Model Curriculum

QP Name: Drone Operator – Multi Rotor

QP Code: AAS/Q6301

QP Version: 2.0

NSQF Level: 4

Model Curriculum Version: 2.0

Aerospace and Aviation Sector Skill Council | | Plot No. V77, & 78, 1st Main Rd, 2nd Stage, Peenya Industrial Area Phase IV, Peenya, Bengaluru, Karnataka 560058

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Training Parameters

Sector	Aerospace and Aviation
Sub-Sector	Drones/UAVs
Occupation	Drone Flight Operations
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3153.9900
Minimum Educational Qualification and Experience	12th Class Pass / Equivalent OR Grade 10th Pass with 02 Years Experience OR Previous relevant qualification of NSQF Level 3 with Minimum 3 Years Experience.
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	08/05/2025
Next Review Date	08/05/2028
NSQC Approval Date	08/05/2025
QP Version	2.0
Model Curriculum Creation Date	08/05/2025
Model Curriculum Valid Up to Date	08/05/2028
Model Curriculum Version	2.0
Minimum Duration of the Course	390 hours
Maximum Duration of the Course	390 hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner will be able to:

- Operate /Fly the drone during takeoff, take off, maneuvering, flying and landing of drones using a legal command & control link, transmitter and receiver pairs
- Applications may include power line inspections, wild-life monitoring, oil and gas exploration, land surveying, disaster relief, etc.
- Able to think logically, demonstrate good situational control, steady hand at operations, attention to detail, able to prioritize workload.
- Acquire basic communication skills and good interpersonal skills.
- Have work focus and ability to work under stressful situations.

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
AAS/N6301: Conducting pre-flight inspections, checks and operations NOS Version No. – 1.0 NSQF Level – 4	**20:00**	**25:00**	**15:00**	**00:00**	**60:00**
Module 1: Conducting pre-flight inspections, checks and operations	20:00	25:00	15:00	00:00	60:00
AAS/N6302: Flying the Mission NOS Version No. – 1.0 NSQF Level – 4	**60:00**	**70:00**	**20:00**	**00:00**	**150:00**
Module 2: Flying the mission	60:00	70:00	20:00	00:00	150:00
AAS/N6303: Conducting post-flight operations, checks and inspections NOS Version No. – 1.0 NSQF Level – 4	**20:00**	**25:00**	**15:00**	**00:00**	**60:00**
Module 3: Conducting post-flight operations, checks and inspections	20:00	25:00	15:00	00:00	60:00

AAS/N0501 Take action to deal with incidents, accidents, and emergencies in the aviation security environment NOS Version No. – 1.0 NSQF Level - 4	**10:00**	**15:00**	**05:00**	**00:00**	**30:00**
Module 4: Take action to deal with incidents, accidents, and emergencies in the aviation security environment	10:00	15:00	05:00	00:00	30:00
AAS/N6304: Understanding of Drone Policy and Related Regulatory Compliance NOS Version No. – 1.0 NSQF Level - 4	**10:00**	**15:00**	**05:00**	**00:00**	**30:00**
Module 5: Understanding of Drone Policy and Related Regulatory Compliance	10:00	15:00	05:00	00:00	30:00
DGT/VSQ/N0102- Employability Skills Nos Version No- 1.0 NSQF Level 4	**30:00**	**30:00**	**00:00**	**00:00**	**60:00**
Module 6: Employability Skills	30:00	30:00	00:00	00:00	60:00
Total Duration(A)	**150:00**	**180:00**	**60:00**	**00:00**	**390:00**

Module Details

Module 1: Conducting pre-flight inspections, checks and operations

Bridge Module or Mapped to AAS/N6301 v 1.0

Terminal Outcomes:

- ***Conducting pre-flight inspections***
- Visually inspect the drone for structural damage, inspect camera and battery for bulges and leaks in the case of battery powered drones, check check for leaks in fuel tank and cracks in the fuel tank housing in case of Internal Combustion (I.C) engine propulsion drones
- Inspect the propeller and the motor for free of rotational blockages and inspect the cleanliness of drone
- ***Pre-flight checks***
- check battery levels of the drone, remote control transmitter and Ground Control Station (GCS), the various components of the fuel system like battery / IC engine are secured to the drone as applicable, fuel pressure, temperature and quantity, in case of IC engine propulsion drone
- Check RPM and phase sensor to calculate the ignition timing, if motors are mounted and secured tightly and if the motor direction of rotation is in the correct sequence and applicable to the drone frame type (quad, hexa, octa)
- Check if propellers are correctly installed, that is CW (Pusher) propeller to the CW motor and CCW (Puller) propeller to the CCW motor, verify if the drone has acquired the navigation location from at least 4 satellites using GPS/NavIC communication
- Check if the camera/s are securely attached, check for the proper control and command link (C2 link) between drone, remote control transmitter and Ground Control Station (GCS), check if there is any component (including payload) not secured and interrupting the functions of drone
- Check if the electronic components such as flight controller, ESC (Electronic Speed Controller), GPS/NavIC, telemetry, receiver, transmitter, safety switch, buzzer operate properly
- **Pre-flight operations:**
- make sure the command & control link (C2 link) is established,
- calibrate the drone compass and IMU sensors (accelerometer)
- calibrate the RPM sensor for ignition timing and log engine RPM into the flight
- configure the three-position switch of the remote-control transmitter to operate the engine
- check for the correct movement and functioning of drone using the remote-control transmitter
- check the landing lock is in removed condition if required
- perform hand test or bench test for proper operation with the experienced instructor, if necessary
- perform flight maneuvers (Hover, Level, Yaw, Pitch and Roll)
- Make sure full and free of movement of camera gimbal and the camera is fully functional within range

Duration: *20:00*	**Duration**: *25:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• calibrate the RPM sensor for ignition timing and log engine RPM into the flight	• Visually inspect the drone for structural damage, inspect camera and battery for bulges and leaks in the case of battery powered drones, check check for leaks in fuel tank and cracks in the fuel tank housing in case of Internal Combustion (I.C) engine propulsion drones • Inspect the propeller and the motor for free of rotational blockages and inspect the cleanliness of drone • check battery levels of the drone, remote control transmitter and Ground Control Station (GCS), the various components of the fuel system like battery / IC engine are secured to the drone as applicable, fuel pressure, temperature and quantity, in case of IC engine propulsion drone • Check RPM and phase sensor to calculate the ignition timing, if motors are mounted and secured tightly and if the motor direction of rotation is in the correct sequence and applicable to the drone frame type (quad, hexa, octa) • Check if propellers are correctly installed, that is CW (Pusher) propeller to the CW motor and CCW (Puller) propeller to the CCW motor, verify if the drone has acquired the navigation location from at least 4 satellites using GPS/NavIC communication • Check if the camera/s are securely attached, check for the proper control and command link (C2 link) between drone, remote control transmitter and Ground Control Station (GCS), check if there is any component (including payload) not secured and interrupting the functions of drone • Check if the electronic components such as flight controller, ESC (Electronic Speed Controller), GPS/NavIC, telemetry, receiver, transmitter, safety switch, buzzer operate properly • make sure the command & control link (C2 link) is established, • calibrate the drone compass and IMU sensors (accelerometer) • configure the three-position switch of the remote control transmitter to operate the engine

	• check for the correct movement and functioning of drone using the remote-control transmitter • check the landing lock is in removed condition if required • perform hand test or bench test for proper operation with the experienced instructor, if necessary • perform flight maneuvers (Hover, Level, Yaw, Pitch and Roll) • make sure full and free of movement of camera gimbal and the camera is fully functional within range

Classroom Aids

White/Black, board, Markers, computer and projector, trainer's guide, student handbook,
Technical Documentation:

- Multi-Rotor Drone RPAS Operator's Training Manual & Checklists, logbook (Produced by AASSC & ratified, endorsed by DGCA master trainer) is mandatory for each candidate.
- Training and Procedure Manual
- Standard Operating Procedures for all owned drones
- Assembly, Maintenance, Operation documentation
- Flight logs, Pilot logs, Battery logs, Maintenance logs.
- Safety handling procedures of components

