

# Chapter 1: Introduction about engineering drawing

## Drawing

The graphical representation of any object or idea can be termed as drawing. A drawing can be prepared either using free hand or using engineering instruments or using computer program.

## Types of Drawing

1. Artistic Drawing
2. Engineering Drawing

## Artistic Drawing

The drawing representing any object or idea which is sketched in free hand using imagination of artist and in which proper scaling and dimensioning is not maintained is called an artistic drawing. Example: Painting, Posters, arts etc.

## Engineering Drawing

Engineering drawing can be defined as a graphical language used by engineers and other technical personnel associated with the engineering profession which fully and clearly defines the requirements for engineered items. It is a two dimensional representation of a three dimensional object.

In other words, The art of representing a real or imaginary object precisely using some graphics, symbols, letters and numbers with the help of engineering drawing instruments is called engineering drawing.

The art of representing engineering objects such as buildings, roads, machines, circuits etc. on a paper is called engineering drawing.

<b>Artistic drawing</b>	<b>Engineering drawing</b>
artistic drawing is to convey emotion or artistic sensitivity in some way.	Purpose of engineering drawing is to convey information about engineering object or idea.
Can be understood by all.	Need some specific knowledge or training to understand.
Scale maintaining is not necessary	Scale maintaining is necessary
No special requirement of engineering instruments.	Engineering drawing instruments is used to make the drawing precise.
An artistic drawing may not be numerically specific and informative.	An engineering drawing must be numerically specific and informative.
Standard drawing code need not to be followed.	Standard drawing code (like ISO, ANSI, JIS, BS etc,) must be maintained

## Applications of Engineering Drawing

Engineering drawing is an essential part of almost all engineering projects. Some important uses of engineering drawing are mentioned below:

1. It is used in ships for navigation.
2. For manufacturing of machines, automobiles etc.
3. For construction of buildings, roads, bridges, dams, electrical and telecommunication structures etc.
4. For manufacturing of electric appliances like TV, phone, computers etc.

## **Types of Engineering Drawing**

Engineering drawing can be grouped into following 4 major categories:

1. Geometrical Drawing
  - a. Plane geometrical drawing
  - b. Solid geometrical drawing
2. Mechanical Engineering Drawing
3. Civil Engineering Drawing
4. Electrical & Electronics Engineering drawing etc.

### **Geometric Drawing**

The art of representing geometric objects such as rectangles, squares, cubes, cones, cylinders, spheres etc. on a paper is called geometric drawing. If the object has only 2 dimensions i.e. length and breadth (as Rectangles, squares, triangles etc.), it is called Plane geometrical drawing and if it has 3 dimensions i.e. length, breadth and thickness/depth (as cube, prism, sphere, cylinder etc.), it is called Solid geometrical drawing.

### **Mechanical Engineering Drawing**

The art of representing mechanical engineering objects such as machines, machine parts etc. on a paper are called mechanical engineering drawing or machine drawing. It is used by mechanical engineers to express mechanical engineering works and projects for actual execution.

### **Electrical Engineering Drawing**

The art of representing electrical engineering objects such as motors, generators, transformers, wiring diagrams etc. on a paper are called electrical engineering drawing. It is used by electrical engineers to express electrical engineering works and projects for actual execution.

The art of representing electronic circuits of TV, Phones, computers etc. on a paper are called electronic engineering drawing or electronic drawing. It is used by electronic engineers to express electronic engineering works and projects for actual execution.

### **Drawing Standards**

<b>Country/Region</b>	<b>Code/Standard</b>	<b>Full Meaning</b>
Worldwide	<b>ISO</b>	International Organization for Standardization
USA	ANSI	American National Standards Institute
JAPAN	JIS	Japanese Industrial Standards
UK	BS	British Standards