

## P7 DESAIN PRODUK – PRAKTIKUM-TEORI

### ***FROM ART TO PART***

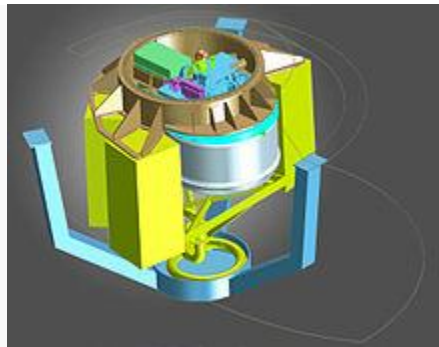
#### ***3D MODELING***

In 3D computer graphics, **3D modeling** is the process of developing a mathematical representation of any three-dimensional **surface** of an object (either inanimate or living) via specialized software. The product is called a **3D model**. It can be displayed as a two-dimensional image through a process called *3D rendering* or used in a computer simulation of physical phenomena. The model can also be physically created using 3D printing devices.

Models may be created automatically or manually. The manual modeling process of preparing geometric data for 3D computer graphics is similar to plastic arts such as sculpting.

#### Models

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3D model of a spectrograph<sup>[1]</sup>

3D models represent a 3D object using a collection of points in 3D space, connected by various geometric entities such as triangles, lines, curved surfaces, etc. Being a collection of data (points and other information), 3D models can be created by hand, algorithmically (procedural modeling), or scanned.

3D models are widely used anywhere in 3D graphics. Actually, their use predates the widespread use of 3D graphics on personal computers. Many computer games used pre-rendered images of 3D models as sprites before computers could render them in real-time.

Today, 3D models are used in a wide variety of fields. The medical industry uses detailed models of organs; these may be created with multiple 2-D image slices from an MRI or CT scan. The movie industry uses them as characters and objects for animated and real-life motion pictures. The video game industry uses them as assets for computer and video games. The science sector uses them as highly detailed models of chemical compounds. The architecture industry uses them to demonstrate proposed buildings and landscapes through Software Architectural Models. The engineering community uses them as designs of new devices, vehicles and structures as well as a host of other uses. In recent decades the earth science community has started to construct 3D geological models as a standard practice. 3D models can also be the basis for physical devices that are built with 3D printers or CNC machines.



### **Daftar Pustaka**

1. Lawson, Bryan. 1990. *How Designers Think*. Butterworth Architecture.
2. Pena, Parshall. 2006. *Problem Seeking – Fourth Edition*. HOK. Pub.
3. Roozenburg, N.F.M. & J. Eekels. 1995. *Product Design: Fundamentals and Methods*. John Wiley & Sons.