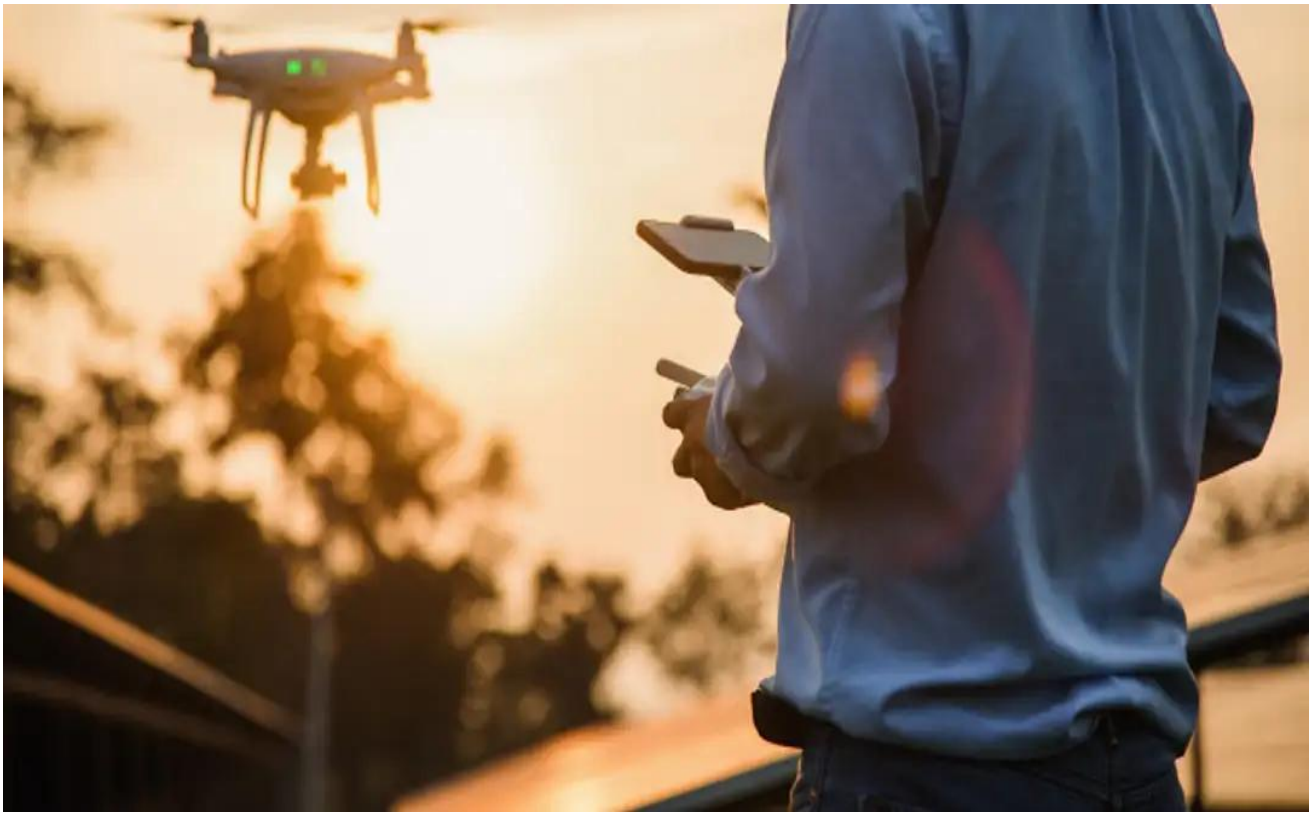

Model Curriculum

QP Name: Drone - Based Telecom Operations Dy. Manager

QP Code: TEL/Q6225

Version: 1.0

NSQF Level: 5

Telecom Sector Skill Council || 3rd Floor, Plot No. 126, Sector – 44
Gurgaon – 122003

