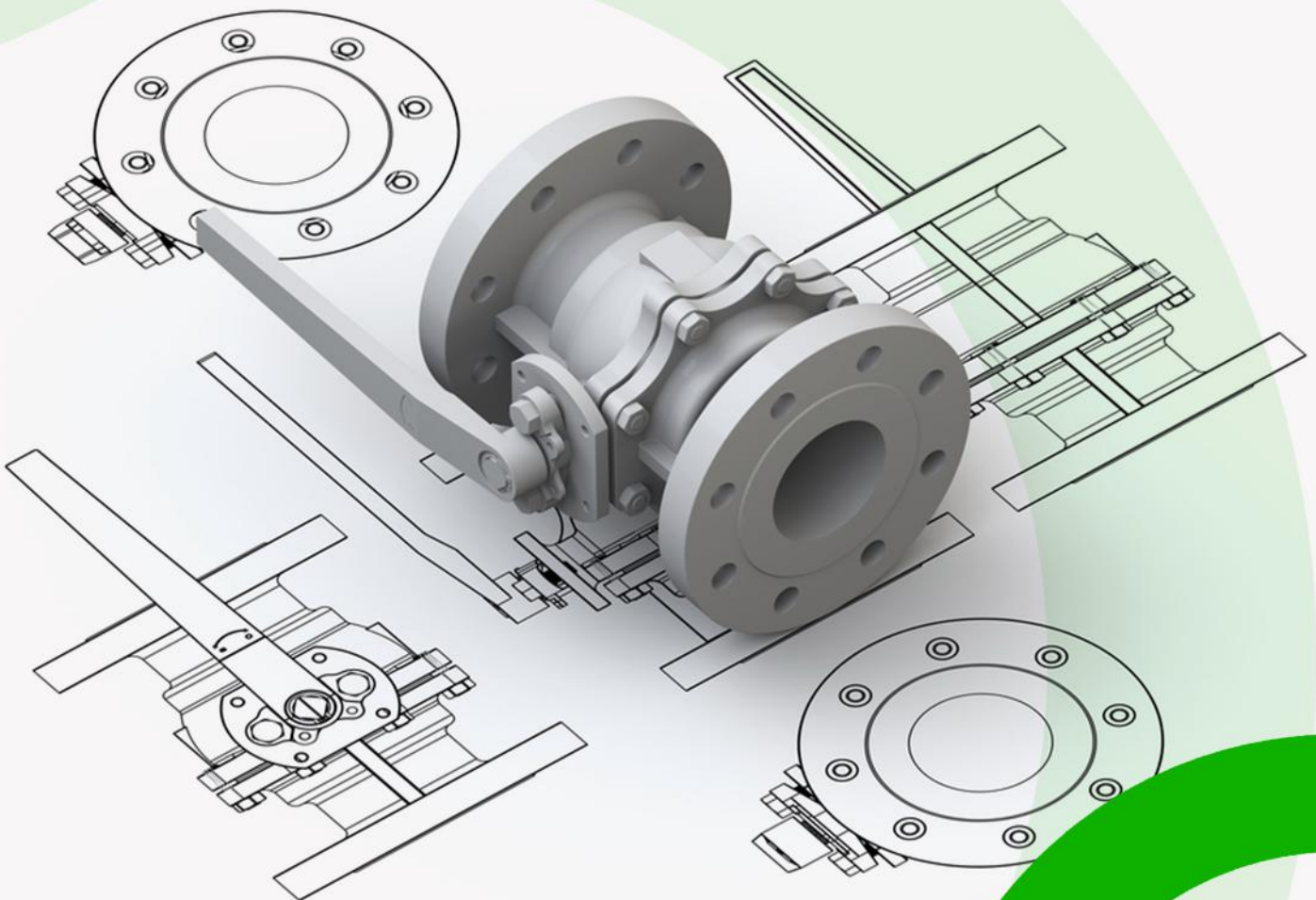


8 Different Types of

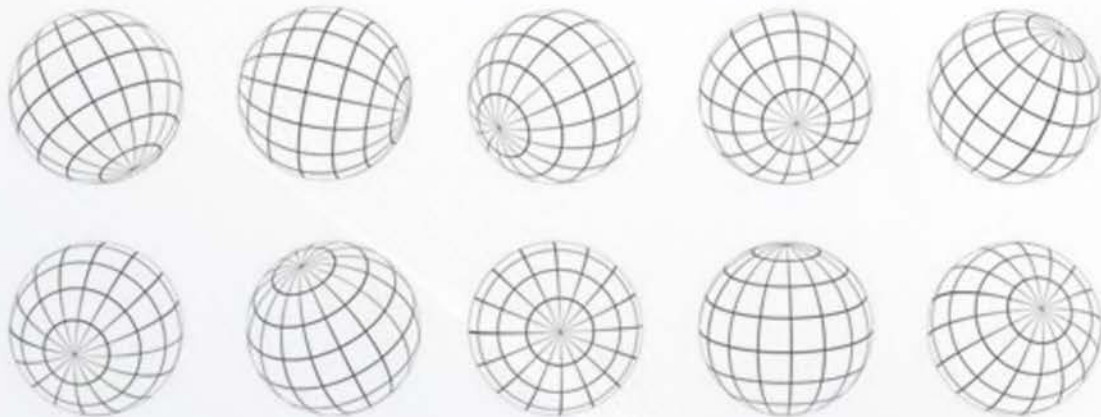
3D MODELING TECHNIQUES



Different Types of 3D Modeling Techniques

Different techniques of 3D modeling enable us to design a variety of objects, some better than others. Continue reading to find out which form of 3D design is ideal for you!

1. Primitive Modeling



It is the most basic form of 3D modeling. It is termed primitive because it is a fundamental style of 3D modeling that is mainly generated by combining several pre-existing forms. It involves building basic geometric shapes, cubes, spheres, etc.

