mx
ACADEMY
OF TECHNICAL & CREATIVE ARTS

DRONE/UAV TECHNOLOGY OPERATIONS TRAINING

MX ACADEMY OF TECHNICAL & CREATIVE ARTS
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MX ACADEMY | DRONE/UAV TECHNOLOGY COURSES

Here is a list of the drone/UAV courses we offer at MX Academy.
Some can be taken online while some can be taken physically only.

Our certifications are internationally recognized.

01 **DRONE/UAV TECHNOLOGY EXPERT TRAINING**
ONLINE/VIRTUAL CLASS TRAINING DURATION: 4 - 8 WEEKS

02 **STANDARD MULTI-ROTOR DRONE PILOT TRAINING**
PHYSICAL CLASS TRAINING DURATION:1 WEEK

03 **ADVANCED MULTI-ROTOR DRONE OPERATIONS TRAINING**
PHYSICAL CLASS TRAINING DURATION:2 - 3 WEEKS

04 **ADVANCED DRONE/UAV SURVEILLANCE OPERATIONS TRAINING**
CONTAINS OFFSHORE DRONE OPERATIONS TRAINING.
PHYSICAL CLASS TRAINING DURATION: 3 - 4 WEEKS

05 **DRONE/UAV ENGINEERING TRAINING**
CONTAINS **STANDARD MULTI-ROTOR DRONE PILOT TRAINING COURSE**
PHYSICAL CLASS TRAINING DURATION: 3 - 4 WEEKS

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Drone Technology Expert Training Program

This training series is designed to take learners from beginner to advanced levels in drone technology. Each module focuses on a specific area, providing theoretical and practical knowledge. The series is structured to be engaging, interactive, and accessible to all learners. All aspects of drone technology is covered in this program.

Lecture Delivery: The delivery format for this training is virtual/online.

Duration: 4 - 8 Weeks

Module 1. Introduction to Drones

* History and evolution of drones
* Classification of drones according to wing type
* Classification of drones according to use

Module 2. Components of a Drone and their functions

* The transmitter
* External parts of a drone and their functions
* Internal parts of a drone and their functions

Module 3. General Uses of Drones (UAVs)

1. Security & Surveillance
2. Agriculture & Farming
3. Filmmaking & Photography
4. Infrastructure & Construction

5. Delivery & Logistics
6. Emergency Response & Disaster Management
7. Environmental Monitoring & Conservation
8. Energy & Utilities
9. Transportation & Urban Planning

10. Military & Defense
11. Education & Research
12. Mining & Oil Exploration
13. Insurance & Real Estate
14. Law Enforcement & Public Safety
15. Sports & Entertainment

Module 4. Aerodynamics & Basic Flight Principles

* Fundamentals of aerodynamics
* Drone lift, balance, and stability
* Flight modes and control systems

Module 5. Drone Operation Techniques

* Pre-flight checks and safety protocols
* How to caliberate the GPS Compass
* Basic piloting skills: takeoff, hovering, landing
* Drone regulations and airspace awareness

Module 6. Advanced Flight Techniques

* Aerial photography and videography
* First Person View (FPV) flying & racing
* GPS, waypoint navigation, and autonomous flight

Module 7. Drone Design & Engineering

* Principles of drone design and aerodynamics
* Materials selection for performance
* Designing and prototyping custom drones

Module 8. Electronics & Software

* Flight controllers, sensors, and ESCs
* Popular drone softwares for operating drones
* Telemetry, mapping, and data analysis

Module 9. Emergency Retrieval of Drones

1. Introduction
2. Causes of Emergency Retrieval Situations
3. Emergency Retrieval Techniques
4. Safety Precautions During Retrieval
5. Best Practices for Prevention

Module 10. Maintenance & Troubleshooting of Drones

* Routine maintenance and battery care
* Common issues and troubleshooting methods
* Upgrading and modifying drone components

Module 11: Mitigating Drone Threats with Drone Jamming Technology

1. Introduction to Drone Jamming
2. Understanding Drone Jamming Technology
3. Types of Drone Jamming Techniques
4. Applications of Drone Jamming
5. Challenges & Limitations
6. Future of Anti-Drone Systems

Module 12. Future of Drone Technology

* Emerging trends: AI, automation, battery innovation
* Applications of AI in drones
* Ethics, privacy, and future regulations

Module 13. Assessment & Certification

Course Info:

Duration of course: 4 - 8 Weeks

Register at https://www.mxacademy.ng/online-class-registration-form/

Standard Multi-Copter Drone Pilot Training Course

Course Contents

1. Safety regulations for drones

2. Pre-flight preparation
Caliberation
Battery check
Motor check

3. Working with GPS

4. Risk Assessment

5. Multicopter drone flight practice

6. Take off techniques

7. Landing techniques

8. Flight maneuvers – Controls

9. Working with the drone camera

10. Emergency landing techniques

Training Duration: 1 Week (3 – 5 hours per day)

Advanced Multi-Rotor Drone Operations Course

COURSE CONTENTS

PART 1

1. Safety regulations for drones
2. Pre-flight preparation
    * GPS Caliberation
    * Battery check
    * Motor check
3. Working with GPS
4. Risk Assessment
5. Multicopter flight simulation
6. Launching the drone under normal circumstances
7. Landing the drone under normal circumstances
8. Flight manouvers and Controls
9. Working with the drone camera
10 Performing aerial Surveillance
11. Emergency drone retrieval techniques.