Table of Contents

Training Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2523.0100
Minimum Educational Qualification and Experience	Completed 2nd year of 3-year/ 4-years UG** with no experience required Or Completed 2nd year of diploma* (after 12th) with no experience required Or 12th Grade pass with 2 years of relevant experience*** Or Previous relevant Qualification of NSQF Level 4.5 with 1.5 years of relevant experience*** Or Previous relevant Qualification of NSQF Level 4 with 3 years of relevant experience*** **Diploma in Electronics, Telecommunications, IT, Computer Science, Mechatronics, or related fields.* *** UG: Engineering/Technology (preferably in Telecom, Electronics, IT, Computer Science or UAV-related fields).* ****Relevant experience in Drone operations, Telecom deployment, UAV-based infrastructure inspection or other relevant domains.* *The relevant experience would include work, internship, or apprenticeship after completing relevant educational qualifications.*
Pre-Requisite License or Training	NA
Minimum Job Entry Age	NA
Last Reviewed On	24-12-2025
Next Review Date	24-12-2028

NSQC Approval Date	06-02-2026
QP Version	1.0
Model Curriculum Creation Date	24-12-2025
Model Curriculum Valid Up to Date	24-12-2028
Model Curriculum Version	1.0
Minimum Duration of the Course	540 Hours
Maximum Duration of the Course	540 Hours

Program Overview

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

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Develop mission plans for inspecting telecom towers, fiber lines, rooftop antennas, and 5G sites using drones, ensuring adherence to technical, safety, and regulatory standards.
- Manage drone-based delivery of telecom equipment, spare parts, and critical supplies to remote or urban tower locations, optimising efficiency and cost.
- Ensure seamless communication between drones, command centers, and cloud platforms by monitoring telecom connectivity, diagnosing signal disruptions, and mitigating interference.
- Analyse visual, thermal, LiDAR, or sensor-based drone data to generate insights on telecom asset conditions, infrastructure faults, and site readiness.
- Liaise with aviation authorities, ATC, and UTM systems to ensure all drone operations for telecom purposes are legally authorised and conducted safely.
- Manage the drone fleet's technical health, schedule preventive maintenance, and ensure drones are optimised for continuous telecom-related deployment.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
TEL/N6288: Plan and Coordinate Drone-Based Telecom Logistics Operations NOS Version-1.0 NSQF Level- 5	**30:00**	**40:00**	**50:00**	**-**	**120:00**
Module 1: Introduction to the role of Drone Logistic Coordinator	10:00	0:00	0:00	-	10:00
Module 2: Plan and Coordinate Drone-Based Telecom Logistics Operations	20:00	40:00	50:00	-	110:00
TEL/N6289: Manage Drone-Based Logistics Operations NOS Version-1.0 NSQF Level- 5	**20:00**	**30:00**	**40:00**	**-**	**90:00**

Module 3: Manage Drone-Based Logistics Operations	20:00	30:00	40:00	-	90:00
TEL/N6290: Integrate Telecom Networks and Systems for Real-Time Drone Operations NOS Version-1.0 NSQF Level- 5	**20:00**	**30:00**	**40:00**	**-**	**90:00**
Module 4: Integrate Telecom Networks and Systems for Real-Time Drone Operations	20:00	30:00	40:00	-	90:00
TEL/N6291: Manage Telecom Connectivity and Data Transmission During Drone Missions NOS Version-1.0 NSQF Level- 5	**30:00**	**40:00**	**50:00**	**-**	**120:00**
Module 5: Manage Telecom Connectivity and Data Transmission During Drone Missions	30:00	40:00	50:00	-	120:00
TEL/N6292: Implement safety and regulatory procedures in drone operations Coverage NOS Version-1.0 NSQF Level- 5	**10:00**	**20:00**	**30:00**	**-**	**60:00**
Module 6: Implement safety and regulatory procedures in drone logistics operations	10:00	20:00	30:00	-	60:00
DGT/VSQ/N0102: Employability Skills (60 Hours) NOS Version No. 1 NSQF Level- 5	**60:00**	**00:00**	**00:00**	**-**	**60:00**
Module 7: Employability Skills (60 hours)	60:00	00:00	00:00	-	60:00
Total Duration	**170:00**	**160:00**	**210:00**	**-**	**540:00**

Module Details

Module 1: Introduction to the Role of Drone - Based Telecom Operations Manager

Mapped to NOS: TEL/N6288, v1.0

Terminal Outcomes:

- Outline the spread of the telecom sector in India.
- Discuss the job role of Drone - Based Telecom Operations Manager.
- Explain the scope of work for Drone - Based Telecom Operations Manager.