Tools, Equipment and Other Requirements

- Computer and projector,
- Nano category drone - 3, Micro category drone - 3, Small category drone - 3
- Multi - Rotor drone (Battery powered) or Multi - Rotor drone (Fuel / gas powered) and its components)
- Multi - Rotor Flight Simulator - 3
- Autonomous Flight Software - 6
- Radio Control Transmitter & Receiver - 6
- BLDC motors, ESCs, Propellers
- Flight Controller Board - 6
- ADS - B transponders – 6
- Flight Controller Board - 6
- LiPo batteries - 10
- Balance Charger - 5
- Telemetry, Buzzer, Safety Switch, Power Module, frames, arms, landing gears (static and retractable) GPS/GNSS NAVIC modules, On Screen Display (OSD), connecting wires, Binding/Jumper cables, USB cables - As required
- NPNT Module - 1
- Camera - 2
- Spraying system - 2
- Various payloads such as Thermal sensors, LiDAR sensors, multi- spectral sensors, servos, Gimbal
- Toolbox - Allen keys, Hex Wrenches, Soldering units, Screw Drivers, Wire Cutters, 3M tapes
- Gimbal and its calibration software

Module 2: Flying the mission

Bridge Module or Mapped to AAS/N6302 v 1.0

Terminal Outcomes:

- ***Mission Inspections***
- check for UIN/DAN of drone available on 'Digitalsky' (https://digitalsky.dgca.gov.in/) platform
- check for ETA (Equipment Type Approval)
- inspect registration markings or manufacture serial number for proper displaying in the drone
- check if the drone is 'No Permission - No Take-off (NPNT)' protocol compliant
- inspect the mission approval detail and purpose
- inspect if the mission detail is informed to local police station of the mission area
- inspect the risk management or mitigation plan and standard operating procedures (SOP)
- inspect registration markings or manufacture serial number for proper displaying in the drone
- fill the log required to be filled by the drone pilot
- ***Mission checks:***
- obtain weather MET briefing, ATC briefing and local police briefing
- obtain aerial photography clearance for operating drone, if necessary/applicable for the mission
- obtain emergency contact number of nearby police station, hospital, fire station and ATC
- ensure the mission area is not near to the airport or 'No drone' zone
- obtain the operational restrictions or regulations of mission area
- inspect control link transmitter, receiver, communication and navigation data link transceiver
- and antenna/s
- check on board strength of C2 (command & control) link
- check if the payload data transmission link is proper
- check if the Ground Control Station (GCS) flight planning software is updated with the latest firmware
- check if the displaying units (GCS, remote controller/transmitter) are having sufficient battery level

Mission plan:

- obtain the mission plan from the organisation/stakeholder
- check if the mission type is manual or autonomous
- check if the mission is BVLOS (Beyond Visual Line of Sight) and approval is made as per the regulations for drone operation
- check if the waypoint navigation, geo-fence of drone is proper
- check if the fail-safe feature such as RTH/RTL (Return-to-home/launch), detect and avoid is enabled
- check the main landing area or drone ports and alternate drone ports
- obtain NPNT permission (permission artefact (PA)) from the Digital Sky for the drone mission
- ***Mission operations:***
- establish proper C2 (command & control link)
- check the terrain for operating the drone for no obstacles
- fly the drone as per the mission plan
- maintain VLOS (Visual Line of Sight) of the drone i.e., ensure drone is in FPV (First Person View) during operation
- check if the BVLOS drone operation is in control and as per the permitted limit of operation
- check the battery level of drone from the Ground Control Station (GCS)
- Make sure the drone is in pilot control and not breaching the mission plan
- keep the operational area clear and safe for the mission (in case of anomaly, perform appropriate flight operations and inform concerned authorities

