



Dimensions command:

The screenshot shows the AutoCAD interface with the Dimension command menu open. The menu options are: DIM, Press F1 for more help. The drawing area shows a circle with a diameter dimension of $\varnothing 0.7767$ and a vertical linear dimension of 1.5995. The command line at the bottom shows: Command: _dim, Select objects or specify first extension line origin or [Angular/Baseline/Continue/Ordinate/align/Distribute/Layer/Undo]:

Dimensions command
Defines the dimensions for each element of the drawing
There are sub-shapes of it:

- Linear dimension: Defines the dimension horizontally and vertically
- Oblique dimension: Defines the dimensions for oblique shapes
- Angle: Defines the value of the angle
- Circle radius
- Circle diameter
- Arc length
- Point coordinates





Dimension style:

To adjust the dimensions and create a specific model for the dimensions to suit the size and shape of the drawing.
Format → Dimension style

Dimensions are proportional to the drawn figure.

The dimensions are not proportional to the drawn shape (the dimensions are large)

The dimensions are not proportional to the drawn shape (the dimensions are small)

The screenshot shows the AutoCAD interface with the 'Format' menu open and 'Dimension Style...' selected. A drawing of a rectangle with a circle inside is shown with dimensions: 85.4586 (width), 44.3502 (height), and a circle diameter of $\varnothing 21.8214$. A smaller rectangle below it has a dimension of 6.3021. A yellow arrow points from the 'Dimension Style...' menu item to the drawing area.





Steps to create a new model

Step one:
Format → Dimension style → Enter

Step 2: From this , choose Create New Model.

Step 3: Type the name of the new model and then click Continue.