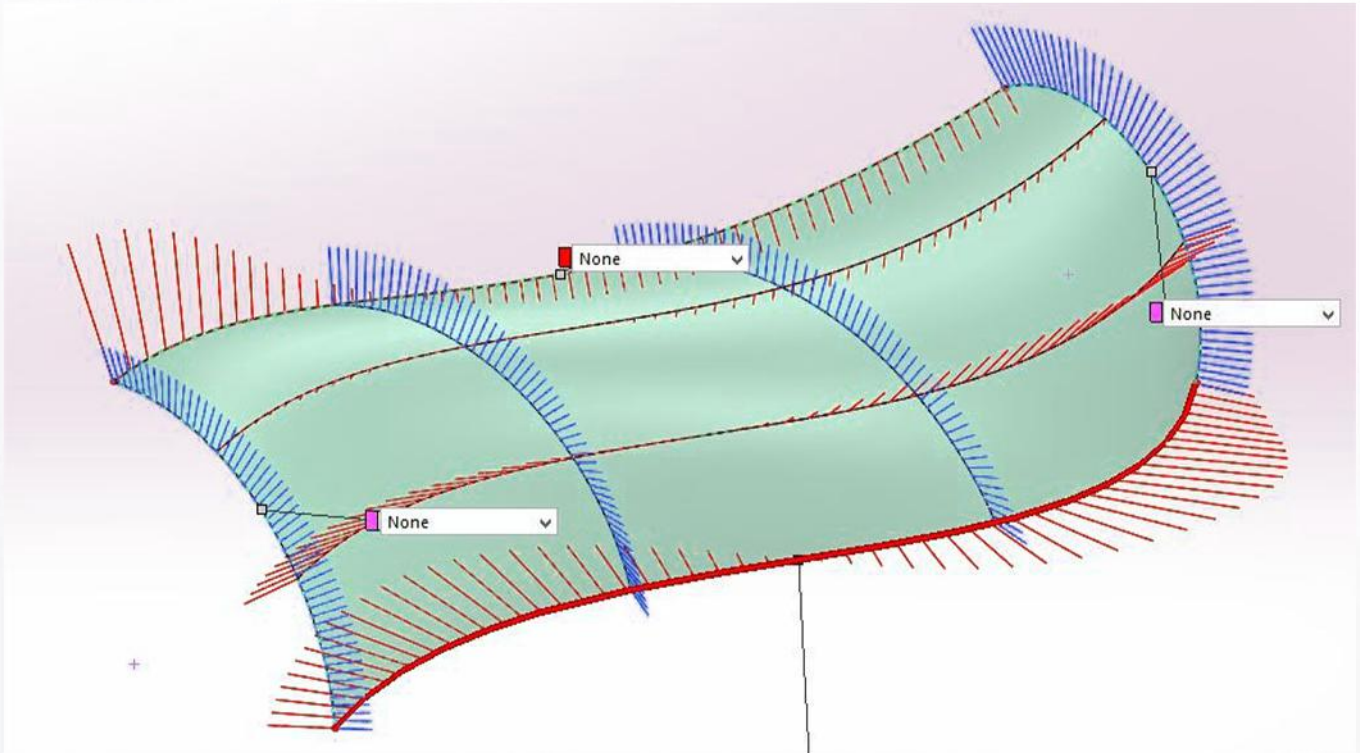
➤ Pros of Primitive Modeling

Simple and undemanding on computer, easy to adapt, create, & resemble the subject/s, Helps in adding details.

➤ Cons of Primitive Modeling

Not suitable for advanced designs, difficult to achieve high realism while creating organic shapes.

2. Surface Modeling



Surface Modeling is a computer-aided design that takes shape and curvature into account by depending on guiding lines. It's