Duration: 10:00	**Duration: 00:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the Telecom industry and its sub-sectors. • Discuss the role and responsibilities of a Drone - Based Telecom Operations Manager. • Identify various employment opportunities for a Drone - Based Telecom Operations Manager. • Discuss the organisational policies on workplace ethics, managing sites, quality standards, personnel management and public relations (PR). • Describe the process workflow in the organisation and the role of Drone - Based Telecom Operations Manager. • List the various daily, weekly, and monthly operations/activities that take place at the site under Drone - Based Telecom Operations Manager.	
Classroom Aids	
Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	
Tools, Equipment and Other Requirements	
NA	

Module 2: Plan and Coordinate Drone-Based Telecom Logistics Operations

Mapped to NOS: TEL/N6288, v1.0

Terminal Outcomes:

- Analyse telecom infrastructure requirements, environmental constraints, and connectivity parameters to determine the feasibility and scope of drone-based inspection or delivery operations.
- Plan drone flight paths, mission parameters, and payload configurations in alignment with telecom project specifications, regulatory guidelines, and operational constraints.
- Coordinate fleet readiness, pilot assignments, stakeholder communication, and compliance documentation to ensure safe, efficient, and regulation-compliant drone-based telecom logistics operations.

Duration: 20:00	**Duration: 40:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain telecom infrastructure types, components, and inspection requirements, including towers, rooftop sites, and 5G small cells. • Describe telecom-specific logistics demands, including critical components like OFC cables, RF units, routers, SIMs, and sensors. • Outline principles of drone flight, airspace classification, and DGCA/UTM regulatory compliance relevant to telecom delivery operations. • Describe standard operating procedures (SOPs) for test flights, including pre-flight checks, safety protocols, and controlled maneuver execution. • Interpret flight mission parameters such as altitude, flight speed, image overlap, payload constraints, and waypoint programming for various survey objectives. • Interpret telecom project specifications and client SLAs to assess the scope and urgency of inspections or equipment delivery. • Explain the fundamentals of telecom signal evaluation including LTE/5G connectivity, signal strength, and latency diagnostics using pre-flight tools.	• Plan and prepare drone flight missions by defining payload type, mission objectives, and flight parameters in line with DGCA/UTM guidelines. • Conduct controlled drone test flights to validate mission plans and identify any flight anomalies requiring adjustment or rectification. • Assess telecom infrastructure inspection requirements by interpreting project documents and historical maintenance data. • Use GIS tools to simulate drone flight paths considering altitude, waypoints, overlaps, and geographic constraints. • Use pre-flight assessment tools to evaluate telecom signal quality, including real-time telemetry checks, video streaming tests, and latency measurements. • Plan drone delivery or inspection missions based on payload type, weather forecasts, airspace zones, and telecom signal availability. • Demonstrate the process of submitting flight plans and obtaining approvals from DGCA/UTM/Digitalsky portals. • Validate the mission zone's signal strength, latency, and network coverage using pre-

• Identify environmental, topographical, and airspace constraints influencing mission feasibility and safety. • Explain the purpose and configuration of drone payloads such as visual, thermal, or LiDAR sensors in telecom inspections. • Describe the functional roles of LTE/5G connectivity, telemetry links, GPS modules, and real-time data transmission in drone missions. • List the procedures and protocols for risk assessment, flight plan documentation, regulatory permissions, and aviation coordination. • Explain maintenance, readiness, and airworthiness checks required before scheduling drone fleets. • Illustrate emergency preparedness protocols such as geofencing, return-to-home, and redundant planning for operational continuity.	flight testing tools. • Select appropriate drones and payloads for various telecom inspection or delivery scenarios based on feasibility parameters. • Check UAV readiness by inspecting battery health, firmware updates, and airworthiness status. • Allocate drone units, licensed pilots, and support teams according to operational schedules and compliance requirements. • Coordinate with clients, site engineers, and aviation authorities to ensure smooth execution of planned missions. • Develop risk assessment plans and emergency protocols for use in case of signal loss, technical failure, or crash. • Compose flight documentation, including SOPs, checklists, communication logs, mission readiness reports, and backup route plans. • Facilitate mission continuity by proposing alternative landing zones, rerouting strategies, and drone overrides in real-time.
Classroom Aids:	
Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	
Tools, Equipment and Other Requirements	
Drone flight planning software, GIS tools (Google Earth, DroneDeploy, etc.), Drone models (fixed-wing and rotary), Payload attachments, Drone maintenance checklist, PPE (googles, safety vests, gloves, helmets), First aid kit.	