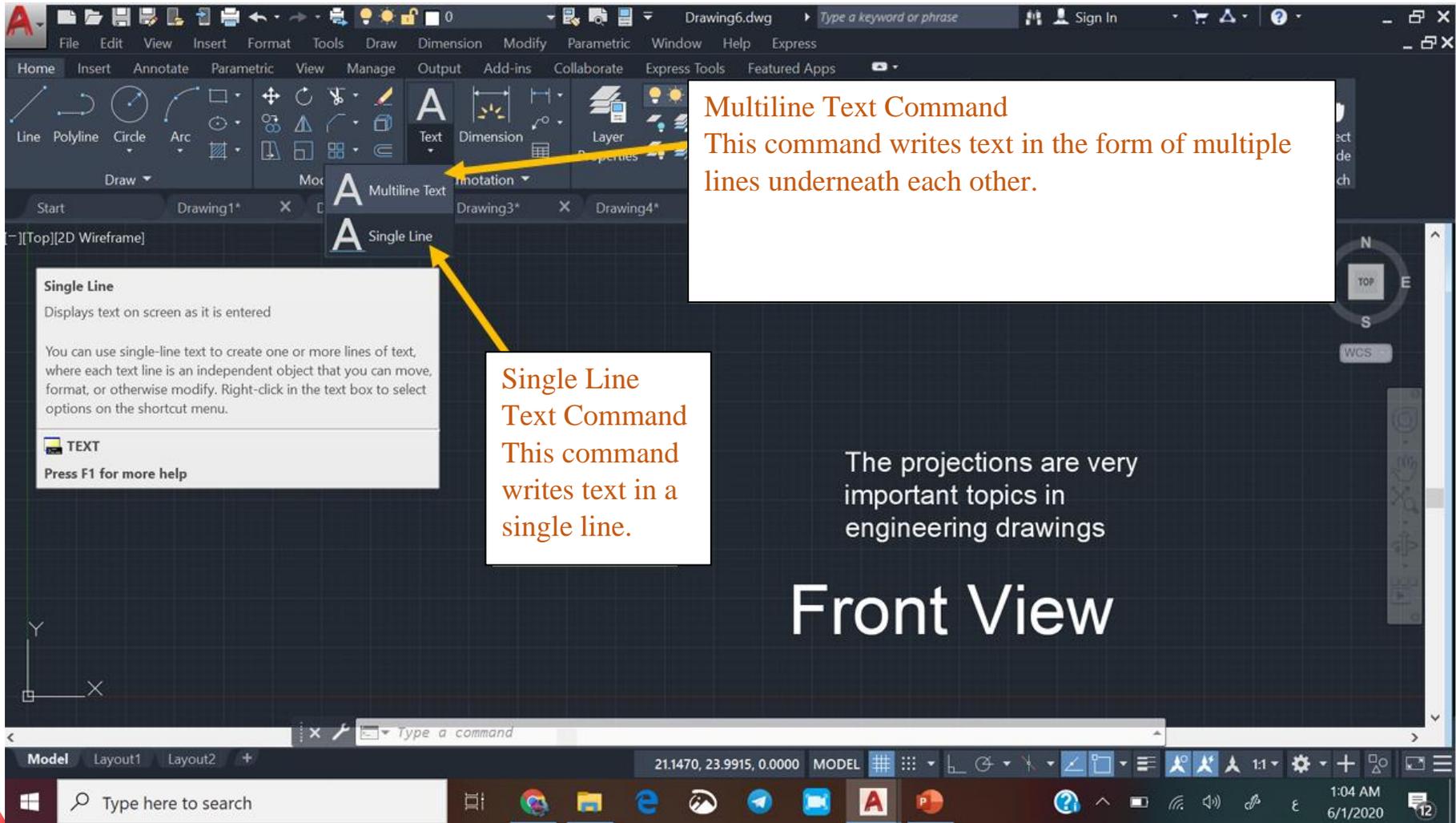


The screenshot shows the AutoCAD Dimension Style Manager dialog box for a 'New Dimension Style: Large (5 x 5)'. The 'Fit' tab is active, showing options for 'Fit options' and 'Text placement'. A preview window shows a dimensioned part with values like 1.0159, 1.1955, 2.0207, and R0.8045. The 'Scale for dimension features' section has 'Use overall scale of' set to 1.0000. Annotations include a box pointing to the 'Fit' tab with the text 'From here you can choose the detail you want to change: Units, Text, Fonts, Arrows, Symbols', and another box pointing to the 'Scale for dimension features' section with the text 'If you want to make a quick and comprehensive modification to all the details, we change the scale (magnification greater than number 1 and reduction less than number 1)'. A third box on the right says 'The program will copy the details of the last used model.'





Text:



Multiline Text Command
This command writes text in the form of multiple lines underneath each other.

Single Line Text Command
This command writes text in a single line.

The projections are very important topics in engineering drawings

Front View





Types of lines and their uses:

In order for the drawing to be more expressive and more understandable, it must be done using lines of different thicknesses and shapes.

The lines can be either thick or thin.