Duration: *60:00*	**Duration**: *70:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• check for UIN/DAN of drone available on 'Digitalsky' (https://digitalsky.dgca.gov.in/) platform • check for ETA (Equipment Type Approval) • check if the drone is 'No Permission - No Take-off (NPNT)' protocol compliant • fill the log required to be filled by the drone pilot • obtain weather MET briefing, ATC briefing and local police briefing • obtain aerial photography clearance for operating drone, if necessary/applicable for the mission • obtain emergency contact number of nearby police station, hospital, fire station and ATC • ensure the mission area is not near to the airport or 'No drone' zone • obtain the operational restrictions or regulations of mission area • obtain the mission plan from the organisation/stakeholder • obtain NPNT permission (permission artefact (PA)) from the Digital Sky for the drone mission	• inspect registration markings or manufacture serial number for proper displaying in the drone • inspect the mission approval detail and purpose • inspect if the mission detail is informed to local police station of the mission area • inspect the risk management or mitigation plan and standard operating procedures (SOP) • inspect registration markings or manufacture serial number for proper displaying in the drone • inspect control link transmitter, receiver, communication and navigation data link transceiver • and antenna/s • check on board strength of C2 (command & control) link • check if the payload data transmission link is proper • check if the Ground Control Station (GCS) flight planning software is updated with the latest firmware • check if the displaying units (GCS, remote controller/transmitter) are having sufficient battery level • check if the mission type is manual or autonomous • check if the mission is BVLOS (Beyond Visual Line of Sight) and approval is made as per the regulations for drone operation • check if the waypoint navigation, geo-fence of drone is proper • check if the fail-safe feature such as RTH/RTL (Return-to-home/launch), detect and avoid is enabled • check the main landing area or drone ports and alternate drone ports • establish proper C2 (command & control link) • check the terrain for operating the drone for no obstacles • fly the drone as per the mission plan • maintain VLOS (Visual Line of Sight) of the drone i.e., ensure drone is in FPV (First Person View) during operation • check if the BVLOS drone operation is in

	control and as per the permitted limit of operation • check the battery level of drone from the Ground Control Station (GCS) • Make sure the drone is in pilot control and not breaching the mission plan • keep the operational area clear and safe for the mission (in case of anomaly, perform appropriate flight operations and inform concerned authorities

Classroom Aids

White/Black, board, Markers, computer and projector, trainer's guide, student handbook,
Technical Documentation:

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- Training and Procedure Manual
- Standard Operating Procedures for all owned drones
- Assembly, Maintenance, Operation documentation
- Flight logs, Pilot logs, Battery logs, Maintenance logs
- Safety handling procedures of components

Tools, Equipment and Other Requirements

- Computer and projector,
- Nano category drone - 3, Micro category drone - 3, Small category drone - 3
- Multi - Rotor drone (Battery powered) or Multi - Rotor drone (Fuel / gas powered) and its components)
- Multi - Rotor Flight Simulator - 3
- Autonomous Flight Software - 6
- Radio Control Transmitter & Receiver - 6
- BLDC motors, ESCs, Propellers
- Flight Controller Board - 6
- ADS - B transponders – 6
- Flight Controller Board - 6
- LiPo batteries - 10
- Balance Charger - 5
- Telemetry, Buzzer, Safety Switch, Power Module, frames, arms, landing gears (static and retractable) GPS/GNSS NAVIC modules, On Screen Display (OSD), connecting wires, Binding/Jumper cables, USB cables - As required
- NPNT Module - 1
- Camera - 2
- Spraying system - 2
- Various payloads such as Thermal sensors, LiDAR sensors, multi- spectral sensors, servos, Gimbal
- Toolbox - Allen keys, Hex Wrenches, Soldering units, Screw Drivers, Wire Cutters, 3M tapes
- Gimbal and its calibration software

Module 3: Conducting post-flight operations, checks and inspections

Bridge Module or Mapped to AAS/N6303 v 1.0

Terminal Outcomes:

- **Pre-landing operations**
- check the landing area or drone port for any object/obstacle/personnel
- check the weather condition and wind speed for conducive landing
- Bring the drone steady for landing mode
- ensure if the drone landed safely and disarmed (deactivated)
- perform mission completion procedure and shutdown checks
- check if the drone is not powered
- check if the C2 link between drone, transmitter and Ground Control Station (GCS) is disconnected
- ensure proper packing of tools, remote control transmitter and RPAS equipment
- ***Post Landing inspections***
- inform authorities of having completed the mission
- record the battery voltage level and the flight time
- record the fuel quantity, in case of I.C engine powered drone
- download flight logs, sign and bundle it.
- upload the flight logs to the digital sky portal - permission request screen
- make an entry in the logbook
- transfer the data (imagery or video) recorded onboard the drone during flight to the Ground Control Station (GCS)
- ***Post Flight Checks:***
- visually inspect the drone for structural damage
- check if the battery is removed from drones and also from the remote-control transmitter in case of battery powered drones.
- verify if the camera/sensors are shut down
- inspect the battery for bulges, leaks, signs of heating or burnt odor for battery powered drones and leakages/abnormalities in case of I.C engine powered drones
- check for the damage in RPM (rotations per minute) sensor in case of I.C engine powered drone
- ensure the camera/gimbal or any other attached payload is removed safely
- inspect the propellers, motors, camera/s, payload and drone components for foreign debris ingestion, damage, burnt odor and signs of heating
- store the batteries, propellers, remote control transmitter, landing pads, micro-SD drone card, camera/s or payload and the ancillary equipment safely in their respective area
- verify if any components of drone are fallen anywhere or missed

Duration: *20:00*	**Duration**: *25:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• inform authorities of having completed the mission • record the battery voltage level and the flight time • record the fuel quantity, in case of I.C engine powered drone • make an entry in the logbook	• check the landing area or drone port for any object/obstacle/personnel • check the weather condition and wind speed for conducive landing • Bring the drone steady for landing mode • ensure if the drone landed safely and disarmed (deactivated) • perform mission completion procedure and shutdown checks • check if the drone is not powered

	• check if the C2 link between drone, transmitter and Ground Control Station (GCS) is disconnected • ensure proper packing of tools, remote control transmitter and RPAS equipment • download flight logs, sign and bundle it. • upload the flight logs to the digital sky portal - permission request screen • transfer the data (imagery or video) recorded onboard the drone during flight to the Ground Control Station (GCS) • visually inspect the drone for structural damage • check if the battery is removed from drones and also from the remote-control transmitter in case of battery powered drones. • verify if the camera/sensors are shut down • inspect the battery for bulges, leaks, signs of heating or burnt odor for battery powered drones and leakages/abnormalities in case of I.C engine powered drones • check for the damage in RPM (rotations per minute) sensor in case of I.C engine powered drone • ensure the camera/gimbal or any other attached payload is removed safely • inspect the propellers, motors, camera/s, payload and drone components for foreign debris ingestion, damage, burnt odor and signs of heating • store the batteries, propellers, remote control transmitter, landing pads, micro-SD drone card, camera/s or payload and the ancillary equipment safely in their respective area • verify if any components of drone are fallen anywhere or missed
Classroom Aids	
White/Black, board, Markers, computer and projector, trainer's guide, student handbook, Technical Documentation: • Multi-Rotor Drone RPAS Operator's Training Manual & Checklists, logbook (Produced by AASSC & ratified, endorsed by DGCA master trainer) is mandatory for each candidate. • Training and Procedure Manual • Standard Operating Procedures for all owned drones • Assembly, Maintenance, Operation documentation • Flight logs, Pilot logs, Battery logs, Maintenance log	

- Safety handling procedures of components

Tools, Equipment and Other Requirements

- Computer and projector,
- Nano category drone - 3, Micro category drone - 3, Small category drone - 3
- Multi - Rotor drone (Battery powered) or Multi - Rotor drone (Fuel / gas powered) and its components)
- Multi - Rotor Flight Simulator - 3
- Autonomous Flight Software - 6
- Radio Control Transmitter & Receiver - 6
- BLDC motors, ESCs, Propellers
- Flight Controller Board - 6
- ADS - B transponders – 6
- Flight Controller Board - 6
- LiPo batteries - 10
- Balance Charger - 5
- Telemetry, Buzzer, Safety Switch, Power Module, frames, arms, landing gears (static and retractable) GPS/GNSS NAVIC modules, On Screen Display (OSD), connecting wires, Binding/Jumper cables, USB cables - As required
- NPNT Module - 1
- Camera - 2
- Spraying system - 2
- Various payloads such as Thermal sensors, LiDAR sensors, multi- spectral sensors, servos, Gimbal
- Toolbox - Allen keys, Hex Wrenches, Soldering units, Screw Drivers, Wire Cutters, 3M tapes
- Gimbal and its calibration software

Module 4: Take actions to deal with incidents, accidents, and emergencies in the aviation security environment