more complex than other models, but it can create very detailed results.

Most commonly used for aerodynamic and thermodynamic designs, this technique under 3D modeling gives smooth transition from one to other vertex and also best for seam integration of edges.

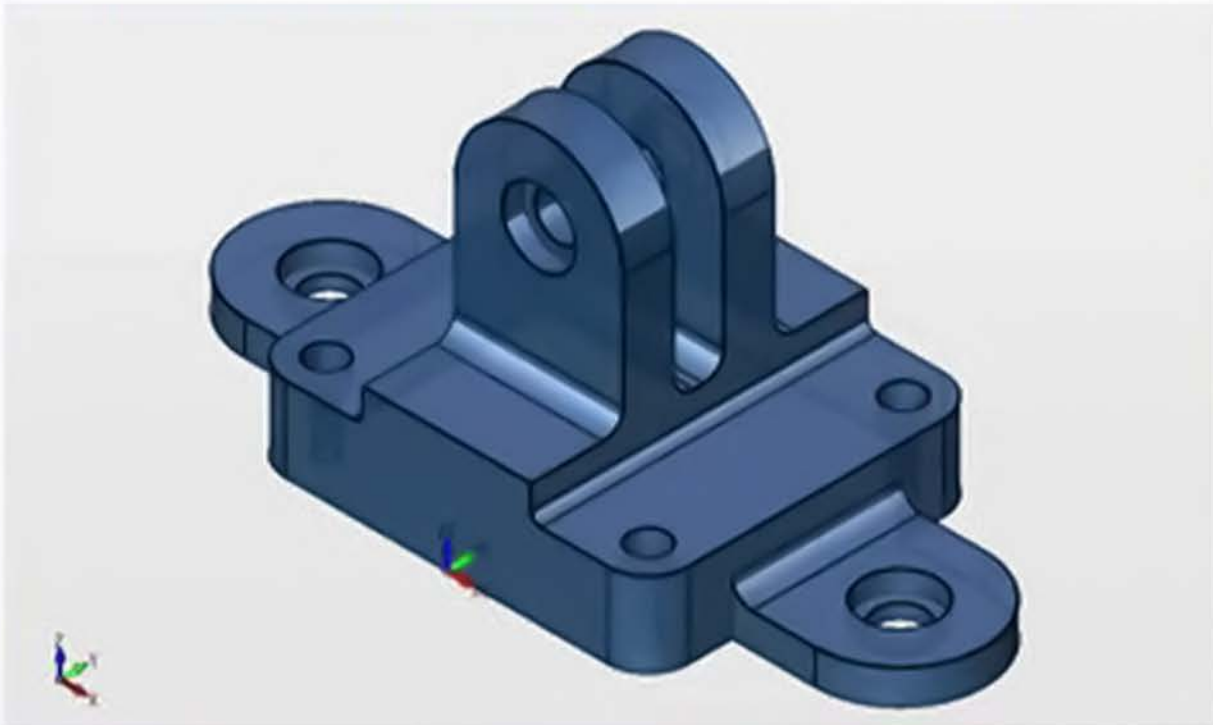
➤ Pros of Surface Modeling

Allows complex designs or surfaces to be created at ease, helps in creating designs where aesthetics are important.