Module 3: Manage Drone-Based Logistics Operations

Mapped to NOS: TEL/N6289, v1.0

Terminal Outcomes:

- Evaluate the feasibility of drone-based deliveries for telecom assets by analysing payload requirements, environmental constraints, and signal interference risks.
- Design optimised delivery routes and logistics schedules using AI-enabled planning tools, incorporating telecom-specific constraints like RF zones and SLAs.
- Analyse drone logistics performance data to identify service gaps, propose corrective actions, and enhance coordination with field engineers and telecom clients.

Duration: 20:00	**Duration: 30:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain key considerations in drone delivery of telecom assets such as RF kits, IoT modules, cables, and batteries. • Describe the criteria for matching drones with payload types, terrain, and telecom tower proximity. • Identify causes of GPS failure and RF interference in telecom-heavy environments. • Explain the principles of logistics route planning, including multi-point deliveries, hub-and-spoke models, and emergency mission routing. • Interpret KPIs and performance metrics related to drone-based telecom logistics. • List the regulatory and airspace constraints near telecom hubs and sensitive zones. • Describe procedures for field coordination and customer communication during delivery missions. • Discuss strategies for cost optimisation in drone logistics, such as predictive analytics, route bundling, and drone reassignment.	• Review a set of telecom delivery requests and assess feasibility based on weight, distance, and fragility. • Use payload charts and mission profiles to match appropriate drone models with telecom delivery needs. • Use digital maps or logistics software to design optimised delivery routes, avoiding RF blackout zones and restricted areas. • Conduct risk assessments and implement fail-safe mechanisms for high-value or remote telecom payloads. • Plan multi-point delivery schedules to telecom engineers based on simulated SLAs and urgency levels. • Enable real-time tracking for delivery operations and share ETAs with simulated field teams. • Track and compare planned versus actual drone delivery data and identify deviations and causes. • Generate heatmaps or fleet performance dashboards to highlight inefficiencies and delays. • Simulate delivery disruptions and propose customer communication strategies for proactive updates. • Develop cost-effective drone deployment strategies using delivery volume, geography, and demand patterns. • Evaluate and present cost-per-mission comparisons with proposals for energy efficiency and payload clustering.

Classroom Aids:
Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.
Tools, Equipment and Other Requirements
Payload attachments, GIS mapping tools (Google Earth, DroneDeploy, etc.), LTE/5G signal test kits, Smart controller with telemetry screen, Weather monitoring app, PPE (googles, safety vests, gloves, helmets), Drone maintenance checklist.

Module 4: Integrate Telecom Networks and Systems for Real-Time Drone Operations

Mapped to NOS: TEL/N6290, v1.0

Terminal Outcomes:

- Configure telecom modules and telemetry systems to enable real-time connectivity and reliable communication in drone operations.
- Calibrate GPS and telemetry settings to ensure accurate positioning, signal strength, and synchronisation with ground control systems.
- Evaluate telecom signal zones, communication redundancy, and cloud-based integrations to ensure uninterrupted command and control during drone missions.

