Qualification Pack

AI & ML - Jr. Telecom Data Analyst

QP Code: TEL/Q6602

Version: 3.0

NSQF Level: 4

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Contents

Qualification Pack

TEL/Q6602: AI & ML - Jr. Telecom Data Analyst

Brief Job Description

An AI & ML Jr. Telecom Data Analyst supports the implementation of artificial intelligence solutions within telecom operations by collecting, organizing, and analyzing large-scale telecom datasets. The individual in this role assist in developing insights using AI/ML models to improve network performance, customer experience, and operational efficiency.

Personal Attributes

The individual in this role should possess strong attention to detail, a data-driven mindset, and the ability to handle large volumes of telecom data with accuracy. The individual should be technically inclined, capable of following instructions, and comfortable working with digital tools and basic scripting. They should demonstrate a responsible attitude, be ethical in handling sensitive data, and show eagerness to learn. The individual should also be able to work collaboratively within a team environment and communicate findings or issues effectively.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N6607: Collect Data using AI Tools
2. TEL/N6608: Analyze Data using AI Tools and Utilize data in Business Productivity
3. TEL/N6609: Support Implementation of AI Solutions in Telecom Operations
4. TEL/N9101: Organise Work and Resources as per Health and Safety Standards
5. TEL/N9102: Interact Effectively with Team Members and Customers
6. DGT/VSQ/N0101: Employability Skills (30 Hours)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Data Handling – Network Managed Services
Country	India

Qualification Pack

NSQF Level	4
Credits	15
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2523.6602
Minimum Educational Qualification & Experience	12th grade Pass OR Completed 2nd year of the 3-year diploma after 10 OR 11th grade pass with 1 Year of experience Relevant Experience OR Previous relevant Qualification of NSQF Level (3.5) with 1.5 years of experience Relevant Experience OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience Relevant Experience
Minimum Level of Education for Training in School	12th Class
Pre-Requisite License or Training	Basic knowledge of Python and Data Structures
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	30/06/2028
NSQC Approval Date	19/08/2025
Version	3.0
Reference code on NQR	QG-04-TL-00467-2025-V2-TSSC
NQR Version	2

TEL/N6607: Collect Data using AI Tools

Description

This OS focuses on the skills and knowledge required to identify, extract, clean, and prepare datasets using AI tools and technologies for downstream analysis in telecom applications.

Scope

The scope covers the following :

- Define scope and identify data requirements
- Collect data using AI tools and technologies
- Clean, transform, and prepare data for analysis

Elements and Performance Criteria

Define scope and identify data requirements

To be competent, the user/individual on the job must be able to:

PC1. interpret telecom business problems to define the scope and objectives for data collection.

PC2. identify relevant telecom data types and formats (e.g., CDRs, logs, CRM data) aligned with AI/ML use cases.

PC3. determine the type, structure, and source of data required to address the defined scope.

Collect data using AI tools and technologies

To be competent, the user/individual on the job must be able to:

PC4. load datasets from various sources (e.g., CSV, Excel, APIs, real-time feeds) using AI-enabled tools or scripts.

PC5. access and extract fields from telecom datasets using Python libraries such as Pandas and NumPy.

PC6. collect data from cloud servers, telecom APIs, and structured databases using automated AI tools.

PC7. extract information from datasets in an intuitive format using Natural Language Query (NLQ) tools.

PC8. store, organise, and share collected telecom data using cloud platforms (e.g., Google Drive, AWS, Azure).

Clean, transform, and prepare data for analysis

To be competent, the user/individual on the job must be able to:

PC9. identify and correct missing values, duplicates, and corrupted records using appropriate AI tools or scripts.

PC10. normalise and format datasets through encoding, renaming, or transforming data columns.

PC11. remove outliers or anomalies in network data using statistical or AI-based techniques.

PC12. write Python scripts to automate basic data cleaning and transformation tasks.

PC13. apply Natural Language Generation (NLG) and AI-based methods to categorise or summarise data.

Validate and structure data for ML applications

To be competent, the user/individual on the job must be able to:

PC14. select appropriate attributes or features from the dataset relevant to the defined ML objective.

PC15. convert files (e.g., JSON to CSV) to ensure compatibility with downstream ML workflows.

PC16. validate the completeness and usability of the final dataset using AI-based validation tools.