➤ Cons of Surface Modeling

Steep learning curve and extensive knowledge required, requires high computational power and arsenal.

3. Solid Modeling



Solid modeling is all about creating complex shapes and manipulating them to look the way you want. It's a 3D modeling type that is used for sculpting.

This technique basically works with three-dimensional shapes such as spheres, cubes etc that represents the object in 3D digital way and includes refined and detailed geometry within.

No matter whatever the procedure is, these solid models are created out of the primitive shapes like spheres, sub edges etc. but these are a creation of a whole design rather than being hollow; this is why the word 'solid' is used for them.

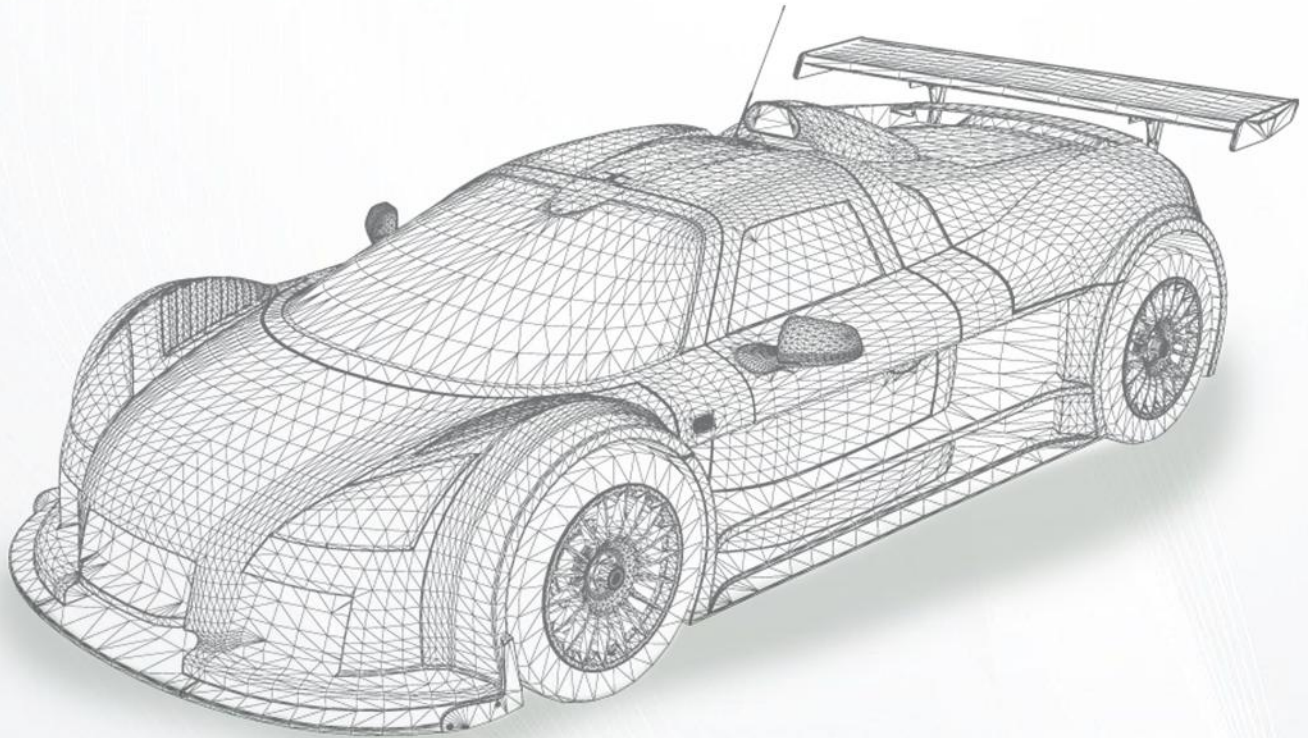
➤ Pros of Solid Modeling

It helps in creating a mathematically correct design, comes with user-friendly tools that are easy to use and learn, modeling tools and graphics are created at ease.

➤ Cons of Solid Modeling

Difficult to achieve high realism in organic designs and shapes.

4. Polygon Modeling



With polygonal 3D modelling type, designers can create intricate shapes and surfaces using X-Y coordinates to define different parts. They then combine these various pieces into one giant model or shape before being rendered out as pictures on a screen.

