line**
 - ▣ Accelerator **keys**

Useful Keyboard Keys

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- **F1 key**, context-sensitive help
- **F2 key**, toggling the graphics windows and the text windows
- **F3 key**, turning running object snaps on/off
- **F5 key**, cycling through isometric planes
- **F6 key**, cycling through coordinate display types
- **F7 key**, toggling Grid mode
- **F8 key**, toggling Ortho mode
- **F9 key**, toggling Snap mode
- **F10 key**, toggling polar mode
- **Esc key**, exit any command
- **Enter key**, invoke the last-used command

Command Prompt

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- Regardless of how you start a command, the command prompts flow in the same way. AutoCAD either displays **prompts** on the command line or displays a **dialog box**. The prompt format is

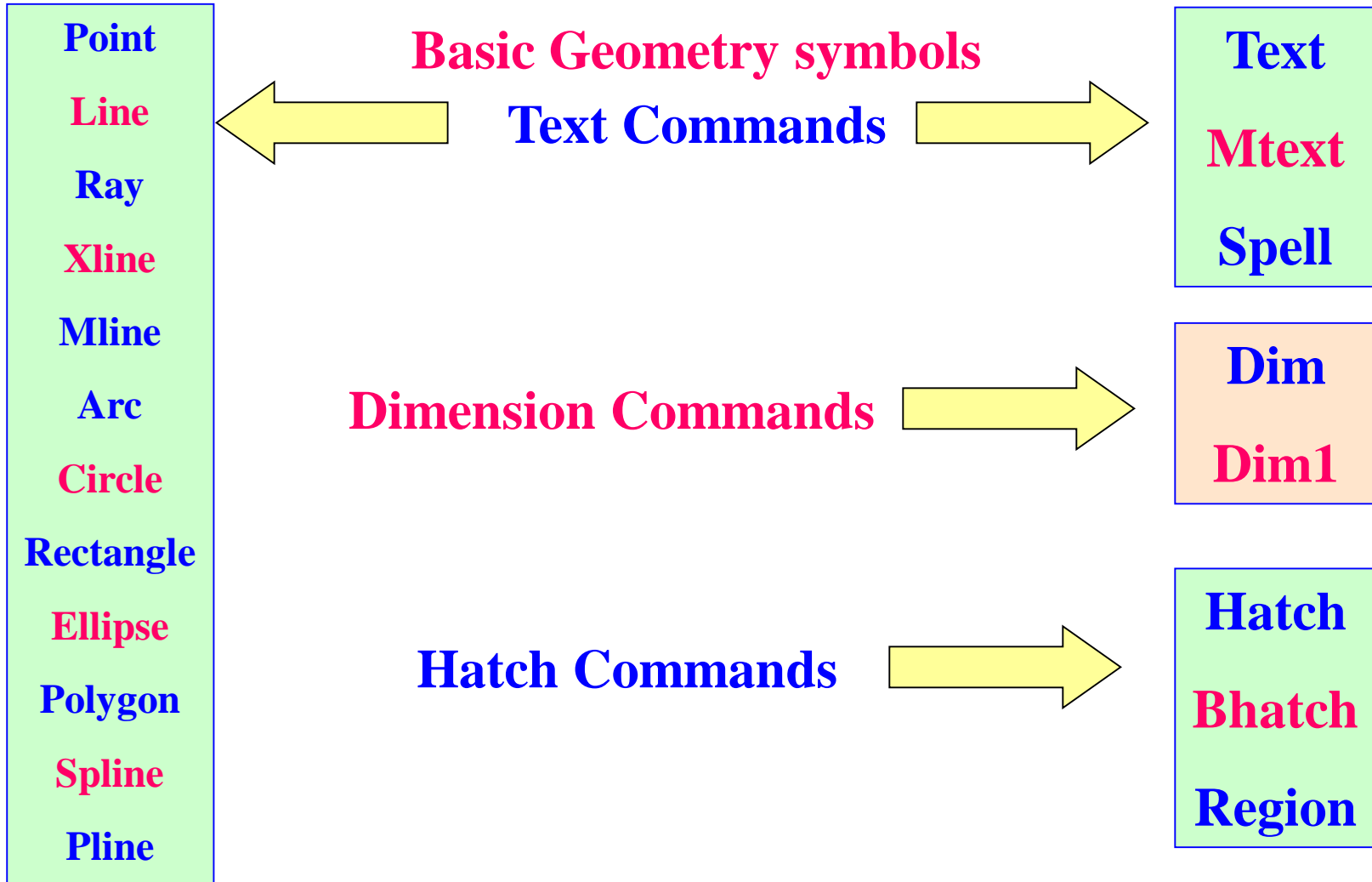
- **current instruction or [options] <current value>:**

- The **current instruction** begins with one of **four verbs**. The verb communicates the action you can perform, as shown below:
- **Select** Use the pointing device to select objects.
- **Enter** Enter a value on the command line.
- **Specify** Select a point on the screen or enter a coordinate.
- **Digitize** Select a point on a digitizing tablet (TABLET command only).

