Training Course on Maintenance and Repair of Specific Drone Models

Professional Development Training Course Outline

Category	Drone Technology	**Duration**	10 Days
Base Fee	$6,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's rapidly expanding drone technology landscape, the demand for skilled professionals capable of ensuring the longevity and optimal performance of drone fleets is paramount. **Training Course on Maintenance and Repair of Specific Drone Models** focuses specifically on the popular **DJI Mavic** and **DJI Phantom** series, equipping participants with the essential knowledge and hands-on expertise to perform effective **Drone Repair Services** and preventative maintenance. Mastering these skills not only enhances the operational efficiency of drone usage but also significantly contributes to aviation safety and regulatory compliance.

This intensive course delves into the intricate systems of DJI drones, providing a thorough understanding of their mechanical, electrical, and software components. Through a blend of theoretical instruction and practical exercises, participants will gain proficiency in troubleshooting common issues, conducting routine inspections, executing precise repairs, and implementing proactive maintenance strategies. By focusing on these industry-leading drone models, this training offers highly relevant and immediately applicable skills for individuals and organizations seeking to maximize their drone investments and minimize downtime.

Programme Curriculum

Training Course on Maintenance and Repair of Specific Drone Models

Introduction

In today's rapidly expanding drone technology landscape, the demand for skilled professionals capable of ensuring the longevity and optimal performance of drone fleets is paramount. **Training Course on Maintenance and Repair of Specific Drone Models** focuses specifically on the popular **DJI Mavic** and **DJI Phantom** series, equipping participants with the essential knowledge and hands-on expertise to perform effective **Drone Repair Services** and preventative maintenance.

Mastering these skills not only enhances the operational efficiency of drone usage but also significantly contributes to aviation safety and regulatory compliance.

This intensive course delves into the intricate systems of DJI drones, providing a thorough understanding of their mechanical, electrical, and software components. Through a blend of theoretical instruction and practical exercises, participants will gain proficiency in troubleshooting common issues, conducting routine inspections, executing precise repairs, and implementing proactive maintenance strategies. By focusing on these industry-leading drone models, this training offers highly relevant and immediately applicable skills for individuals and organizations seeking to maximize their drone investments and minimize downtime.

Course Duration

10 days

Course Objectives

Upon completion of this training program, participants will be able to:

1. **Identify** key components and functionalities of **DJI Mavic series drones**.
2. **Diagnose** common hardware and software malfunctions in **DJI Phantom drones**.
3. Perform routine **drone maintenance checks** and procedures effectively.
4. Execute basic **drone repairs**, including component replacement.
5. Understand and apply **drone troubleshooting techniques**.
6. Calibrate and configure **drone sensors and systems** for optimal performance.
7. Interpret **drone flight logs** and identify potential issues.
8. Apply best practices for **drone battery maintenance** and safety.
9. Maintain and repair **drone propellers and motors**.
10. Address common issues with **drone camera and gimbal systems**.
11. Understand relevant **drone regulations and maintenance requirements**.
12. Implement effective **preventative maintenance schedules** for drones.
13. Utilize appropriate **drone repair tools and equipment** safely.

Organizational Benefits

Organizations that invest in this training for their personnel will experience several key benefits:

- Reduced downtime of drone assets.
- Lower repair costs through in-house maintenance capabilities.
- Improved operational efficiency and reliability of drone operations.
- Enhanced safety and compliance with aviation regulations.
- Increased lifespan of drone equipment.
- Greater return on investment in drone technology.
- Empowered and skilled technical teams.

Target Participants

1. Drone pilots and operators.
2. Maintenance technicians and engineers.
3. Public safety personnel (police, fire, search and rescue).
4. Surveyors and mapping professionals.
5. Agricultural technicians using drones.
6. Infrastructure inspection teams.

7. Drone service providers.
8. Individuals seeking a career in drone maintenance and repair.

Course Outline

Module 1: Introduction to DJI Drone Systems

- Overview of DJI Mavic and Phantom series models and their applications.
- Understanding the key components and their functions (airframe, motors, propellers, ESCs, flight controller, sensors, camera, gimbal, battery).
- Basic principles of drone flight and aerodynamics.
- Safety regulations and best practices for drone operation and maintenance.
- Case Study: Analysis of a common DJI drone operational scenario and potential maintenance needs.

Module 2: Electrical Systems and Power Management

- Understanding drone battery technology, types, and care.
- Battery charging and discharging principles and best practices.
- Troubleshooting common battery issues (swelling, charging errors).
- Power distribution within the drone and the role of the ESCs.
- Case Study: Identifying the cause of a battery failure and implementing preventative measures.