Also known by the name polyhedral modeling, this technique is most commonly used in the film and entertainment industry, gaming and animation sectors.

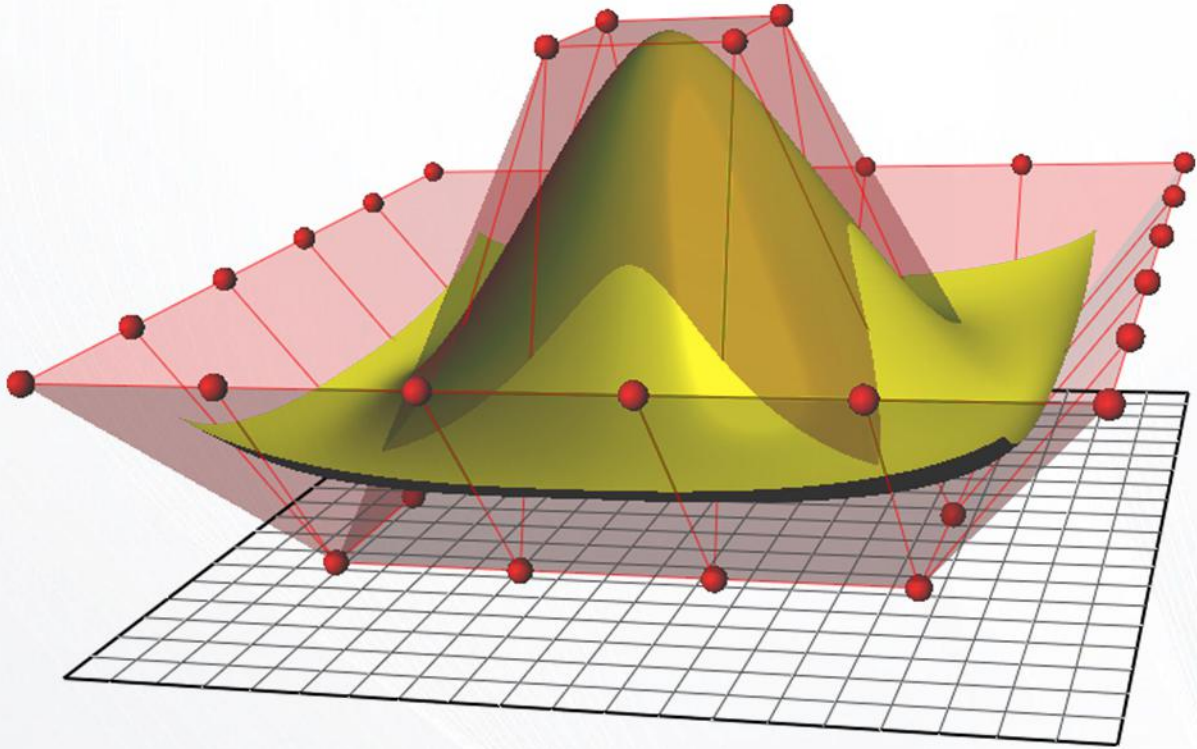
➤ Pros of Polygon Modeling

These are efficient and easy to render, always creates uniqueness in the designs, designs can be animated and deformed at ease.

➤ Cons of Polygon Modeling

Designs lack accuracy and geometrical errors are found commonly, not compatible with all types of resolutions, a time taking process mainly for complex designs.

5. Rational B-Spline Modeling



It is another 3D modeling type that uses curves and surfaces to create forms. It is very versatile, but it's also quite complicated!

This is the most common type of 3D modeling, which is used in almost every sector of the industry. As a process, the creators create dimensional-based designs, which later be twisted and curved as per the requirements to give it the desired look.