Duration: 20:00	**Duration: 30:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the role of 4G/5G telecom modules in real-time drone communication. • Describe the process of configuring SIM/eSIM modules and network profiles. • Identify compatibility requirements between telecom modules and flight control systems. • Explain GPS and GNSS integration for accurate navigation and telemetry. • Illustrate calibration procedures for GNSS, GPS, and telemetry modules. • Define key signal quality indicators such as latency, jitter, and signal strength. • Discuss the importance of signal mapping and the risks of low-coverage telecom zones. • Outline the architecture of command, control (C2), and cloud systems in drone networks. • Elucidate redundancy planning through dual-SIM or fallback mechanisms. • Explain how to interpret data from diagnostic tools and validate signal health across flight paths.	• Demonstrate the procedure to install and configure 4G/5G SIM or eSIM modules in drones. • Show how to validate compatibility between telecom modules and drone control/telemetry systems. • Apply APN settings, signal switching logic, and fallback configurations for telecom modules. • Generate documentation for IMEI, SIM ID, and network profiles linked to each drone unit. • Construct integrated GPS and telemetry modules with autopilot systems. • Conduct calibration of GNSS settings based on operational zones and satellite availability. • Use diagnostic tools to verify signal strength, telemetry sync, and positional accuracy. • Perform signal mapping to assess 4G/5G coverage, latency, jitter, and dead zones. • Record and display telemetry and signal parameters during test or real-time flights. • Propose alternate routing or telecom network selection for low-coverage zones. • Develop secure command and control (C2) links between UAV and Ground Control

	Station. ● Configure and demonstrate real-time data streaming using cloud-based control platforms. ● Monitor the continuity and health of C2 systems during live flight operations. ● Facilitate dual SIM or fallback module setups to ensure communication redundancy. ● Generate flight connectivity and performance reports for post-mission analysis.
Classroom Aids	
Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	
Tools, Equipment and Other Requirements	
Telemetry module, 4G/5G SIM and eSIM cards, Ground Control Station (GCS), GPS modules, Signal mapping tools, Drone diagnostic software, Route optimisation software, Telecom network analyser, Spare drone parts and tools, PPE (googles, safety vests, gloves, and helmets).	

Module 5: Manage Telecom Connectivity and Data Transmission During Drone Missions

Mapped to NOS: TEL/N6291, v1.0

Terminal Outcomes:

- Evaluate telecom signal parameters, spectrum conditions, and terrain-related risks to ensure mission readiness for drone operations.
- Demonstrate steps for configuring LTE/5G modules, telemetry links, and communication protocols for real-time drone connectivity and redundancy.
- Analyze in-flight signal quality, telemetry performance, and data synchronization for uninterrupted UAV operations.
- Perform troubleshooting of the connectivity disruptions and implement fail-safe protocols to maintain secure and reliable data transmission to cloud systems.

Duration: 30:00	**Duration: 40:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the architecture and functioning of 4G/5G networks in the context of UAV operations. • Describe key telecom KPIs such as RSSI, RSRP, SINR, BER, latency, and jitter, and their impact on drone missions. • Interpret the use of RF propagation and spectrum analysis tools like Atoll, TEMS, SDR kits, and NetMonster. • Outline the causes and risks of EMI/RFI interference, network congestion, and signal loss during drone flights. • Illustrate redundancy and fail-safe strategies such as dual-link communication and fallback protocols. • Discuss command, control (C2), and telemetry protocols (UDP, TCP, MQTT, RTP) for drone communication. • Identify integration techniques for drone-to-cloud data pipelines using protocols like RTMP, MQTT, and HTTP POST. • Illuminate on the security and compliance requirements such as TLS, VPNs, firewalls, and data audit trails. • Describe methods to benchmark,	• Use RF propagation tools (e.g., Atoll or TEMS) to assess telecom coverage across mission routes. • Conduct latency, jitter, and bandwidth benchmarking using tools such as IPerf or Speedtest APIs. • Demonstrate pre-flight spectrum analysis using SDR kits to detect EMI or RFI sources. • Configure LTE/5G routers and SIM/eSIM modules with appropriate APN, QoS, and redundancy parameters. • Perform dual-link setup between RF and LTE/5G channels with automatic failover logic. • Monitor live signal KPIs (RSSI, SINR, BER) and telemetry packet flow through Ground Control dashboards. • Apply appropriate technique to track drone telemetry delays, video stream latency, and C2 synchronization in real-time operations. • Diagnose connectivity failures due to tower handoff, IP conflict, APN issues, or registration errors.

