

## Industrial Design: -

- "Industrial design is an applied art whereby the aesthetics and usability of mass-produced products may be improved for marketability and production."

- The role of an Industrial designer is to create and execute design solutions towards problem of form, usability, user ergonomics, engineering, marketing, brand development & sales.

- Industrial design is concerned with all the human aspects of machine-made products and their relationship to people and the environment.

- The designer is responsible for these products and their impact on society and nature.

- The designer accounts for the products human factors engineering, safety, form, color, maintenance and cost.

- Industrial design deals with consumer products as well as industrial products.

- In order to achieve these ends, designers must be involved in four major design and research activities: -

- \* the human-machine interface
- \* The environment
- \* Human behavior
- \* The product itself.

- Areas of design investigation include furniture, house wares, appliances, transportation, tools, farm equipment, medical/electronic instrument and recreation equipment.

- Industrial design is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer.

### Flexible manufacturing system:

- is a mfg system in which there is some amount of flexibility that allows the system to react in case of changes, whether predicted/unpredicted.

- 2 subcategories
  - machine flexibility (ability to change the order of the system)
  - Routing flexibility, (ability to use multiple machines to perform the same operation on a part).

### Biorobotics:

- is a term that loosely covers the fields of cybernetics, bionics & even genetic engineering as a collective study.

- how to make robots that emulate / simulate living biological organisms mechanically (or) even chemically.

### Endoscopic & orthopedic surgery:

- going through small incision / natural body opening in order to diagnose & treat disease.

- also named as minimally invasive surgery (MIS) (i.e) diagnosis & treatments can be done with reduced body cavity invasion

- orthopedic surgery treat number of conditions that affect the bones, joints, muscles, ligaments, tendons & nerves.

### Magnetically levitated vehicle:

- is a transport method that uses magnetic levitation to move vehicles without touching the ground.

- with maglev, a vehicle travels along a guideway using magnets to create both lift & propulsion. there by reducing friction by a great extent & allowing very high speeds.