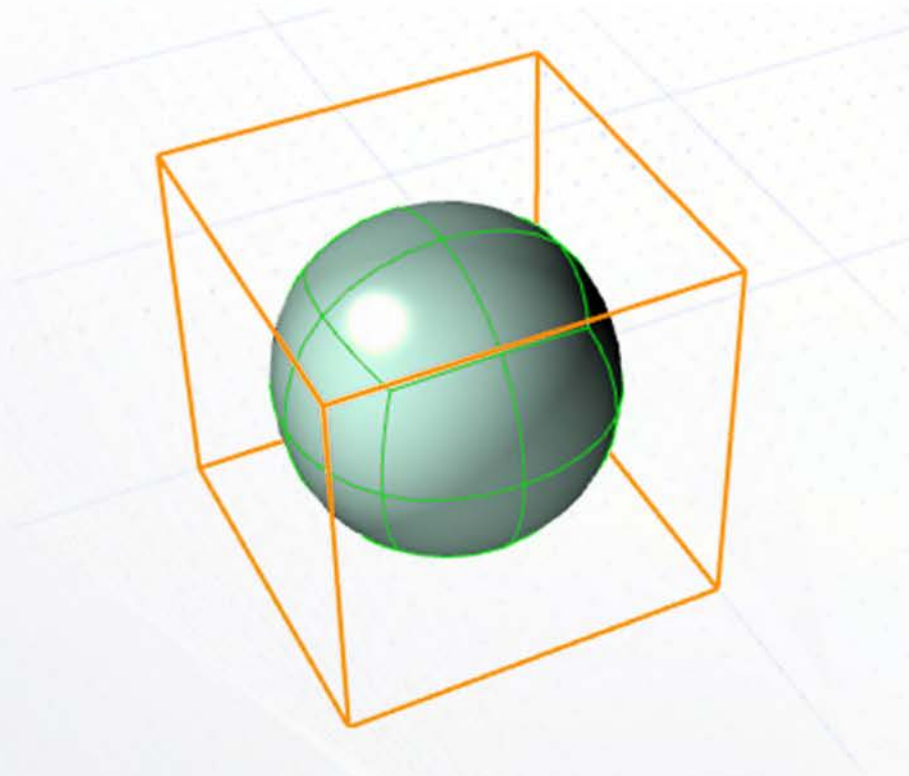
➤ Pros of Rational B-Spline Modeling

Easy to learn and master, provides tools and technique to create various designs and unique forms.

➤ Cons of Rational B-Spline Modeling

Steep learning curve, it takes time in creating the complex designs, requires high computational capacity.

6. NURBS Modeling



This is one of the most advanced forms of 3D modeling because it can create very complex shapes. The name stands for Non-Uniform Rational B-Splines (NURBS), which are very smooth curves used to create surfaces.

This modeling process mainly depends on the software for real to life design with a minimum or no human intervention.