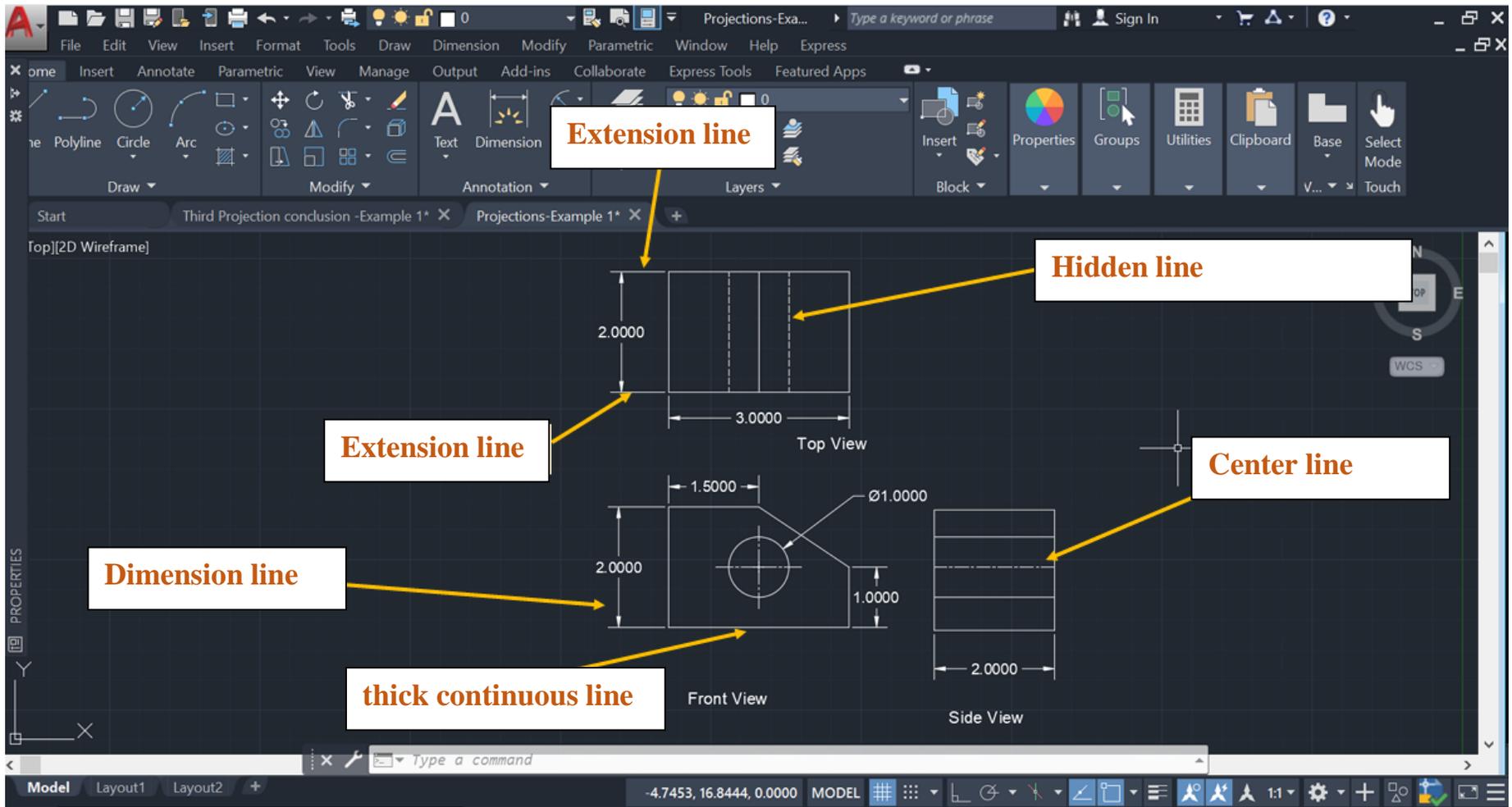
Thick lines are used to draw the real visible parts, while other lines that are added to the drawing to increase its clarity, such as dimension lines, cutting lines, etc., are drawn with a thin thickness.

The ratio of the thickness of the thick line to the thickness of the thin line must not be less than 1:2.

The amount of thickness is chosen according to the size and type of the drawing.

The lines must be coordinated, regular, uniform in thickness, and clear.







Hatch:

Hatch
Fills an enclosed area or selected objects with a hatch pattern or fill.

Choose from several methods to specify the boundaries of a hatch.

- Specify a point in an area that is enclosed by objects.
- Select objects that enclose an area.
- Specify boundary points using the -HATCH Draw option.
- Drag a hatch pattern into an enclosed area from a tool palette or DesignCenter.

