



Report on Workshop on Drone Technology: Innovations and Applications

Workshop Details

Institution	Maharaja Surajmal Institute of Technology (MSIT), New Delhi
Organizer	ECE Department and eCell MSIT
Topic	Drone Technology: Innovations and Applications
Speaker	Mr. Prateek Kumar, Mr. Deepak Kumar (DUCAT Technology)
Date	April 13, 2026
Time	11:00 AM – 12:00 PM (1 Hour)
Venue	MSIT Workshop Hall
Mode	Offline / On-Campus

1. Introduction

Prof. Neeru rathee , Head ECE Dept. and convenor eCell successfully organized a workshop on the topic of Drone Technology in collaboration with DUCAT Technology. The event was held from 11:00 AM to 12:00 PM and aimed at exposing students to the rapidly evolving world of unmanned aerial vehicles (UAVs), their technological underpinnings, and the diverse domains in which they are being deployed .

DUCAT Technology is a well-recognized training and development organization that bridges the gap between academic learning and industry-ready skills. Their expert-led sessions are designed to inspire students and provide them with practical exposure to cutting-edge technologies shaping the future.



2. About the Speaker

The workshop was conducted by Mr. Deepak Kumar and Mr. Prateek Kumar, the subject matter experts associated with DUCAT Technology. With extensive knowledge in embedded systems, robotics, and aerial technologies, Mr. Deepak Kumar is known for his ability to translate complex technical concepts into accessible and engaging discourse. His hands-on industry experience made the session highly interactive and informative for the student audience.

3. Key Topics Covered

The workshop covered a wide range of topics related to drone technology, including:

- Introduction to Unmanned Aerial Vehicles (UAVs) and their classification
- Core components of a drone: frame, motors, ESCs, flight controller, GPS module, and battery



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- Principles of drone flight: lift, thrust, drag, and torque
- Types of drones: multi-rotor, fixed-wing, hybrid VTOL, and nano drones
- Communication protocols and radio frequency management in drones
- Role of sensors (gyroscopes, accelerometers, barometers) in stabilization
- Applications of drones in agriculture, surveillance, delivery, disaster management, and filmography
- Regulatory framework and legal guidelines for drone operation in India (DGCA regulations)
- Career opportunities and pathways in the drone industry
- Emerging trends: AI-powered drones, swarm technology, and autonomous navigation

4. Workshop Highlights

The session commenced with a brief overview of the historical development of drone technology, tracing its origins from military applications to its widespread commercial use today. Mr. Deepak Kumar engaged the audience with live demonstrations using drone component kits and explained the working of each part in a systematic manner.

A significant portion of the workshop was dedicated to real-world use cases. The speaker elaborated on how precision agriculture has been revolutionized by UAVs equipped with multispectral cameras for crop health monitoring, as well as how delivery drones are being piloted by companies to optimize last-mile logistics.

Students showed keen interest in the discussion surrounding DGCA (Directorate General of Civil Aviation) regulations in India, particularly the Digital Sky Platform and drone registration requirements — a critical aspect for anyone looking to operate or develop drones commercially within the country.





5. Student Interaction & Q&A Session

An interactive Q&A session was held in the latter part of the workshop. Students raised several thought-provoking questions, including:

- How can AI be integrated into drone systems for autonomous obstacle avoidance?
- What programming languages and platforms are best suited for drone development?
- What is the market scope for drone technology in India over the next decade?
- How do swarm drones coordinate without collision in the air?

Mr. Deepak Kumar addressed each query with clarity, supplementing his answers with industry statistics and real-world examples. The interaction reflected the strong enthusiasm among students towards exploring drone technology as a potential career domain.



6. Learning Outcomes

Participants of the workshop were expected to gain the following:

- A foundational understanding of UAV hardware and software components
- Insight into the regulatory and safety considerations for drone operations in India
- Awareness of industry applications and career opportunities in the drone sector
- Motivation to explore hands-on drone projects and DUCAT's specialized training programs

7. Conclusion



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The workshop on Drone Technology organized by DUCAT Technology at MSIT was a highly successful and enriching event. Mr. Deepak Kumar's expert guidance provided students with a comprehensive overview of one of the most dynamic and fast-growing fields in technology. The session reinforced MSIT's commitment to providing students with industry-relevant knowledge beyond the classroom curriculum.

MSIT extends its sincere gratitude to DUCAT Technology and Mr. Deepak Kumar for their valuable contribution to the student community. Such initiatives play a pivotal role in nurturing future-ready engineers who are well-equipped to meet the demands of the evolving technology landscape.