Bridge Module or Mapped to AAS/N0501 v 1.0

Terminal Outcomes:

- comprehend the probability and severity of emergency situations
- take action to deal with emergencies, incidents or accidents in line with the organisation's procedures andregulatory guidelines
- Make sure the action planned does not increase the risk or threat to self and others
- consider the needs of others when taking action
- keep all the relevant and appropriate person(s) informed on action taken in line with organisation's procedures
- get help from the appropriate sources in situation(s) that are outside your own authority or ability
- document all actions taken to mitigate risks/emergencies in line with organisation procedures and regulatory guidelines

Duration: *10:00*	**Duration**: *15:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Understand the different types of emergencies, including security threats, accidents, and incidents. • Recognize the importance of risk assessment in determining the severity and response to emergencies. • Learn the key principles of effective emergency response, including quick decision-making and prioritization. • Understand the organizational procedures and regulatory guidelines for emergency management. • Comprehend the importance of clear communication with stakeholders during emergencies. • Learn about the role of personal safety measures and protective actions during incidents. • Understand the documentation process for incident reporting and post-incident analysis. • Recognize the importance of teamwork and coordination with emergency response teams.	• Perform a risk assessment to evaluate the probability and severity of an emergency situation. • Implement immediate safety measures to secure the area and protect individuals during an incident. • Take actions based on organizational procedures, such as evacuations, lockdowns, or containment strategies. • Communicate effectively with team members and emergency services during an incident. • Document the incident details, including actions taken, timeframes, and outcomes. • Demonstrate the ability to remain calm and make decisions under pressure. • Coordinate with external emergency services like police, fire brigades, and medical teams when needed. • Conduct post-incident reviews to identify lessons learned and improve emergency response procedures. • Engage in simulated emergency scenarios to practice rapid response and decision-making. • Ensure all equipment, emergency contacts, and communication tools are functioning correctly during drills

Classroom Aids
White/Black, board, Markers, computer and projector, trainer's guide, student handbook, Technical Documentation: • Multi-Rotor Drone RPAS Operator's Training Manual & Checklists, logbook (Produced by AASSC & ratified, endorsed by DGCA master trainer) is mandatory for each candidate. • Training and Procedure Manual • Standard Operating Procedures for all owned drones • Assembly, Maintenance, Operation documentation • Flight logs, Pilot logs, Battery logs, Maintenance logs • Safety handling procedures of components
Tools, Equipment and Other Requirements
• Computer and projector, • Nano category drone - 3, Micro category drone - 3, Small category drone - 3 • Multi - Rotor drone (Battery powered) or Multi - Rotor drone (Fuel / gas powered) and its components) • Multi - Rotor Flight Simulator - 3 • Autonomous Flight Software - 6 • Radio Control Transmitter & Receiver - 6 • BLDC motors, ESCs, Propellers • Flight Controller Board - 6 • ADS - B transponders – 6

Module 5: Understanding of Drone Policy and Related Regulatory Compliance

Bridge Module or Mapped to AAS/N6304

Terminal Outcomes:

- understand and interpret the **Drone Rules, 2021** and relevant DGCA regulations.
- Classify drones based on **weight and operational category** as per regulatory norms.
- Navigate and utilize the **Digital Sky Platform** for drone registration and flight permissions.
- Identify and operate within **designated airspace zones** (Green, Yellow, Red) with proper approvals.
- Apply for and manage **UIN (Unique Identification Number)** and other necessary licenses.
- Maintain and manage all required **regulatory documentation** including logbooks, insurance, and compliance records.
- Demonstrate awareness and compliance with **NPNT (No Permission No Take-off)** and **geo-fencing** requirements.
- Follow **RT (Radio Telephony)** communication procedures for interaction with ATC or during simulated scenarios.
- Handle **emergency procedures and incident reporting** as per DGCA compliance.
- Ensure all drone operations are conducted with **legal, ethical, and safety considerations** in mind.