synchronize, and validate data transmission and latency across mission phases. • Summarize pre-flight, in-flight, and post-flight SOPs for telecom diagnostics, connectivity validation, and documentation. • Describe the data transmission architecture between drones and cloud/edge platforms, including telecom backhaul and telemetry integration techniques. • Summarize data security protocols and transmission reliability methods, such as TLS, VPN, MQTT, RTMP, and FTP, used for drone-to-cloud pipelines. • State the importance of documenting connectivity issues such as GPS drift, jitter spikes, and sync lags for operational reviews.	• Apply fallback commands such as Return-to-Launch (RTL), land, or loiter based on signal loss thresholds. • Employ appropriate techniques to trigger adaptive bitrate or buffering protocols in low-bandwidth scenarios for uninterrupted data flow. • Demonstrate the process of integrating drone telemetry and sensor payloads with edge/cloud systems using secure transmission protocols. • Show how to verify timestamp accuracy of cloud-ingested data using NTP and synchronization tools. • Demonstrate retrieval and processing of onboard sensor data (e.g., LiDAR, images, video) and apply correction filters for geospatial accuracy. • Use secure transmission protocols and data transfer methods (e.g., TLS, MQTT, HTTP POST) to integrate drone data with edge/cloud platforms. • Generate visual analytics and reports from drone mission data, using relevant GIS/image processing tools and ensuring time-sync validation. • Role-play to propose corrective actions using post-mission connectivity logs and anomaly reports. • Role-play to communicate real-time alerts and telemetry deviations to operations teams via GCS or mission software.

Classroom Aids

Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.

Tools, Equipment and Other Requirements

RF propagation software (e.g., Atoll, TEMS), LTE/5G routers, Modems, 4G/5G SIM and eSIM cards, SDR kits, RF analyzers, Spectrum analyzers, IPerf tools, NetMonster app, GPS modules, Ground Control Station (GCS), Cloud integration platforms (e.g., AWS IoT, Azure IoT Hub), Telemetry module, Firewalls/VPN configuration tools, etc.

Module 6: Implement safety and regulatory procedures in drone operations

Mapped to NOS: TEL/N6292, v1.0

Terminal Outcomes:

- Valuate potential safety risks in drone operations and formulate appropriate mitigation strategies in accordance with organisational and environmental conditions.
- Implement standard operating procedures to ensure regulatory compliance and monitor adherence to national drone guidelines, safety protocols, and airspace regulations.
- Demonstrate the ability to record, report, and respond to safety incidents and near-misses using organisational tools and reporting frameworks.

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the key safety risks involved in drone operations, including risks during take-off, landing, and payload handling. • Identify common weather-related and environmental hazards affecting drone flights. • Describe organisational safety protocols and standard operating procedures for drone deployment. • Outline personal protective equipment (PPE) and operational safety standards for drone operators and support staff. • Discuss procedures for documenting and reporting safety checks, incidents, near misses, and corrective actions. • Explain the importance of reviewing incident reports to suggest preventive strategies. • Describe the coordination mechanisms for emergency response planning in drone operations. • Explain national and local airspace regulations and drone operation guidelines. • Discuss about the certification, licensing, and airworthiness requirements for drones. • Describe data protection, privacy, and	• Monitor and interpret weather data and environmental alerts relevant to drone operations. • Demonstrate adherence to safety protocols during drone take-off, flight, landing, and payload handling. • Conduct safety checks and log inspection results in organisational record systems. • Role-play to report safety breaches, incidents, and near misses using designated organisational procedures. • Propose preventive and corrective measures based on past incident records. • Coordinate with emergency response teams and facilitate simulations or drills based on organisational plans. • Use digital tools and dashboards to track flight paths, delivery logs, and safety parameters. • Support compliance audits by maintaining updated documentation and responding to inspection requirements. • Update internal teams through briefings or reports on new regulations and policy changes. • Promote safety awareness and regulatory adherence by facilitating

security compliance standards in drone operations. • Explain protocols for internal and external safety and compliance audits. • Identify the role of digital tools in monitoring, logging, and analysing safety and regulatory data. • Explain methods to promote a culture of safety and compliance through training and communication.	regular training and workshops.