HATCH
Press F1 for more help

This command is responsible for shading areas

There are several types, shapes and colors for shading

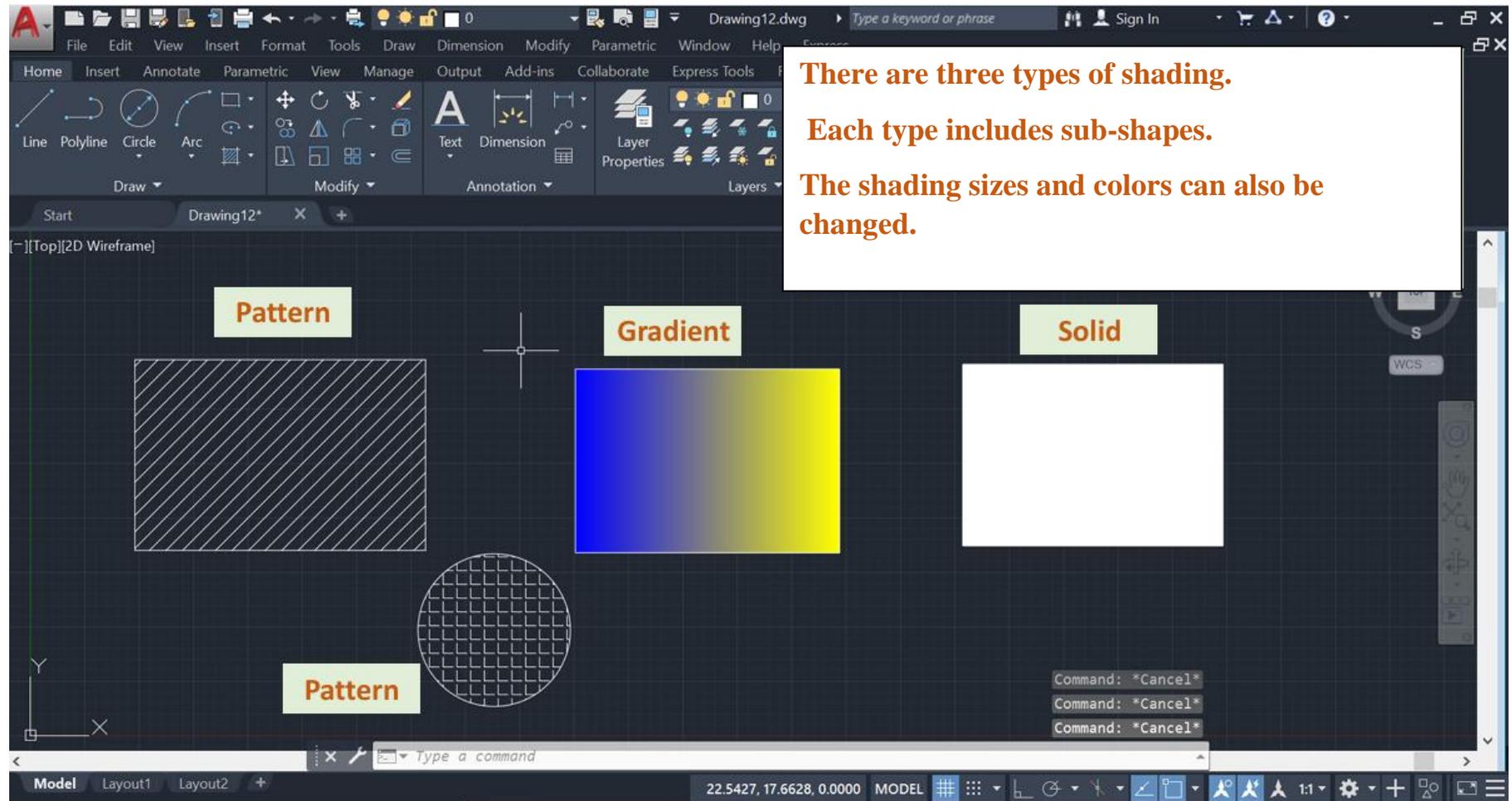
The command can be activated in two ways:

- **From the drawing board by clicking on the icon**
- **Using the keyboard and typing hatch in the command bar and then pressing enter**





Al-Mustaqbal University
Department (Communications Engineering)
Class (1ST class)
Subject (Engineering drawing) /code (UOMU028014)
Lecturer (Doaa Hazim Aziz)
1st/2nd term – Lect. (Dimensions commands)



There are three types of shading.
Each type includes sub-shapes.
The shading sizes and colors can also be changed.