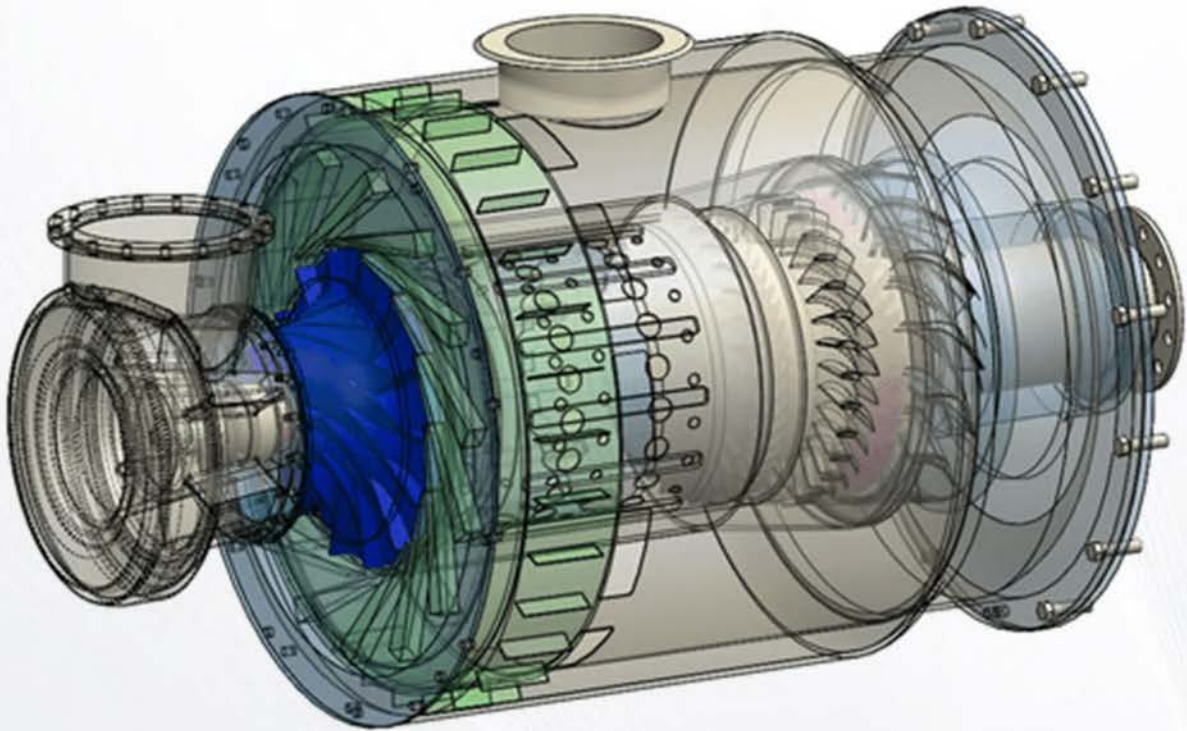
➤ Pros of NURBS Modeling

Gives the exact representation of the object, various types of organic shapes and curves can be created at ease, and creates designs for various advanced industries.

➤ Cons of NURBS Modeling

Does not create a three- or five-sided patch, there are some texture limitations.

7. CAD Modeling



CAD stands for Computer Aided Design, and it's another very advanced 3D designing technique. CAD is similar to solid modeling, but it's more precise and can use more complex shapes.

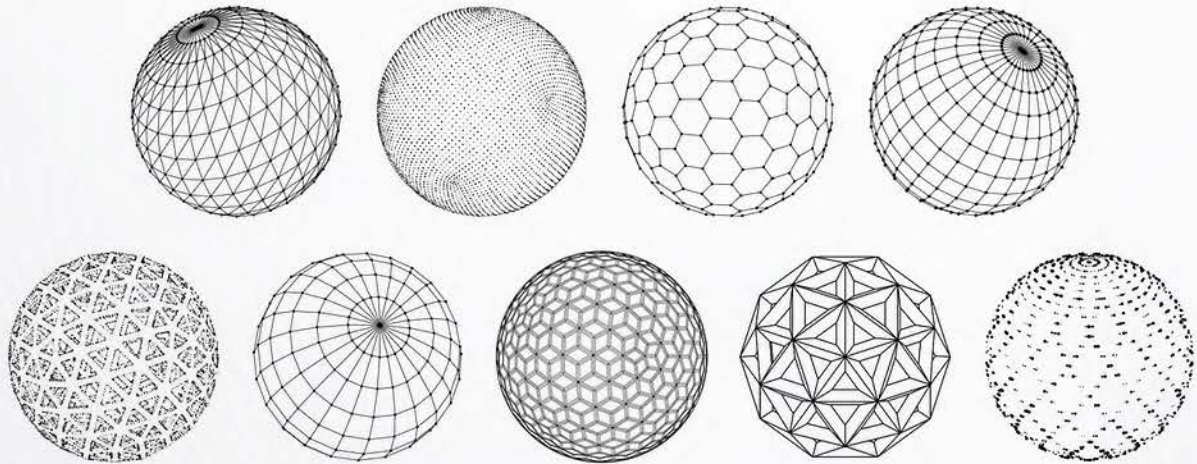
➤ Pros of CAD Modeling

It is a streamlined designing process, automatically generates multiple documents, software and design flexibility.

➤ Cons of CAD Modeling

Consumes large amount of computer processing power, software complexity.

8. Wireframe Modeling



Wireframe modeling is another form of 3D design that creates the mesh in the picture. This 3D modeling type uses lines to create objects, but they aren't filled in. This lets designers see how the model is shaped without adding any detail.

➤ Pros of Wireframe Modeling

Complex surfaces and curves can be created at ease, helps in creating solid models at ease, intersection of surfaces are not visible in the final design.

So, these are some common types of 3D modeling you should know. If you need a 3D model to be made, there are two ways of accomplishing this task. You can either use a 3d design software or you can outsource to an experienced company.

Conclusion

3D technology is spreading throughout the world of design and is becoming more accessible than ever. So, get ready to see what this technology has in store for you. If you're interested in learning some techniques to create 3D models yourself, there are many 3d design apps and software tools you can try!

Do you want to make your 3D models? Get a free quote from our 3D modeling company in India now!