PC17. ensure telecom data handling complies with regulatory and ethical guidelines (e.g., TRAI).

PC18. create structured, analysis-ready datasets for applications.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. types of telecom data, including CDRs, usage logs, and CRM records, and their relevance to AI use cases.

KU2. types of telecom data, including CDRs, usage logs, and CRM records, and their relevance to AI use cases.

KU3. methods of collecting data using APIs, databases, cloud repositories, and real-time data feeds.

KU4. features of AI-enabled tools used for data access, cleaning, and transformation.

KU5. use of Python libraries such as Pandas and NumPy for data manipulation.

KU6. techniques for data normalisation, encoding, renaming, and formatting.

KU7. identification and correction of data quality issues such as missing values, duplication, and outliers.

KU8. role of Natural Language Query (NLQ) and NLG tools in simplifying data access and insight generation.

KU9. importance of data validation before feeding into ML models.

KU10. selection of relevant data features aligned with business problem statements.

KU11. applications of structured telecom datasets in ML-driven solutions (e.g., churn prediction).

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate effectively with technical and non-technical stakeholders to understand data needs.

GS2. use digital tools and scripts confidently for performing data collection and cleaning tasks.

GS3. organise work to meet deadlines for data preparation and delivery.

GS4. apply critical thinking to identify and resolve anomalies in collected data.

GS5. work collaboratively with team members and cross-functional units for data preparation.

GS6. interpret AI-driven insights and visualisations to guide decisions.

GS7. manage time efficiently when handling large volumes of data.

GS8. uphold confidentiality and data integrity while managing sensitive telecom datasets.

GS9. adapt to emerging AI tools and methods for improved data handling and automation.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Define scope and identify data requirements	**4**	**8**	**-**	**1**
PC1. interpret telecom business problems to define the scope and objectives for data collection.	1	3	-	-
PC2. identify relevant telecom data types and formats (e.g., CDRs, logs, CRM data) aligned with AI/ML use cases.	1	2	-	-
PC3. determine the type, structure, and source of data required to address the defined scope.	2	3	-	1
Collect data using AI tools and technologies	**9**	**20**	**-**	**3**
PC4. load datasets from various sources (e.g., CSV, Excel, APIs, real-time feeds) using AI-enabled tools or scripts.	2	4	-	-
PC5. access and extract fields from telecom datasets using Python libraries such as Pandas and NumPy.	2	4	-	1
PC6. collect data from cloud servers, telecom APIs, and structured databases using automated AI tools.	2	4	-	-
PC7. extract information from datasets in an intuitive format using Natural Language Query (NLQ) tools.	1	4	-	1
PC8. store, organise, and share collected telecom data using cloud platforms (e.g., Google Drive, AWS, Azure).	2	4	-	1
Clean, transform, and prepare data for analysis	**9**	**18**	**-**	**4**
PC9. identify and correct missing values, duplicates, and corrupted records using appropriate AI tools or scripts.	1	3	-	1
PC10. normalise and format datasets through encoding, renaming, or transforming data columns.	2	4	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. remove outliers or anomalies in network data using statistical or AI-based techniques.	2	3	-	-
PC12. write Python scripts to automate basic data cleaning and transformation tasks.	2	4	-	1
PC13. apply Natural Language Generation (NLG) and AI-based methods to categorise or summarise data.	2	4	-	1
Validate and structure data for ML applications	**8**	**14**	**-**	**2**
PC14. select appropriate attributes or features from the dataset relevant to the defined ML objective.	2	3	-	-
PC15. convert files (e.g., JSON to CSV) to ensure compatibility with downstream ML workflows.	2	3	-	1
PC16. validate the completeness and usability of the final dataset using AI-based validation tools.	2	3	-	-
PC17. ensure telecom data handling complies with regulatory and ethical guidelines (e.g., TRAI).	1	2	-	-
PC18. create structured, analysis-ready datasets for applications.	1	3	-	1
NOS Total	**30**	**60**	**-**	**10**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6607
NOS Name	Collect Data using AI Tools
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Data Handling – Network Managed Services
NSQF Level	4
Credits	4
Version	3.0
Last Reviewed Date	19/08/2025
Next Review Date	30/06/2028
NSQC Clearance Date	19/08/2025

TEL/N6608: Analyze Data using AI Tools and Utilize data in Business Productivity

Description

This OS covers the competencies required to analyse telecom data using AI-based tools to extract patterns, forecast trends, and generate insights for business improvement.

