

# Wireframe modeling - Advantages

- Can quickly and efficiently convey information than multiview drawings.
- Can be used for finite element analysis.
- Can be used as input for CNC machines to generate simple parts.
- Contain most of the information needed to create surface, solid and higher order models

# Wireframe modeling - Disadvantages

- ☐ Tend to be not realistic
- ☐ Do not represent an actual solids (no surface and volume).
- ☐ Cannot model complex curved surfaces.
- ☐ Cannot be used to calculate dynamic properties.
- ☐ Ambiguity
- ☐ complex model difficult to interpret.

# Lecture No 34 Topic: Surface Modeling



“ A surface model represents the skin of an object, these skins have no thickness or material type ”

☐Surface modeling is more sophisticated than wireframe modeling in that it defines not only the edges of a 3D object, but also its surfaces.

☐In surface modeling, objects are defined by their bounding faces.

# Surface modeling - Advantages

- ☐ Eliminates ambiguity and non-uniqueness present in wireframe models by hiding lines not seen.
- ☐ Renders the model for better visualization and presentation, objects appear more realistic.
- ☐ Provides the surface geometry for CNC machining.
- ☐ Provides the geometry needed for mold and die design.
- ☐ Can be used to design and analyze complex free-formed surfaces (car bodies)
- ☐ Surface properties such as roughness, color and reflectivity can be assigned and demonstrated.

# Surface Entities



☐ Analytic entities include :

- Plane surface
- Ruled surface
- Surface of revolution
- Tabulated cylinder.

☐ Synthetic entities include

- Hermite Cubic spline surface
- B-spline surface
- Bezier surface • Coons patches.