CAD

Computer-Aided Design (CAD) is a very specialised and powerful type of graphics software used in the design, drafting and documentation of products in the manufacturing process. In fact, it is used by manufacturers, engineers, and architects to create computerised designs of objects which they will then build. Examples of products designed using CAD include cars, bridges, buildings, circuits diagrams, maps and plans. CAD is usually **vector-based software.** However, packages are very powerful and often require a lot of memory to run.
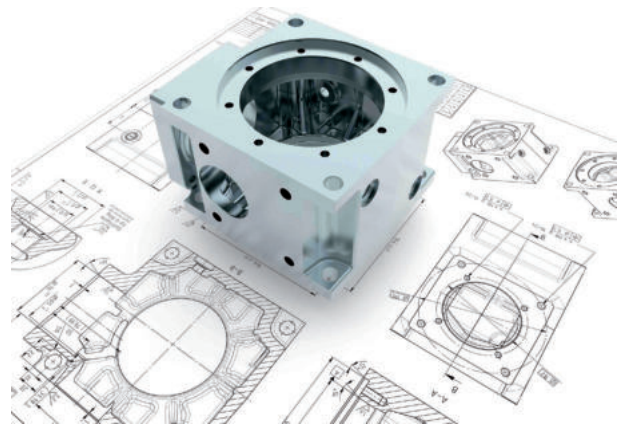
With CAD it is possible to do the following activities:

- design an object in two dimensions (e.g. height and width) and then process it into a three-dimensional design. The object can then be rotated to see how it looks from any angle
- perform calculations, e.g. calculating the cost of the object based upon a database of standard costs for the product's components
- suggest suitable materials and components to do a particular job
- simulate how the object will perform under certain conditions.

CAD has many advantages. Designs can be created very quickly, especially when the system has a library of standard components. They can be changed quickly and easily, and good systems can produce high-resolution images that are almost lifelike.

However, there also some drawbacks. Professional CAD systems require powerful hardware such as microcomputers with special chips. CAD software is very expensive and complex, so users need a lot of training in its use. Moreover, a special printer or plotter is usually required for printing professional design renderings.

Apart from producing detailed engineering designs of physical components, CAD can also be used:

- to create conceptual designs product layouts, strength and dynamic analysis of assembly and the manufacturing processes themselves
- to prepare environmental impact reports, in which computer-aided designs are used in photographs to produce a rendering of the appearance when the new structures are built.

CAD systems exist today for all of the major computer platforms, including Windows, Linux, Unix and Mac. The most popular is AutoCAD, which is quite expensive. The user interface generally centres around a computer mouse, but a pen or a graphic tablet can also be used. View manipulation can be accomplished with a space mouse (or space ball).

CAD is also known as **CADD (Computer-Aided Design and Drafting)** and is different, although similar, from **CAGD (Computer-Aided Geometric Design)**, which is used to design geometric shapes for objects.
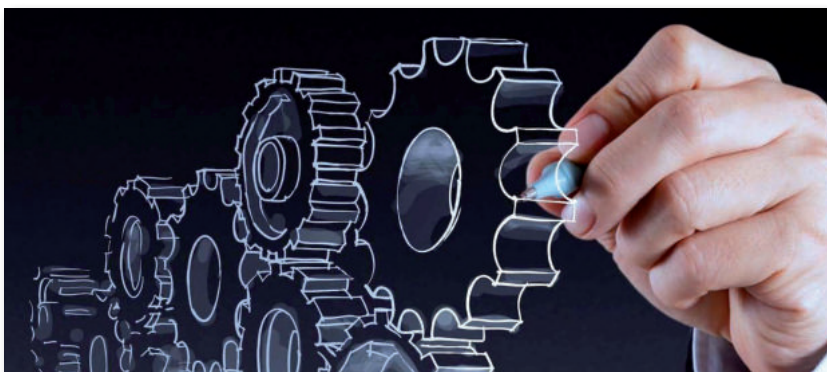
drawback:
svantaggio

1 📄 **Read the text on the previous page and find the following information.**

1. Who uses CAD
2. What it is
3. What it can do
4. Advantages
5. Disadvantages
6. Special uses
7. How AutoCAD works
8. Another name for CAD
9. An application similar to CAD

2 ✏️ **Decide if these sentences are true or false. Correct the false statements.**

T F

1. CAD lets you create designs very quickly.
2. It is slow to change design.
3. CAD software is very cheap.
4. CAD is easy to use and users need very little training.
5. Ordinary printers can produce professional renderings.
6. CAD is used for dynamic analysis.
7. CAD software runs well on all computers and doesn't require powerful hardware.
8. CAGD is a synonym of CAD.

3 📄 **Read the instructions and write a short text for an online request for information.**

You are the HR manager and are interested in an AutoCAD course for 5 junior engineers. Read the advert and write your message stating your intention to enrol your five employees. Ask for information about the number of students per class, if it is possible to have your employees in the same group, and if they also organise advanced courses.

--- **AutoCAD Essentials: 3-day Training Course in the UK** ---

This 3-day AutoCAD Essentials training course, offered by Symetri, is designed to provide participants with a comprehensive overview of AutoCAD. Throughout the course, they will learn to create, edit, and print their drawings and creations with AutoCAD, as well as master the features, techniques, and commands of the software. At the end of this 3-day AutoCAD Essentials training course, participants will have a skills assessment.
This training course is taught at a beginner's level, therefore no previous knowledge of AutoCAD is required. However, participants should possess basic PC knowledge.