Commands often have **options**, which are displayed within brackets.


AutoCAD Drawing Commands

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Commands

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- **Command Point**
- **Keystroke: POINT / PO**
- **Icon** A small square icon with a black dot in the center, representing a single point.
- **Menu: Draw > Point > Single Point**
- **Result: Draw a single point**
- **System Variables**
 - **PDMODE** specifies how point objects are displayed.
 - **PDSIZE** specifies the size of point objects.
- **Point Style dialog box**
- **Command: DDPTYPE**
- **Menu: Format > Point Style**

Commands

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- **Command Line**
- **Keystroke: Line / L**
- **Icon** A small square icon with a thin border, containing a black line segment with two small black dots at its ends, representing a line command.
- **Menu: Draw > Line**
- **Result:** Draw a straight line segment from one point to the next
- For example, the command sequence is
- Command: **line**
- Specify **first** point:
- Specify **next** point or [Undo]:
- Specify **next** point or [Undo]:
- Specify **next** point or [Close or Undo]:

Commands

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□ Ray

- Creates a **semi-infinite line** commonly used as construction line. A ray has a finite starting point and extends to infinity.
- Command: **RAY** Draw menu: **Ray**

□ Construction Line



- Creates an **infinite lines**, which are commonly used as construction lines.
- Command: **XLINE** Draw menu: **Construction Line**

□ Multiline Creates multiple **parallel lines**:

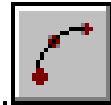
- Command: **MLINE**
- Draw menu: **Multiline**



Commands

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- **Command** **Arc**
- **Keystroke:** **Arc / a**
- **Icon**
- **Menu:** **Draw > Arc**
- **Result:** **Draws an arc based on three points**
- **Notes**
 - You can create arcs in **many ways**.
 - The default method is to specify **three points**—a start point, a second point on the arc, and an endpoint.
 - By default, AutoCAD draws arcs **counterclockwise**.



Commands

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□ **Command Circle**



□ **Keystroke: Circle / C**

□ **Icon**

□ **Menu: Draw > Circle**

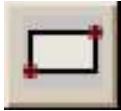
□ **Result:** Draws a circle based on a center point and radius

□ **Notes**

- You can create circles in several ways.
- The default method is to specify the center and radius.

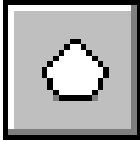
Commands

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- **Command** Rectangle
- **Keystroke:** RECTANGLE /RECTANG/ REC
- **Icon** The icon shows a black rectangle with small red squares at each of its four corners, representing a drawing tool for creating rectangles.
- **Menu:** Draw > Rectangle
- **Result:** Draws a rectangle after you enter one corner and then the second
- **Options:**
 - ▣ Chamfer/Elevation/Fillet/Thickness/Width

Commands

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- **Command** Polygon
- **Keystroke:** POLYGON / POL
- **Icon** A square icon with a gray background and a black border, containing a white outline of a polygon.
- **Menu:** Draw > Polygon
- **Result:** Creates an equilateral closed polyline
- **System Variables**
- POLYSIDES
 - It stores the current number of polygon sides.
 - The range is 3 to 1024.

Commands

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- **Command SKETCH**

- **Command line: sketch**

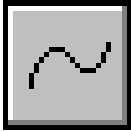
- **Result** Creates a series of freehand line segments

- **Notes**

- Drawing with the SKETCH command controls a screen-based pen with a **pointing device**.
- SKETCH is **useful** for entering map outlines, signatures, or other freehand drawings.
- Sketched lines are not **added** to the drawing until they are recorded.

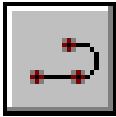
Commands

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- **Command** **Spline**
- **Keystroke:** **Spline / spl**
- **Icon** A small square icon with a black border containing a black spline curve that starts at the bottom left, rises to a peak, and then descends to the bottom right.
- **Menu:** **Draw > Spline**
- **Result:** Creates a quadratic or cubic spline curve
- **Notes:**
 - SPLINE fits a **smooth curve** to a sequence of points within a specified tolerance.
 - AutoCAD uses **NURBS** (nonuniform rational B-splines) mathematics, which stores and defines a class of curve and surface data.