Duration: *10:00*	**Duration**: *15:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the **Drone Rules, 2021** and associated DGCA circulars and guidelines. • Describe the **roles and responsibilities** of DGCA, MoCA, AAI, RPTOs, and Remote Pilots. • Identify the **types and classifications of drones** (Nano, Micro, Small, etc.) and their regulatory requirements. • Understand and explain **airspace zones** (Green, Yellow, Red) and required permissions. • Interpret **NOTAMs, AIPs, and CARs** related to drone operations. • Describe the process for **UIN registration**, **NPNT compliance**, and use of the **Digital Sky Platform**. • Understand **insurance, legal liabilities, and penalties** related to non-compliance. • Recognize the importance of **privacy, data security, and ethical conduct** in drone operations. • Understand the **requirements for RPTO authorization**, documentation, and audits.	• Demonstrate the process of **applying for drone registration and flight permission** using the Digital Sky Platform. • Identify the correct **airspace zone** for a proposed operation and follow the permission protocol. • Fill out and maintain **regulatory documents** like flight logs, UIN certificates, RPTO records, and insurance papers. • Conduct a **regulatory pre-flight compliance checklist** (zone check, permission, UIN, pilot license). • Simulate **emergency situations** and apply the correct regulatory response procedures. • Perform **radio telephony (RT) communication drills** using proper phraseology during flight operations. • Complete a **mock audit or compliance inspection** as per RPTO guidelines. • Simulate the process of **reporting an incident or safety violation** to the appropriate authorities.

Classroom Aids
White/Black, board, Markers, computer and projector, trainer's guide, student handbook, Technical Documentation: • **Projector/LED Display** – For presentations, DGCA video briefings, Digital Sky Platform walkthroughs, and live demonstrations. • **Laptop/Desktop with Internet** – For accessing DGCA websites, Drone Rules documents, and Digital Sky simulation exercises. • **Printed Copies of DGCA Documents** – 1. Drone Rules, 2021 (latest version) 2. Civil Aviation Requirements (CAR) 3. DTC circulars (DTC-01/2022, DTC-02/2022, DTC-03/2022) 4. RPTO Guidelines 5. Sample UIN, UAOP, and NPNT documents • **Whiteboard and Markers** – For flowcharts, rule explanations, and interactive discussions. • **Digital Sky Platform Demo Access** – Simulated environment or sandbox version for demonstration purposes. • **Airspace Maps/Zoning Charts** – Visual aids showing green, yellow, and red zones, including NFZs (No-Fly Zones). • **Case Study Handouts** – Real-world regulatory violations, compliance cases, and drone incident examples. • **Sample Forms and Templates** – UIN application forms, insurance templates, logbook entries, and audit checklists. • **RT (Radio Telephony) Audio Clips** – For training in correct ATC communication phraseology.
Tools, Equipment and Other Requirements
• Computer system (desktop or laptop) with stable internet connection • Printer and scanner for handling regulatory documentation • Projector or LED display for presentations and demonstrations • Whiteboard with markers for explanations and diagrams • Audio playback device or software for Radio Telephony (RT) training • Access to or simulation of the **Digital Sky Platform** • Sample drone model with UIN tag (for demonstration purposes) • Mock logbooks and regulatory documentation formats • Sample forms: UIN application, NPNT compliance checklist, insurance forms, etc. • Airspace classification charts and zoning maps (Green, Yellow, Red zones)

Module 6: Employability Skills

Mapped to DGT/VSQ/N0102 v1.0

Terminal Outcomes:

- Understand Employability skills along with communication skills and constitutional values
- Able to set a goal and create a career plan, along with knowledge financial and legal knowledge
- Being Apprenticeship & Job Ready

Duration: *30:00*	**Duration:** *30:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the Employability Skills required for jobs in various industries. • Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen • Describe the role of digital technology in today's life • Explain entrepreneurship and opportunities available • Understanding different types of customers and their needs • Explain skills required to become a 21st century professional • Understand to read and write basic English • Understand how to create a career plan • Explain effective communication skills • Understand basic financial and legal knowledge	• Create a career plan • Implement Self-awareness, time management, critical thinking, problem solving • Create sample word documents, excel sheets and presentations using basic features, utilize virtual collaboration tools to work effectively wherever necessary • Implement communication skills while handling different customers • Be Apprenticeship and job ready
Classroom Aids	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Duster.	
Tools, Equipment and Other Requirements	
Computer (PC) with the latest configurations, Computer Tables, Computer Chairs, UPS, Scanner cum Printer	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate (in any subject)	**Any Specialization**	**2-3**	**Drone Flight Operations**	**2-3**	**Drone Flight Operations**	

