

SYLLABUS: KEY-LEARNINGS FROM THE COURSE

INTRODUCTION TO DRONES

Drone terminologies, types of drones, applications across various industries, categories of drones in India.

DRONE FLIGHT PRINCIPLES & CONTROL

Forces acting on drone, multirotor stability and flight dynamics, drone movements and controls, motor and propeller configuration.

RULES AND REGULATIONS

Learn latest DGCA drone regulations, drone airspace map, drone flying zones, drone registration, pilot certification, do's and don'ts.

MULTIROTOR COMPONENTS AND SYSTEMS

Frame, motors, ESCs, propellers, flight controller, GPS, battery and power distribution board, radio communication system (RC & telemetry), sensors, connections between these components.

DRONE PERFORMANCE ESTIMATION

Thrust-to-weight ratio calculation, flight time estimation, payload capacity and AUV (All-Up Weight) calculation.

QUADCOPTER ASSEMBLY

Assembly of propulsion system, radio communication system, flight controller, power system and structural components, ensuring proper alignment, secure connections, followed by thorough safety checks and system testing.

DRONE CONFIGURATION

Introduction to Mission Planner software, sensor calibration, RC setup, parameter settings, flight modes, setting up geofence and failsafe setup.

SIMULATOR TRAINING – DRONE FLYING WITH RC

Introduction to simulator software, RC controls and orientation practice, manual flying exercises in simulator.

MAINTENANCE AND FLIGHT CHECKLIST

Essential pre-flight, in-flight and post-flight checklist for drone, preventive maintenance and best practices.

DRONE FLYING WITH INSTRUCTOR (VLOS)

Practice manual drone flying, in different modes and perform practical sessions of autonomous missions under instructor guidance in Visual Line of Sight (VLOS).

SIMULATION – AUTOMATED DRONE MISSIONS

Create waypoint navigation missions, plan grid missions, set configuration parameters, upload and simulate missions in Mission Planner.

CAPSTONE PROJECT

Autonomous Waypoint-based Parcel Delivery
Integrate a servo-based payload release mechanism, with the drone, configure it, plan and execute a waypoint-based autonomous parcel delivery mission.



DAY 1-3	1:00PM TO 6:00PM	CLASSROOM SESSION
DAY 4-5	8AM TO 3PM	ON-FIELD FLYING

FEES: Rs. 20,000 + 18% GST