Module 3: Mechanical Systems and Airframe Maintenance

- Inspection and maintenance of the drone airframe for damage and wear.
- Propeller balancing, inspection, and replacement procedures.
- Motor maintenance, cleaning, and basic troubleshooting.
- Landing gear inspection and repair.
- Case Study: Repairing a damaged propeller mount and ensuring proper motor alignment.

Module 4: Sensors and Navigation Systems

- Understanding the function and calibration of GPS, IMU, compass, and barometer.
- Troubleshooting common sensor-related issues and error messages.
- Basic understanding of obstacle avoidance systems and their maintenance.
- Firmware updates and their impact on sensor performance.
- Case Study: Diagnosing and resolving GPS signal issues affecting drone navigation.

Module 5: Camera and Gimbal Systems

- Understanding the components and operation of DJI cameras and gimbals.
- Cleaning and maintaining camera lenses and sensors.
- Troubleshooting common gimbal issues (vibrations, stabilization problems).
- Basic gimbal repair and calibration.
- Case Study: Addressing a gimbal lock issue and ensuring smooth camera operation.

Module 6: Flight Controller and Software Diagnostics

- Understanding the role of the flight controller in drone operation.
- Connecting to the drone software and interpreting diagnostic information.
- Basic software troubleshooting and error code interpretation.
- Firmware updates for the flight controller and other components.

- Case Study: Analyzing flight logs to identify potential flight controller anomalies.

Module 7: Communication and Remote Control Systems

- Understanding the communication protocols between the drone and remote controller.
- Troubleshooting connection issues and signal interference.
- Calibration and maintenance of the remote controller.
- Understanding and updating remote controller firmware.
- Case Study: Resolving issues with intermittent signal loss during drone operation.

Module 8: Preventative Maintenance and Inspection Procedures

- Developing and implementing effective preventative maintenance schedules.
- Conducting pre-flight and post-flight inspections.
- Identifying potential issues before they lead to failures.
- Proper storage and handling of drone equipment.
- Case Study: Implementing a preventative maintenance checklist for a commercial drone fleet.

Module 9: Basic Drone Repair Techniques

- Safe handling of tools and equipment for drone repair.
- Disassembly and reassembly procedures for common components.
- Soldering and basic electrical repair techniques (if applicable and safe).
- Component replacement procedures (motors, propellers, landing gear).
- Case Study: Replacing a damaged motor and ensuring proper connection.

Module 10: Advanced Troubleshooting and Diagnostics

- Utilizing diagnostic tools and software for advanced troubleshooting.
- Analyzing complex error messages and system logs.
- Identifying root causes of recurring issues.
- Developing systematic troubleshooting approaches.
- Case Study: Diagnosing an intermittent flight instability issue through log analysis.

Module 11: Regulatory Compliance and Documentation

- Understanding relevant aviation regulations and maintenance requirements.
- Maintaining accurate maintenance logs and documentation.
- Reporting procedures for drone incidents and failures.
- Best practices for ensuring regulatory compliance.
- Case Study: Reviewing maintenance records for compliance with local aviation authorities.

Module 12: Drone Battery Management and Safety

- Advanced techniques for extending battery lifespan.
- Safe handling, storage, and transportation of drone batteries.
- Recognizing and addressing potential battery hazards.
- Proper disposal of drone batteries.
- Case Study: Implementing a safe battery charging and storage protocol for a drone operation.

Module 13: Camera and Gimbal Calibration and Repair

- Advanced calibration techniques for optimal camera and gimbal performance.
- Troubleshooting and repairing more complex gimbal issues.

- Understanding the impact of vibrations on camera stability.
- Techniques for ensuring smooth and stable aerial footage.
- Case Study: Calibrating a gimbal to eliminate unwanted vibrations in aerial video.

Module 14: Software and Firmware Management

- Understanding the importance of regular software and firmware updates.
- Performing firmware updates for the drone, remote controller, and batteries.
- Troubleshooting issues during the update process.
- Managing drone software settings for optimal performance.
- Case Study: Resolving compatibility issues after a firmware update.

Module 15: Practical Repair Workshop and Skill Assessment

- Hands-on repair exercises simulating real-world scenarios.
- Participants will work on actual DJI Mavic and Phantom drones.
- Individual skill assessment and feedback.
- Review of key learning objectives and best practices.
- Case Study: Participants will diagnose and repair a simulated drone malfunction under supervision.

Training Methodology

This course employs a blended learning approach, combining:

- **Interactive lectures** and presentations covering theoretical concepts.
- **Hands-on practical sessions** with DJI Mavic and Phantom drone models.
- **Live demonstrations** of maintenance and repair procedures.
- **Group exercises** and problem-solving scenarios.
- **Case studies** of real-world drone maintenance challenges and solutions.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org **or call** *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com