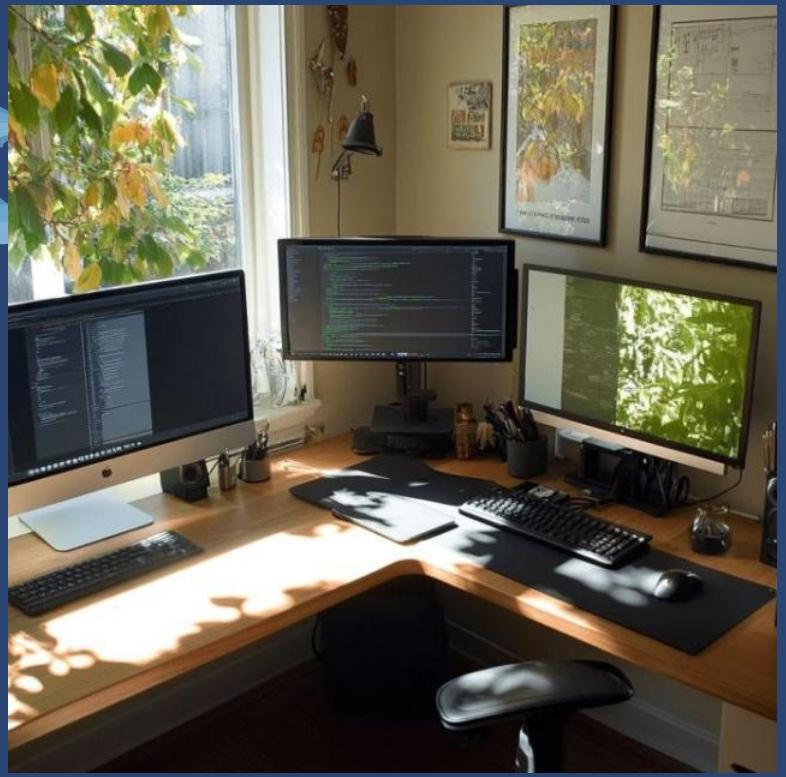


AutoCAD: The Language of Design

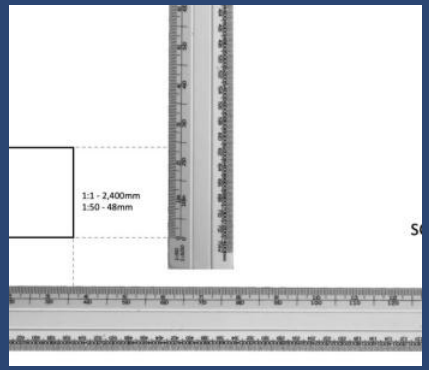
Mastering technical English for digital drafting.

Essential Vocabulary

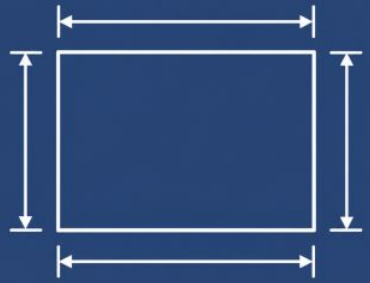
VOCABULARY

Blueprint - Technical drawing or design plan for a structure or mechanical part.

Layer - Method to organize drawing data, such as walls, electrical, or plumbing.



Scale - Ratio comparing a drawing's size to the object's actual real-life size.



Dimension - Measurable extent of an object, including length, width, or height.

What is AutoCAD?