Classroom Aids
Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen
Tools, Equipment and Other Requirements
Drone operation manuals, PPE (googles, safety vests, gloves, and helmets), First Aid Kit, Emergency response plan charts, Sample incident report forms.

Module 7: DGT/VSQ/N0102: Employability Skills (60 Hours)

Mandatory Duration: 60:00			
Location: On-Site			
S.No.	**Module Name**	**Key Learning Outcomes**	**Duration (hours)**
1.	Introduction to Employability Skills	• Discuss the Employability Skills required for jobs in various industries • List different learning and employability related GOI and private portals and their usage	1.5 Hours
2.	Constitutional values - Citizenship	• 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 • Show how to practice different environmentally sustainable practices.	1.5 Hours
3.	Becoming a Professional in the 21st Century	• Discuss importance of relevant 21st century skills. • Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life. • Describe the benefits of continuous learning.	2.5 Hours
4.	Basic English Skills	• Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic English • Write a short note/paragraph / letter/e -mail using basic English	10 Hours
5.	Career Development & Goal Setting	• Create a career development plan with well-defined short- and long-term goals	2 Hours
6.	Communication Skills	• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. • Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team	5 Hours
7.	Diversity & Inclusion	• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD	2.5 Hours

		• Discuss the significance of escalating sexual harassment issues as per POSH act.	
8.	Basic English Skills	• Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic English • Write a short note/paragraph / letter/e -mail using basic English	10 Hours
9.	Career Development & Goal Setting	• Create a career development plan with well-defined short- and long-term goals	2 Hours
10.	Communication Skills	• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. • Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team	5 Hours
11.	Diversity & Inclusion	• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD • Discuss the significance of escalating sexual harassment issues as per POSH act.	2.5 Hours
12.	Financial and Legal Literacy	• Outline the importance of selecting the right financial institution, product, and service • Demonstrate how to carry out offline and online financial transactions, safely and securely • List the common components of salary and compute income, expenditure, taxes, investments etc. • Discuss the legal rights, laws, and aids	5 Hours
13.	Essential Digital Skills	• Describe the role of digital technology in today's life • Demonstrate how to operate digital devices and use the associated applications and features, safely and securely • Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely • Create sample word documents, excel sheets and presentations using basic features • Utilise virtual collaboration tools to work effectively	10 Hours
14.	Entrepreneurship	• Explain the types of entrepreneurship and enterprises • Discuss how to identify opportunities for potential business, sources of funding and	7 Hours

		associated financial and legal risks with its mitigation plan • Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement • Create a sample business plan, for the selected business opportunity	
15.	Customer Service	• Describe the significance of analysing different types and needs of customers • Explain the significance of identifying customer needs and responding to them in a professional manner. • Discuss the significance of maintaining hygiene and dressing appropriately	5 Hours
16.	Getting Ready for apprenticeship & Jobs	• Create a professional Curriculum Vitae (CV) • Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively • Discuss the significance of maintaining hygiene and confidence during an interview • Perform a mock interview • List the steps for searching and registering for apprenticeship opportunities	8 Hours

LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS		
Sl No.	**Name of the Equipment**	**Quantity**
1.	Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below)	As required
2.	UPS	As required
3.	Scanner cum Printer	As required
4.	Computer Tables	As required
5.	Computer Chairs	As required
6.	LCD Projector	As required
7.	White Board 1200mm x 900mm	As required
Note: Above Tools &Equipment not required, if Computer LAB is available in the institute.		

