Undergraduate Certificate in Drone Technology Engineering

Drone Maintenance and Repair

Drone Maintenance and Repair: Key Terms and Vocabulary

1. Drone: A drone, also known as an unmanned aerial vehicle (UAV), is an aircraft that is operated remotely without a human pilot onboard. Drones can come in various shapes and sizes, and they are used for a wide range of applications, including photography, surveying, delivery, and military operations.
2. Maintenance: Maintenance refers to the routine care and upkeep of a drone to ensure that it remains in good working condition. Maintenance tasks may include cleaning the drone, checking and replacing worn-out parts, updating the software, and calibrating the sensors.
3. Repair: Repair refers to the process of fixing a drone that is not functioning properly. This may involve replacing damaged or broken parts, troubleshooting electrical issues, or addressing software problems.
4. Preventive Maintenance: Preventive maintenance is a proactive approach to maintaining a drone that involves regularly scheduled inspections and maintenance tasks to prevent future breakdowns and failures. Preventive maintenance may include visual inspections, functional tests, and component replacements.
5. Corrective Maintenance: Corrective maintenance is a reactive approach to maintaining a drone that involves repairing or replacing parts after a failure has occurred. Corrective maintenance may be necessary when preventive maintenance has been neglected or when a drone is exposed to harsh operating conditions.
6. Inspection: An inspection is a visual examination of a drone to identify any potential issues or areas of concern. Inspections may be performed visually, using cameras or other imaging devices, or through the use of sensors and diagnostic tools.
7. Calibration: Calibration is the process of adjusting the settings of a drone's sensors or instruments to ensure that they are providing accurate data. Calibration may be necessary when a drone has been exposed to extreme temperatures, humidity, or other environmental factors that can affect the accuracy of its sensors.
8. Troubleshooting: Troubleshooting is the process of identifying and resolving problems with a drone. Troubleshooting may involve analyzing data from sensors, inspecting components, or testing electrical circuits.
9. Spare Parts: Spare parts are replacement components that are kept on hand to replace worn-out or damaged parts on a drone. It is important to have a supply of spare parts available to ensure that a drone can be repaired quickly and efficiently.
10. Tools: Tools are the devices and equipment that are used to maintain and repair a drone. Common tools used in drone maintenance and repair include screwdrivers, wrenches, pliers, and multimeters.
11. Battery: A battery is a device that stores electrical energy and provides power to a drone. It is important to maintain and care for a drone's battery to ensure that it remains in good working condition and provides sufficient power for flight.
12. Motor: A motor is a device that converts electrical energy into mechanical energy, providing the power necessary for a drone to fly. Motors can wear out over time and may need to be replaced to maintain the

performance of a drone.
13. Propeller: A propeller is a rotating blade that provides thrust to a drone, allowing it to move through the air. Propellers can become damaged or worn out and may need to be replaced to maintain the performance and safety of a drone.
14. Sensor: A sensor is a device that detects and measures physical phenomena, such as temperature, pressure, or acceleration. Sensors are used on drones to provide data that is used for navigation, stabilization, and other functions.
15. Software: Software is a set of instructions that tell a drone what to do and how to operate. It is important to keep a drone's software up to date to ensure that it is functioning properly and to add new features and capabilities.
16. Firmware: Firmware is a type of software that is stored on a drone's hardware, such as its flight controller or sensors. Firmware provides low-level control of a drone's functions and may need to be updated to fix bugs or add new features.
17. Ground Control Station (GCS): A GCS is a device or software application that is used to control and monitor a drone from the ground. A GCS may be used for tasks such as planning flights, monitoring sensor data, and controlling the drone's camera.
18. Data Logging: Data logging is the process of recording data from a drone's sensors or instruments for later analysis. Data logging can be useful for identifying trends, analyzing performance, and troubleshooting issues.
19. Flight Controller: A flight controller is a device that controls the movements of a drone. It receives data from the drone's sensors and uses algorithms to determine the appropriate motor speeds and other control surfaces to maintain stable flight.
20. Payload: A payload is the cargo or equipment that is carried by a drone. Payloads may include cameras, sensors, or other equipment, and they can affect the performance and capabilities of a drone.

In conclusion, drone maintenance and repair requires a thorough understanding of key terms and vocabulary. By familiarizing yourself with these terms, you will be better equipped to perform routine maintenance, troubleshoot issues, and repair broken components on your drone. Whether you are a hobbyist or a professional drone operator, it is important to prioritize maintenance and repair to ensure the safety, performance, and longevity of your drone.