The Industry Standard

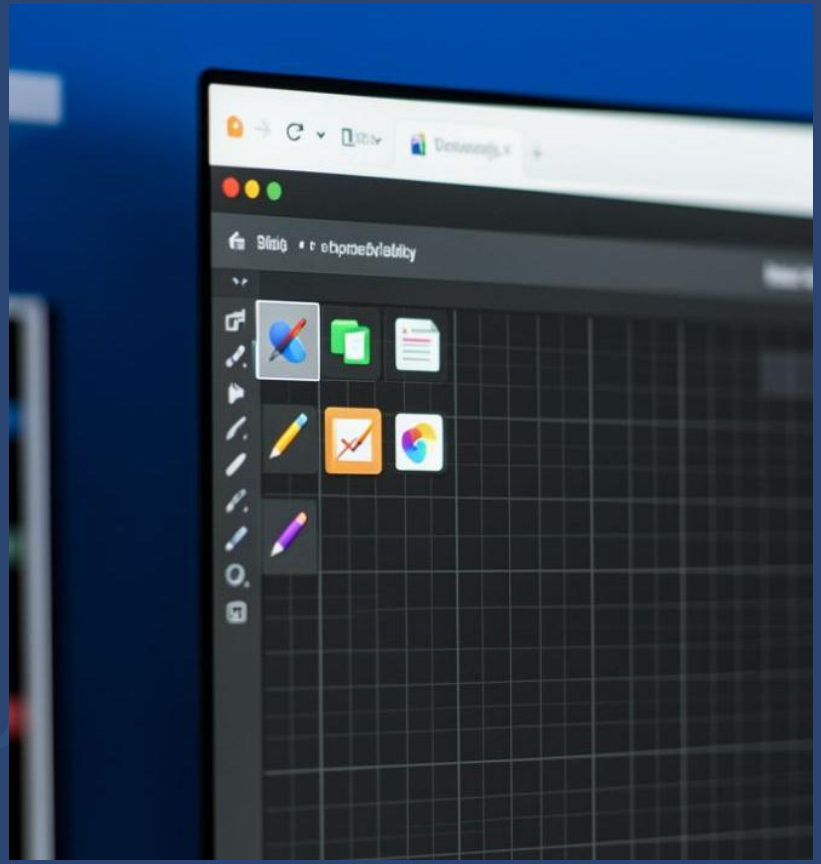
Have you ever wondered how complex skyscrapers or tiny engine parts are designed with such precision?

AutoCAD stands for *Automatic Computer-Aided Design*. It is the world's leading software for creating precise **2D and 3D drawings**.

Key point

Before AutoCAD, engineers had to draw everything by hand on massive drafting tables. One mistake meant starting over!

The User Interface (UI)



KEY CONCEPT

To navigate the software, you need to know the 'workspace' terms:

- **Ribbon**: The toolbar at the top containing commands.
- **Command Line**: Where you type instructions.
- **Crosshairs**: The cursor used to select and draw.

Precision and Accuracy

In AutoCAD, we don't 'sketch'—we **input data**.

Using **Coordinates** (X, Y, Z), designers ensure that every line is exactly where it needs to be. This is vital for **BIM** (Building Information Modelling).

> *Design is not just what it looks like and feels like. Design is how it works. — Steve Jobs*

Drawing vs. Modifying

Draw Commands

- **Line**: Creates straight segments.
- **Circle**: Creates a circle based on a radius.
- **Polyline**: A connected sequence of segments.

Modify Commands

- **Trim**: Cuts objects to meet the edges of other objects.
- **Offset**: Creates a parallel copy of an object.
- **Mirror**: Flips an object across a line.

Remember

Modifiers save time by allowing you to edit existing shapes rather than redrawing them.

The Design Project

Listen to the audio and answer the questions

Discussion about a CAD floor plan

▶ Play audio

1. What is Elena currently adding to the floor plan?
2. Which command did Elena use for the outer walls?
3. What scale will the final print use?
4. What file format does Mark expect to receive?

Answers on the next slide...

The Design Project

Check your answers below

Discussion about a CAD floor plan

▶ Play audio

1. Dimensions for the main corridor.
2. The Offset command.
3. 1:50.
4. DWG file.

2D Drafting vs 3D Modelling

Most architects start with **2D drafting** to create floor plans and elevations.

However, **3D modelling** allows us to create 'solids' and 'meshes' to see a realistic version of the building before a single brick is laid.

Example

A 2D plan is like a map; a 3D model is like a digital dollhouse.

Why English is Crucial

AutoCAD was developed in the USA, and the **English interface** is the global standard. Whether you work in Warsaw, London, or Dubai, the commands like *EXTRUDE* or *EXPLODE* remain the same.