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- **Command** Polyline
- **Keystroke:** PLINE / PL
- **Icon** 
- **Menu:** Draw > Polyline
- **Result:** Creates two-dimensional polylines.
- A polyline is a connected sequence of line or arc segments created as a single object. A rectangle is an example of a polyline.
- Polylines have some unique qualities that make them very useful:
 - They can have width (constant or varying)
 - They can consist of arcs and lines.
 - They can be edited
 - They can be joined together.
 - They can be exploded into individual segments

Drawing Editing Commands

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The commands covered in this section are all concerned with editing and in some way manipulating existing graphics in a drawing.

They fall into four major groupings:

- **Deletion Operations;**
- **Transformations;**
- **Editing and Alteration;** and
- **Administrative Activities.**

Deletion Command

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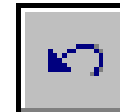
- **Command Erase**
- **Keystroke: Erase / E**
- **Icon** An icon of an eraser tool with a purple eraser tip and a yellow handle, positioned diagonally.
- **Menu: Modify > Erase**
- **Shortcut menu:**
 - ▣ Select the objects to erase, right-click in the drawing area, and choose Erase.
- **Result: Erases an object.**
- **Command: OOPS**
- **Command line: oops**
- **Result:** Restores objects erased by the last ERASE command.

Correcting Mistakes

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➤ **U** reverses the effect of the previous command.

- ▣ Command line: **U** Edit menu: **Undo**
- ▣ **Shortcut menu:** right-click in the drawing area

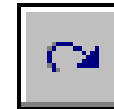


➤ **UNDO** reverses the effect of multiple commands and provides control over the undo feature. This command is a more versatile version of the simplified U command.

Command line: **undo**

➤ **REDO** reverses the effects of a single UNDO or U command.

- Command line: **Redo** Edit menu: **Redo**
- ▣ **Shortcut menu:** right-click in the drawing area



Selecting Objects

- Before you can edit objects, you need to create a **selection set** of the objects.
- A selection set can **consist** of a single object, or it can be a more complex grouping: for example, the set of objects of a certain color on a certain layer.
- You can create the selection set either **before** or **after** you choose an editing command.
- Use one of the following **methods** to create selection sets.
 1. **Choose** an editing command. Then select the objects and press ENTER.
 2. Enter **select**. Then select the objects and press ENTER.
 3. Select the objects with the **pointing device**. Then choose an editing command.
 4. **Define** groups.

Repeating Commands

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- You can repeat AutoCAD commands using one of several methods.
- **To repeat the last command**
 - Press ENTER or SPACEBAR, or right-click in the drawing area and choose Repeat.
- **To repeat one of the last six commands**
 1. Right-click in the command window or text window.
 2. From the shortcut menu, choose Recent Commands, then choose one of the six most recently used commands.
- **To repeat the same command multiple times**
 1. At the Command prompt, enter **multiple**.
 2. At the next prompt, **enter** the command you want to repeat.
 3. AutoCAD **repeats** this command until you press ESC.

Canceling Commands

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- You can cancel any command by pressing **ESC**, the standard key to cancel actions in Windows programs.
- You can change the cancel key to **CTRL+C**, which was used to cancel commands in previous AutoCAD releases.

- To **change** the cancel key
 1. From the **Tools menu**, choose **Options**.
 2. In the Options dialog box, choose the **User Preferences** tab.
 3. Under **Windows Standard Behavior**, clear Windows Standard Accelerator Keys.

Text Commands

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□ TEXT or DTEXT

- Creates one or more lines of text and end each line when you press ENTER. Each text line is a separate object that you can relocate, reformat, or otherwise modify.

□ MTEXT

- Multiline Text Editor creates paragraphs that fit within a nonprinting text boundary.
- You create the text boundary to define the width of the paragraph.
- You can also specify the justification, style, height, rotation, width, color, spacing, and other text attributes using MTEXT.
- Each mtext object is a single object, regardless of the number of lines it contains.
- **Spell**
- Checks spelling in a drawing
- Tools menu: **Spelling**
- Command line: **spell** (or 'spell for transparent use)



Draw menu: Text ► Multiline Text

 Command line: **mtext**

Basic Utility Commands

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□ REDRAW

- This command forces AutoCAD to re-display the graphics on the screen. This has the effect of clearing away some extraneous graphics such as marker "blips" that are left behind by pointing operations. (Blipmode=on or off)

□

SAVE

- Causes all editing changes to the current drawing to be saved to the disk file. Should be done regularly during a long drawing session.

□

END

- Terminates the drawing editor, saves the current drawing to a disk file and returns to the main AutoCAD menu.

□

QUIT

- Terminates the drawing editor without saving the changes made to the current drawing. Returns to the main AutoCAD menu.