Scope

The scope covers the following :

- Prepare and analyse telecom data using AI tools
- Generate and present business insights using visualisation tools
- Create and automate business intelligence outputs
- Apply AI analytics for productivity and decision support

Elements and Performance Criteria

Prepare and analyse telecom data using AI tools

To be competent, the user/individual on the job must be able to:

PC1. identify trends and anomalies in telecom datasets using statistical or AI tools.

PC2. classify telecom data using machine learning algorithms like decision trees and logistic regression.

PC3. perform clustering using K-means or similar techniques to segment customer or usage data.

PC4. analyse telecom data using AI-based tools to generate meaningful insights for business planning.

PC5. evaluate datasets using model metrics such as accuracy, precision, recall, and F1-score.

Generate and present business insights using visualisation tools

To be competent, the user/individual on the job must be able to:

PC6. create dashboards to represent telecom KPIs such as dropped calls, ARPU, and customer churn.

PC7. use visualisation tools (e.g., Excel, Tableau) to plot data and highlight patterns for stakeholders.

PC8. apply NLQ and NLG tools to extract and narrate data-driven insights in user-friendly language.

PC9. interpret AI-generated patterns to support marketing, customer service, or operational decisions.

PC10. perform predictive analytics based on past data to anticipate network behaviour or customer actions.

Create and automate business intelligence outputs

To be competent, the user/individual on the job must be able to:

PC11. automate the generation of business reports using augmented analytics tools.

PC12. design and structure business intelligence reports using storytelling techniques and clear visuals.

PC13. use AI-assisted platforms to perform trend analysis across various geographic or service parameters.

PC14. conduct full-cycle analysis from data extraction through insights to business recommendations.

PC15. classify and structure data for business intelligence in a format suitable for downstream use.

Apply AI analytics for productivity and decision support

To be competent, the user/individual on the job must be able to:

PC16. identify opportunities for improving telecom operations using AI-based insights.

PC17. collaborate with stakeholders to validate insights and align them with business needs.

PC18. monitor and improve ongoing marketing, service, or operational programs using AI analytics.

PC19. apply business logic to interpret findings and support data-driven decisions.

PC20. present strategic recommendations based on AI-enabled telecom analytics.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. concepts of supervised and unsupervised machine learning.

KU2. use of key ML algorithms (e.g., logistic regression, decision trees, K-means) for classification and clustering.

KU3. predictive analytics methods and their role in forecasting telecom trends and behaviours.

KU4. interpretation of model evaluation metrics like accuracy, recall, and F1-score.

KU5. capabilities of NLQ, NLG, and augmented analytics tools for simplifying data analysis.

KU6. visualisation techniques using tools like Tableau, Excel, or Power BI.

KU7. business KPIs in telecom such as ARPU, churn rate, and dropped calls.

KU8. data storytelling techniques to convert technical findings into business-friendly reports.

KU9. data preparation processes, including commissioning and structuring for analysis.

KU10. techniques for analysing trends across service lines or geographies.

KU11. process of aligning data insights with strategic business decisions.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate insights effectively to both technical and non-technical audiences.

GS2. apply logical reasoning and analysis to interpret trends and outcomes.

GS3. use digital dashboards and AI tools for automated analysis and visualisation.

GS4. organise workload and meet deadlines for reporting and insights delivery.

GS5. make data-informed decisions with minimal supervision.