Module 8: On-the-Job Training

Mapped to QP: TEL/Nxxxx, v1.0

Mandatory Duration: 200:00	**Recommended Duration: 00:00**
Location: On-Site	

Terminal Outcomes

- Demonstrate the process of receiving and verifying drone delivery requests based on priority, payload, and destination.
- Plan and schedule drone deliveries using fleet management and route optimisation tools.
- Conduct pre-dispatch checks including drone battery level, payload compatibility, and environmental readiness.
- Use live weather and airspace data to adjust delivery schedules in real-time.
- Collaborate with warehouse teams to synchronise drone dispatch with inventory readiness.
- Track real-time drone locations and delivery status using GPS and geo-tracking platforms.
- Generate performance dashboards using drone KPIs like average delivery time and cost per kilometre.
- Analyse root causes of failed or delayed deliveries using drone logs, route data, and operator reports.
- Forecast inventory needs and coordinate restocking based on drone delivery patterns and demand trends.
- Validate physical tagging (RFID/barcode) and digital documentation of packages before dispatch.
- Monitor drone payload characteristics to ensure compliance with loading guidelines and flight safety.
- Compile inventory reconciliation reports to track dispatch versus drone delivery records.
- Evaluate cost-intensive delivery routes and recommend strategies to reduce energy and maintenance expenses.
- Collect and analyse drone operational data such as flight duration, maintenance records, and hover time.
- Use data visualisation tools to create charts, summaries, and delivery performance reports.
- Respond to customer queries with accurate delivery updates using logistics tracking systems.
- Investigate customer complaints by retrieving and analysing delivery data, photos, and operator notes.
- Record and report safety incidents, near-misses, and compliance breaches using organisational templates.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialisation**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialisation***	***Years***	***Specialisation***	
BE/B. Tech	Any Field	2	Drone operations, Telecom infrastructure deployment, UAV-based infrastructure inspection or other relevant domains.	-	-	Eligible for ToT program
ME/M. Tech	Any Field	1	Drone operations, Telecom infrastructure deployment, UAV-based infrastructure inspection or other relevant domains.	-	-	Eligible for ToT program

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Drone-Based Telecom Operation Dy. Manager**", "TEL/Q6225, v1.0", Minimum accepted score is 80%	Certified for Job Role: **"Trainer (VET and Skills)"**, mapped to Qualification Pack: **"MEP/Q2601, v3.0"**, Minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialisation**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialisation***	***Years***	***Specialisation***	
BE/B. Tech	Any Field	2	Drone operations, Telecom infrastructure deployment, UAV-based infrastructure inspection or other relevant domains.	-	-	Eligible for ToA program
ME/M. Tech	Any Field	1	Drone operations, Telecom infrastructure deployment, UAV-based infrastructure inspection or other relevant domains.	-	-	Eligible for ToA program

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Drone-Based Telecom Operation Dy. Manager**", "TEL/Q6225, v1.0", Minimum accepted score is 80%	Certified for Job Role: "**Assessor (VET and Skills)",** mapped to Qualification Pack: **"MEP/Q2701, v3.0",** Minimum accepted score as per MEPSC guidelines is 80%.

Trainer Requirements (Employability Skills 60 hours)

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	**Specialization**	**Years**	**Specialization**	
Graduate/CITS	Any discipline			2	Teaching experience	Prospective ES trainer should: • have good communication skills • be well versed in English • have digital skills • have attention to detail • be adaptable • have willingness to learn
Current ITI trainers	Employability Skills Training (3 days full-time course done between 2019-2022)					
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)					
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)					

Assessor Certification	
Domain Certification	**Platform Certification**
Certified in 90-hour Employability NOS (2022), with a minimum score of 80% OR Certified in 120-hour Employability NOS (2022), with a minimum score of 80%	NA

Assessment Strategy

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.
- The 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 papers created by the Subject Matter Experts (SME).
- Question papers created by the SME verified by the other subject Matter Experts.
- Questions are mapped with NOS and PC.
- Question papers are prepared considering that level 1 to 3 are for the unskilled & semi- skilled individuals, and level 4 and above are for the skilled, supervisor & higher management.
- An assessor must be ToA certified & the trainer must be ToT Certified.
- The 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.
- Center 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:

- A surprise visit to the assessment location.
- A 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 Drive.

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	A key learning outcome is a 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	The 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

Term	Description
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
QP	Qualifications Pack
PwD	People with Disability
PPE	Personal Protective Equipment