PRODOTHON' 25

DECONSTRUCTING DESIGN: *A Reverse Engineering Showdown*

Event Description:

In this event, participants will apply reverse engineering principles to analyse and recreate a product using CAD software. The event will provide an opportunity to develop skills in product modelling , reverse engineering (RE) and sustainable product design.

Objectives:

- Gain a deeper understanding of product design.
- Explore the use of CAD software for 3D modelling intricate designs.
- Apply reverse engineering principles redesign the product.
- Develop more sustainable solutions for the same.

The event will be divided into two parts:

1. **Reverse engineering the product:** Using CAD software, participants will model the redesigned product based on two criteria:
    1. Design aspect for improving the functionality and optimizing the design for manufacturability and assembly.
    2. Material optimization in view of creating a more sustainable product and aiming to achieve environment conscious manufacturing.
2. **Brief presentation** to justify the design and material optimization proposed.

Constraints:

To add an element of challenge and realism, participants will be provided with the following constraints:

- **Material Optimization:**
    1. Minimize material usage to reduce waste and environmental impact.
    2. Select eco-friendly and recyclable materials.
- **Design Optimization:**
    1. Enhance product performance, durability, and functionality.
    2. Optimize for ease of manufacturing and assembly.
- **Manufacturing Process Optimization:**

1. Minimize waste and energy consumption during production.

- **End-of-Life Considerations:**

1. Design for easy disassembly, repair, and recycling.

Assessment Method:

Participants will be assessed based on the following criteria:

- Quality of their 3D models.
- Adherence to the specified constraints.
- Ability to apply reverse engineering principles effectively within the given time frame.

Note:

- Participants will need to bring their own laptops with CAD software installed.
- Participants will have to prepare a presentation with the proposed reverse engineered product and justify their material optimization solution.