REPORT

Two Days Capacity Building Workshop

on

Drone Technology: Fundamentals and Flying Practice

A **two-day Capacity Building Workshop on "Drone Technology: Fundamentals and Flying Practice"** was organized by the **Department of Electronics and Communication Engineering (ECE), Jaypee University of Information Technology (JUIT), Waknaghat**, on **21–22 February 2026** at the **Drobotics Lab**, in collaboration with **Garuda Aerospace**. The workshop aimed at strengthening technical knowledge and promoting **Entrepreneurship, Innovation, Design Thinking, Startup culture, and IPR awareness** in the rapidly growing UAV sector.

The workshop was conducted by professional drone pilots and technical experts from Garuda Aerospace, who provided in-depth insights into the **fundamentals of Unmanned Aerial Vehicles (UAVs)**, including drone architecture, propulsion systems, flight control mechanisms, communication protocols, and regulatory compliance under DGCA guidelines. Special emphasis was given to **Agriculture Drone Innovation**, focusing on precision farming, crop monitoring, pesticide spraying automation, and sustainable agricultural practices. Students explored how drone technology is transforming agri-tech startups and enabling scalable entrepreneurial solutions.

Experts also introduced **FPV (First Person View) Drone Design**, explaining structural components such as flight controllers, ESCs, telemetry systems, cameras, GPS modules, and battery management systems. The session highlighted opportunities for **startup incubation, product design innovation, and intellectual property rights (IPR)** in drone hardware and software development. Live flying demonstrations and hands-on practice sessions enabled participants to observe calibration, take-off,
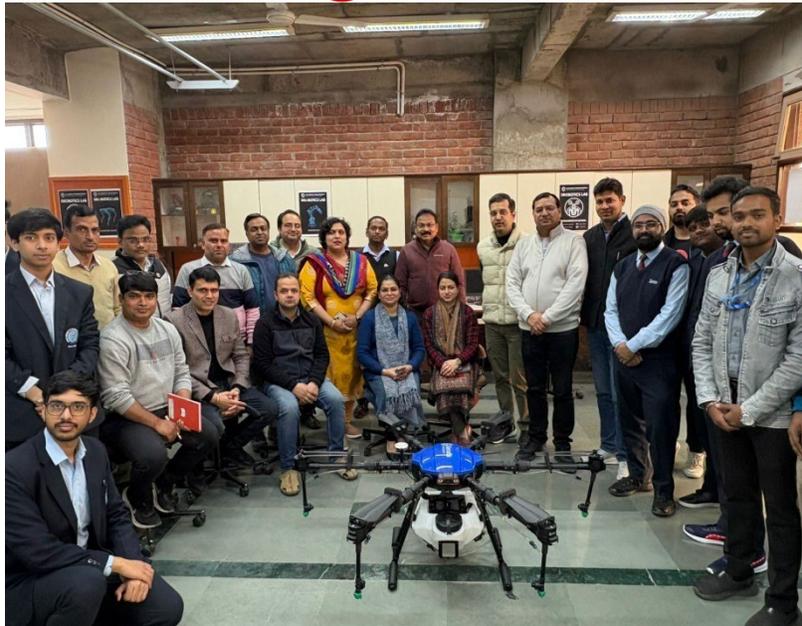
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hovering, maneuvering, and landing procedures. Maintenance protocols, safety standards, troubleshooting techniques, and operational best practices were also demonstrated.

Interactive discussions covered:

- Drone certification pathways
- Regulatory policies and airspace management
- Emerging drone markets
- Startup ecosystem opportunities
- Patent filing and IPR protection in UAV design

The workshop successfully bridged the gap between theoretical learning and real-world industrial applications. It encouraged students to think beyond academics towards **Innovation-driven Entrepreneurship and Technology-based Startups**, reinforcing the university's commitment to experiential learning and industry collaboration.

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