



Ardu-Pilot Event Report

Event Name: Ardu-Pilot

Organized by: Aeromodelling Club, MNIT Jaipur

Date: November 7 2025

Venue: VLTC , MNIT Jaipur

Participants: Students from multiple years, Club Members, Faculty
Advisors

1 EXECUTIVE SUMMARY

The ArduPilot 101 Workshop was successfully conducted as part of Sphinx'25 at MNIT Jaipur. The event focused on bridging the gap between theoretical aerodynamics and practical UAV software configuration. By utilizing a “Simulation-First” approach, the workshop enabled students to learn the ArduPilot ecosystem safely and effectively without requiring immediate access to expensive hardware.

- **Event Status:** Completed Successfully
- **Format:** Educational Workshop (Individual, Hands-on)
- **Key Achievement:** Participants successfully connected Mission Planner to the SITL simulator and executed autonomous missions.

2 EVENT OVERVIEW

2.1 Objectives

The primary aim was to teach students the fundamentals of the ArduPilot ecosystem. Specific learning goals included:

- Setting up a virtual aircraft in a simulation environment.
- Understanding core functions of Flight Controllers (Pixhawk).
- Planning and executing autonomous missions (Takeoff, Waypoints, Return-to-Launch).

2.2 Event Scope

Duration	3 Hours
Eligibility	Open to all students interested in autonomous flight and UAVs.
Software	Mission Planner (GCS), ArduPilot SITL (Software In The Loop).
Hardware	Pixhawk Flight Controller, GPS & Compass, Telemetry
Demo	Radios.
Quiz	competition in quiz winner gets prize money.

3 TECHNICAL CONTENT & EXECUTION

3.1 Hardware Demonstration

Instructors provided a physical walkthrough of the essential components required for autonomous flight. This included:

- Pixhawk-style Flight Controllers: The brain of the UAV.
- GPS & Compass Modules: Essential for navigation and orientation.
- Telemetry Radios: For MAVLink communication between the drone and the ground station.

3.2 Software Training (Hands-on)

Participants engaged in a guided session covering:

- **Setup:** Installation of Mission Planner on Windows laptops.
- **Calibration:** Virtual calibration of level, compass, and radio settings.
- **Flight Modes:** Configuration of MANUAL, FBWA, and AUTO modes.
- **Mission Planning:** Design of custom flight paths and monitoring telemetry via SITL.

4 OPERATIONAL METRICS

Metric	Details	Status
Participation	Individual (Laptop required)	High Engagement
Resource Cost	Low (Open-source software)	Within Budget
Tech Support	Helpers available for troubleshooting	Effective

5 LEARNING OUTCOMES

By the end of the session, participants were able to:

- Install Mission Planner and connect to the SITL simulator.
- Understand concepts behind a Ground Control Station (GCS) and telemetry.
- Plan a simple autonomous mission (Takeoff, Waypoints, RTL).

- Conducting a Quiz to examine a learning outcome among students and we set a prize money to the winners

6 Prize money distribution

Total prize pool is Rs. 10,000 .

- 1st positions wins Rs 5000 .
- 2nd positions wins Rs 3000 .
- 3rd positions wins Rs 2000 .

7 KEY PERSONNEL

The event was coordinated by the Sphinx'25 team:

- Dhruv Bansal: +91 90232 83657
- Priyanshu Pal: +91 82186 51442

8 EVENT GALLERY

Photo 1: Workshop Session

Participants configuring Mission Planner software.