[How to get the drone back safely when there is a signal loss or interference]

PART 2 [Advanced]

1. Changing factory settings and customizing the operational capabilities to suit your needs
2. Advance flying manoeuvres.

3. Simultaneously controlling the aircraft while operating the camera (taking still shots)
4. Simultaneously controlling the aircraft while operating the camera (aiming the camera at a particular object/subject while the drone is flying).

5. How to maintain orientation when flying the aircraft
6. Emergency Take Off Techniques: How to take off in a bad landscape
7. How to set the aircraft to return to take off point automatically without additional inputs by the pilot

8. How to set the aircraft to follow a subject (e.g a car, dog, human e.t.c.) without being controlled by a pilot
9. Best practices for conducting aerial surveillance
10. More and more practical flights with the multicopter unit.
11. Knowing your flight distance and altitudes
12. Emergency take off and landing techniques.

Advanced Drone Aerial Surveillance Systems Operations Training

PART 1

1. Safety regulations for drones
2. Pre-flight preparation
    * GPS Caliberation
    * Battery check
    * Motor check
3. Working with GPS
4. Risk Assessment
5. Multicopter flight simulation
6. Take off techniques
7. Landing techniques
8. Flight manouvers and Controls
9. Working with the drone camera
10 Performing aerial Surveillance
11. Emergency drone retrieval techniques. [How to get the drone back safely when there is a signal loss or interference]

PART 2 [Advanced]

1. Changing factory settings and customizing the operational capabilities to suit your needs
2. Advance flying manoeuvres.

3. Simultaneously controlling the aircraft while operating the camera (taking still shots)4. Simultaneously controlling the aircraft while operating the camera (aiming the camera at a particular object/subject while the drone is flying).

5. How to maintain orientation when flying the aircraft6. Emergency Take Off Techniques: How to take off in a bad landscape.
7. How to set the aircraft to return to take off point automatically without additional inputs by the pilot

8. How to set the aircraft to follow a subject (e.g a car, dog, human e.t.c.) without being controlled by a pilot

9. Best practices for conducting aerial surveillance.
10. More and more practical flights with the multi-copter unit.

11. Knowing your flight distance and altitudes.
12. Emergency take off and landing techniques.

PART 3 [Mobile & Offshore Operations]

1. Mobile Drone Operation Techniques

A. How to operate a drone from the top of a moving vehicle
B. How to retrieve a drone from the top of a vehicle

2. Offshore Drone/UAV Operation Techniques

A. Rules to follow
B. How to take off from a boat on top of water
C. How to take off from a ship on the high sea
D. Things to note when operating from a ship on the high sea
E. How to land the aircraft unit on a boat on top of water
F. How to land the aircraft unit on a ship on the high sea

3. Drone Mapping Flight Techniques.

[A] Working with Waypoints
[B] How to setup drone to fly within a predefined path and return back to take off point by itself.

Training Duration: 3 - 4 Weeks

Class Type: Physical class.

We provide aall the equipment needed for the training.

Certificates will be issued to participants.

Please scroll down fore more details

Drone/UAV Engineering

Drone Designing, Assembling & Configuration

Requirements

Participants should already have basic knowledge of **drone piloting** else will have to take the **1 Week Standard Drone Piloting** Course first as a pre-requisite.

Course Outline

1. Drone/UAV technology overview
2. Types of drones
3. UAV Functions & industry usage
4. Power sources

5. Parts of a drone
6. Transmitters and receivers
7. Types of Transmitters
8. Functions of the different parts of a drone

9. Designing an unmanned aerial system
10. The MX Academy Rules of designing a drone
11. Assembling a drone
12. How to Invert the direction of the motors using ESCs
13. How to Install gps compass
14. Finalizing the assembling

15. Configuring the drone
16. Test flight
17. Observations
18. Extending the functionalities of a UAV.
19. Things that can be attached and why.
20. Types of imaging systems for drones

Project

Build a drone from scratch.
Questions & answer session.

DURATION OF TRAINING: 4 – 6 hours a day (5 days a week) : 2 - 3 Weeks