Conceptual Check

Using layers in AutoCAD is mainly for aesthetic purposes to make the drawing look colourful.

TRUE

FALSE

Now it's time to explain why...

Conceptual Check

Using layers in AutoCAD is mainly for aesthetic purposes to make the drawing look colourful.

Why is that?

a) Layers are only used when you want to print the project in different colours for a presentation.

b) Layers are for structural organisation, allowing users to hide or lock specific elements like plumbing or electricity.

Answers on the next slide...

Conceptual Check

✅

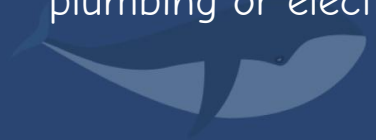
Using layers in AutoCAD is mainly for aesthetic purposes to make the drawing look colourful.

👎

Why is that?

a) Layers are only used when you want to print the project in different colours for a presentation.

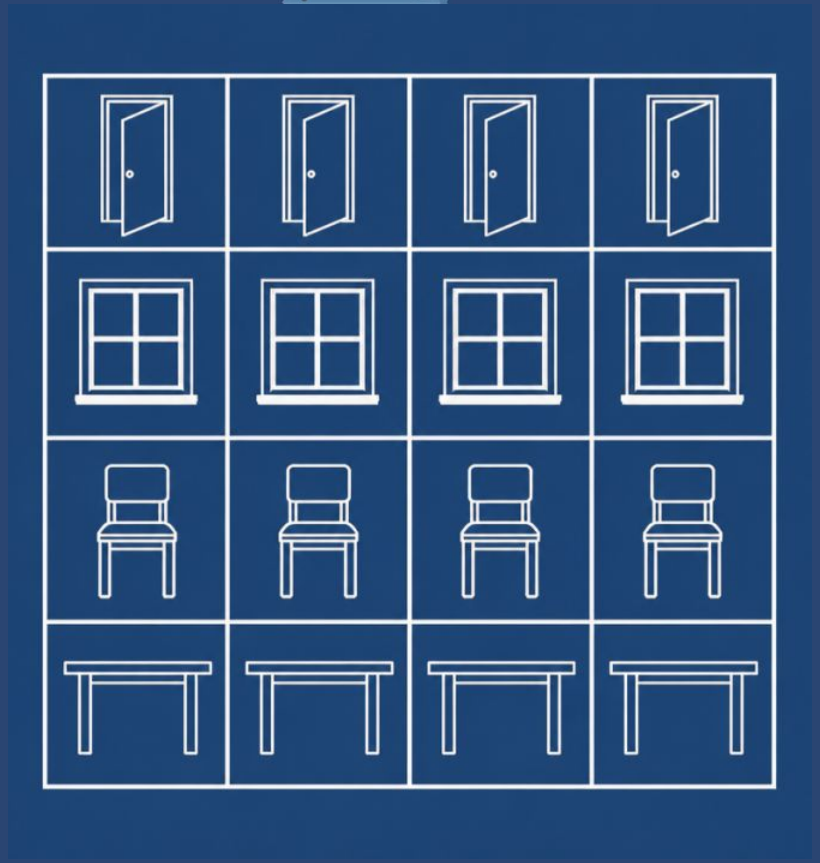
b) Layers are for structural organisation, allowing users to hide or lock specific elements like plumbing or electricity. ✅



Blocks and Templates

In AutoCAD, a **Block** is a pre-drawn object (like a door, a chair, or a window) that you can insert multiple times.

This speeds up the workflow significantly. Using **Templates** (.DWT) ensures every project starts with the same units and settings.



The Future of Design

With AI now able to generate architectural plans, do you think human AutoCAD experts will still be needed in 10 years? Why or why not?

The Future of Design

✅

You might have said...

Yes, AI requires human oversight for safety and building codes.

Expertise is needed to interpret non-linear client needs.

Human designers provide creative thinking that AI lacks.

The role may shift from 'drawing' to 'auditing' AI models.

Ready to Draft?

You now have the basic vocabulary to navigate the world's most powerful design tool.

Next steps:

- Practice the commands in English.
- Explore 3D 'Extrusion'.
- Start your first 'Layout'!