Trainer Certification	
Domain Certification	**Platform Certification**
"Drone Operator- Multi Rotor" mapped to QP: "AAS/Q6301" and Version 2.0. The minimum accepted score for domain certification will be 80%.	"Trainer" (VET and Skills) mapped to the Qualification Pack: "MEP/Q 2601" and Version 2.0. The minimum accepted percentage as per respective SSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate (in any subject)	**Any Specialization**	**2-3**	**Drone Flight Operations**	**2-3**	**Drone Flight Operations**	

Assessor Certification	
Domain Certification	**Platform Certification**
"Drone Operator- Multi Rotor" mapped to QP: "AAS/Q6301" and Version 2.0. The minimum accepted score for domain certification will be 80%.	"Assessor" (VET and Skills) mapped to the Qualification Pack: "MEP/Q2701". Minimum accepted percentage as per respective SSC guidelines is 80%.

Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the learner on the required competencies of the program.

All QP/NOS go through a rigorous review and approval process before they are finally ready to be utilized for skill training and assessment. The QP is assigned for assessment criteria to the various performance outcomes expected from the candidate. The assessment criteria is thoroughly examined and approved by independent industry experts, academic SMEs and regulatory bodies during the QP/NOS creation and approval.

Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. Under the Assessment Criteria in a QP/NOS, PCs are allotted against the following four methodologies:

a. Theory: A theory assessment is a written/digital question paper that aims at assessing the knowledge of the candidate. The assessment for the theory part will be based on knowledge bank of questions created by the SSC

b. Practical: A practical assessment assesses the practical application/hands-on ability demonstrated by the candidate

c. Viva: A viva voce is an oral questioning method where the assessor and candidate usually sit one-on-one. In addition to evaluating theoretical knowledge, this method also allows for assessment of soft skills, body language, etc

d. Project: A project could include a variety of methods to assess the candidate such as an evaluation of the candidate's portfolio, inclusion of formative assessment marks, evaluations from OJT logs, or any other initiatives undertaken

1. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
3. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion
4. The assessment is done through the SSC accredited Assessment Agency platform.
5. To pass the Qualification Pack, every trainee should score a minimum of 60% in aggregate
6. The marks are allocated PC wise, however, every NOS will carry a weightage in the total marks allocated to the specific QP

The SSC uses the devised 'Assessment Blueprint' which is a detailed outline of the plan of action of assessment and as a document. It aims to enable stakeholders implementing skill assessments, like Sector Skill Councils, Assessment Agencies and other assessment regulation bodies to define the complex relationship between performance outcomes/assessment criteria, theory and practical items, difficulty levels, time and marks allocated to each question, assessment methodology and the evaluation thereof. The blueprints are used to design the assessment to measure the mastery of the standard(s), improve consistency across test forms, set goals and monitoring matrices for test forms, and more.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question bank and question paper created by the Subject Matter Experts (SME) from SSC certified Assessment Agency and the other In-house team of SSC
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location
   - Centre photographs with signboards and scheme specific branding
   - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
   - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
   - Surprise visit to the assessment location
   - Random audit of the batch
   - Random audit of any candidate

6. Method for assessment documentation, archiving, and access
   - Hard copies of the documents are stored
   - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
   - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do **upon the completion of the training**.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training
GCS	Ground Control station
IC	Internal Combustion
GPS	Global Positioning System
ESC	Electronic speed control
RPM	Revolutions Per Minute
NPNT	No Permission – No Take-off
SOP	Standard operating procedure
ATC	Air Traffic Control
BVLOS	Beyond Visual Line of Sight
RTH/L	Return to Home / Launch
FPV	First Person View
DGCA	Directorate General of Civil Aviation
RPAS	Remotely Piloted Aircraft System
OSD	On Screen Display
RT	Radio Telephony
AIPs	Astronomical Image Processing System
RPTO	Remote Pilot Training Organization
MoCA	Ministry of Civil Aviation
AAI	Airports Authority of India