Basic Course on Drone Technology

(In association with M/s Predulive Labs)

PREDULIVE LABS Idea To Innovation

रा.इ.सू.प्रौ.सं NIELIT GORAKHPUR

Course Fee
₹ 3900/- (Including GST)
Duration
30 Hours (1 Week)

Mode of Course
In-Campus

Eligibility:

Candidates with 10th Appearing onwards without any prior knowledge of any technology are required to register themselves for this course.

Course Contents:

Module 1: Introduction to Drones
Module 2: Drone Components and Mechanics
Module 3: Drone Flight Theory
Module 4: Flight Simulator Training
Module 5: Practical Drone Assembly
Module 6: Basic Flight Training
Module 7: Advanced Flight Training
Module 8: Maintenance and Troubleshooting
Module 9: Final Assessment and Certification

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For more information please visit
https://nielit.gov.in/gorakhpur/index.php
OR
https://regn.nielitvte.edu.in

Hostel Facility available for boys only.

Contact Information
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Interested candidates may visit *https://nielit.gov.in/gorakhpur/index.php* for details and apply online

Course Name	**Basic Course on Drone Technology** **(In association with M/s Predulive Labs)**
Duration	30 Hour (1 Week)
Fees	Rs 3900/- Including GST
Prerequisites	Candidates with 10th Appearing onwards without any prior knowledge of any technology are required to register themselves for this course.
Contact Person	1. Sh. A. G.Rao – Joint Director(M. No. 8317093870), agrao@nielit.gov.in 2. Sh. S.C. Agrawal – Principal Technical Officer (M.No.83170938, scagrawal@nielit.gov.in 3. Sh. Bhairav Mishra – Senior Technical Officer (M. No. 8317093885), bmishra@nielit.gov.in
Registration Process	**https://regn.nielitvte.edu.in**
Mode of Course	Offline (in-campus)
Hostel Facility	Hostel Facility Available for Boys Only
Module	**Topic**
Module 1	***Introduction to Drones (2 hours)*** 1. History and Evolution of Drones (30 mins) • Early developments • Modern advancements 2. Types of Drones (30 mins) • Fixed-wing • Rotary-wing (Multicopters) • Hybrid 3. Applications of Drones (1 hour) • Agriculture • Surveillance and Security • Mapping and Surveying • Photography and Videography • Industrial Inspections
Module 2	***Drone Components and Mechanics (4 hours)*** 1. Basic Drone Anatomy (1 hour) • Frame Motors and Propellers • Flight Controller • Battery and Power Systems 2. Sensors and Cameras (1 hour) • Types of sensors (GPS, IMU, LiDAR, etc.) • Camera types and their uses 3. Radio Communication and Control Systems (1 hour) • Transmitters and receivers • Remote control basics 4. Assembly and Disassembly (1 hour) • Basic tools and techniques • Safety precautions
Module 3	***Drone Flight Theory (3 hours)*** 1. Principles of Flight (1 hour) • Aerodynamics • Thrust, lift, drag, and weight 2. Flight Dynamics and Control (1 hour) • Pitch, roll, yaw • Stabilization and navigation 3. Drone Regulations and Safety (1 hour) Local and international regulations Safe flying practices

	• No-fly zones and restricted areas
Module 4	***Flight Simulator Training (4 hours)*** 1. Introduction to Flight Simulators (30 mins) • Benefits and setup 2. Basic Flight Maneuvers (1.30 hours) • Takeoff and landing • Hovering and altitude control 3. Intermediate Flight Maneuvers (1 hour) • Forward, backward, and lateral movements • Turns and rotations 4. Advanced Flight Maneuvers (1 hour) • Obstacle course navigation • Emergency procedures
Module 5	***Practical Drone Assembly (4 hours)*** 1. Hands-on Assembly (2 hours) • Assembling a drone from scratch • Installing and configuring components 2. Pre-Flight Checks and Calibration (2 hours) • Battery check and charging • Calibration of sensors and flight controller
Module 6	***Basic Flight Training (5 hours)*** 1. Initial Flight Training (3 hours) • Basic maneuvers in open space • Controlled takeoff and landing • Maintaining stable hover 2. Intermediate Flight Training (2 hours) • Flying patterns and routes • Coordinated turns and figure-eights • Flight in varying wind conditions
Module 7	***Advanced Flight Training (4 hours)*** 1. Advanced Maneuvers (2 hours) • Precision flying • Obstacle avoidance techniques 2. Autonomous Flight (2 hours) • GPS waypoint navigation • Return-to-home and failsafe features
Module 8	***Maintenance and Troubleshooting (2 hours)*** 1. Routine Maintenance (1 hour) • Cleaning, Firmware updates and inspecting parts 2. Common Issues and Fixes (1 hour) • Motor and propeller issues • Battery and power problems 3. Troubleshooting Guide Diagnosing sensor malfunctions & Addressing flight controller errors
Module 9	***Final Assessment and Certification (2 hours)*** 1. Written Test (30 mins) • Multiple-choice questions covering all modules 2. Practical Flight Test (1.30 hours) • Demonstrate basic to advanced maneuvers • Complete a simulated mission