



Drone Designing, Engineering and Flying



Outcome :

The student will understand where drones are used and how important drone technology will be in the future.

The student will understand how a drone is built from scratch

Requirement :

- Components : For Advance Level - PlutoX Drone
- Software or App : Drone Simulator & Drone Fundament App
- Required Laptop with internet connection
- No prior knowledge in programming

Drone Fundamentals – Basic

Module 1: Applications of drones and construction

Module 2: Basics of propellers and how does a drone fly?

Module 3: Propeller speed and making a drone fly?

Module 4: Pitch, Roll and Yaw motion of a Drone.

Module 5: Yaw motion of a Drone.

Module 6: Drone competition

```
drone.connect()
drone.takeOff()

drone.move(params:
  MoveParams(
    longitudinalSpeed: 50,
    verticalSpeed: 100,
    rotationSpeed: 100),
  duration: 4)

land
e.land()
```



Drone Designing, Engineering & Flying – Advance

Introduction

The Platform

PrimusX – The hardware

Magis – The software

Ease of tinkering with PlutoX

No programming for normal flights

Tinkering Loop

Header

```
void plutoInit ( )
```

```
void onLoopStart ( )
```

```
void plutoLoop ( )
```

```
void onLoopFinish ( )
```

Application Programming Interface (API)

Projects

Prerequisites

Cygnus IDE

Installation

Verification





Developer Mode

PROJECT 1: DEBUG APIs

PROJECT 2: CHUCK TO ARM

PROJECT 3: FLY ACRO (GYROSCOPE)

PROJECT 4: PHONE CLONE

PROJECT 5: OPEN SESAME (BAROMETER)

PROJECT 6: TEMPERATURE REACTIVE DRONE

PROJECT 7: TURTLE TURN

PROJECT 8: X RANGER

PROJECT 9: AIR PONG

PROJECT 10: WALLS ARE LAVA

PROJECT 11: HYBRID DRONE

PROJECT 12: AUTO-STABILIZATION