

**Department of Mechanical Engineering**  
**United Group Of Institutions, Naini, Pyaragraj**  
**INHOUSE SUMMER TRAINING-2<sup>nd</sup> & 3<sup>rd</sup> YEAR STUDENTS**  
**Advancement in Product Development and Manufacturing**

**Duration: Four Weeks (30 days) Time: 2hrs /Day**

**Venue: On online platform-Microsoft teams**

**Module 1: Product Development Methodology**

- Introduction to product and product design and analyzing the need of new product.
- Methodology of product development and Product life cycle
- Advancement of product development and strategies
- Project Based on Product Development Methodology (**Hands on Practice Session**)
- Assignment-Discussion # 1

**Module 2: Advancement in Product Development by using IOT**

- Concept of IoT and exploration of various application area
- Evolution of IoT and Challenges encountered while using IoT Technology
- Key Technologies of IoT
- Components of IoT
- Cost versus Usability of IoT
- Scope and application of IoT in conventional engineering areas
- Social Distancing for Covid-19 Using Internet of Things
- **Hands on Practice Session**
- Assignment-Discussion # 2
- Concept of Mechatronics
- Various components of Mechatronics system
- Application area
- Experimental demonstration using various electronic gate systems
- **Hands on Practice Session**
- Assignment-Discussion # 3

**Module 3: Advance Manufacturing Technique**

- Introduction to NC and CNC machines and their operations
- Programming for CNC Machine
- Working of CNC machines
- Introduction to Robotics
- Introduction to Additive Manufacturing

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- **Hands on Practice Session**
- Assignment-Discussion # 4