GS6. adapt to fast-evolving tools and technologies in the AI analytics domain.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare and analyse telecom data using AI tools	**8**	**13**	**-**	**3**
PC1. identify trends and anomalies in telecom datasets using statistical or AI tools.	1	2	-	1
PC2. classify telecom data using machine learning algorithms like decision trees and logistic regression.	2	2	-	-
PC3. perform clustering using K-means or similar techniques to segment customer or usage data.	2	3	-	1
PC4. analyse telecom data using AI-based tools to generate meaningful insights for business planning.	1	3	-	-
PC5. evaluate datasets using model metrics such as accuracy, precision, recall, and F1-score.	2	3	-	1
Generate and present business insights using visualisation tools	**7**	**17**	**-**	**2**
PC6. create dashboards to represent telecom KPIs such as dropped calls, ARPU, and customer churn.	1	3	-	-
PC7. use visualisation tools (e.g., Excel, Tableau) to plot data and highlight patterns for stakeholders.	2	3	-	1
PC8. apply NLQ and NLG tools to extract and narrate data-driven insights in user-friendly language.	2	4	-	-
PC9. interpret AI-generated patterns to support marketing, customer service, or operational decisions.	1	4	-	-
PC10. perform predictive analytics based on past data to anticipate network behaviour or customer actions.	1	3	-	1
Create and automate business intelligence outputs	**8**	**16**	**-**	**3**
PC11. automate the generation of business reports using augmented analytics tools.	1	3	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. design and structure business intelligence reports using storytelling techniques and clear visuals.	2	3	-	-
PC13. use AI-assisted platforms to perform trend analysis across various geographic or service parameters.	1	4	-	-
PC14. conduct full-cycle analysis from data extraction through insights to business recommendations.	2	3	-	1
PC15. classify and structure data for business intelligence in a format suitable for downstream use.	2	3	-	1
Apply AI analytics for productivity and decision support	**7**	**14**	**-**	**2**
PC16. identify opportunities for improving telecom operations using AI-based insights.	2	2	-	-
PC17. collaborate with stakeholders to validate insights and align them with business needs.	1	3	-	1
PC18. monitor and improve ongoing marketing, service, or operational programs using AI analytics.	1	3	-	-
PC19. apply business logic to interpret findings and support data-driven decisions.	1	3	-	-
PC20. present strategic recommendations based on AI-enabled telecom analytics.	2	3	-	1
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6608
NOS Name	Analyze Data using AI Tools and Utilize data in Business Productivity
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Data Handling – Network Managed Services
NSQF Level	4
Credits	4
Version	3.0
Last Reviewed Date	19/08/2025
Next Review Date	30/06/2028
NSQC Clearance Date	19/08/2025

TEL/N6609: Support Implementation of AI Solutions in Telecom Operations

Description

This OS involves assisting in the deployment and monitoring of AI/ML-based models and tools in live telecom environments.

Scope

The scope covers the following :

- Assist in deployment of AI models in telecom systems
- Monitor model outputs and performance metrics
- Support troubleshooting, versioning, and retraining coordination
- Maintain model logs and documentation

Elements and Performance Criteria

Assist in deployment of AI models in telecom systems

To be competent, the user/individual on the job must be able to:

PC1. configure environment variables, containerize models using Docker, and deploy them in staging or live telecom systems under supervision.

PC2. assist in linking ML model endpoints (e.g., REST APIs or ONNX runtime) with telecom OSS/BSS systems or data pipelines.

PC3. verify configuration files (e.g., YAML/JSON) to ensure data sources, thresholds, and runtime parameters are correctly defined.

PC4. perform dry-run deployments to validate functional compatibility and data flow integrity.

PC5. identify missing dependencies or version mismatches in model libraries and escalate accordingly.

PC6. coordinate with DevOps or MLOps teams to ensure CI/CD pipelines are functioning correctly during deployment stages.

Monitor model inference, logging, and system metrics

To be competent, the user/individual on the job must be able to:

PC7. monitor inference results and cross-check against pre-validated benchmarks (e.g., ROC AUC, F1-score) for telecom datasets.

PC8. log prediction errors, out-of-distribution data anomalies, and alert flags triggered by model predictions.

PC9. use model monitoring tools (e.g., Grafana, Prometheus, or custom dashboards) to track inference latency, resource utilization, and drop rates.

PC10. support telemetry captures of live traffic, usage patterns, or network signals feeding into ML models.

PC11. create anomaly reports when model confidence scores fall below predefined thresholds or show drift over time.

PC12. extract system logs and model audit trails during failure events for root-cause documentation.

Support troubleshooting, versioning, and retraining coordination

To be competent, the user/individual on the job must be able to:

PC13. identify misalignment between model predictions and actual network performance indicators (e.g., call drop rate, jitter, throughput).

PC14. assist in tuning model hyperparameters or changing inference thresholds based on recent data under analyst guidance.

PC15. track model versions using Git, DVC, or model registries and support rollbacks in case of functional degradation.

PC16. prepare data summaries for retraining triggers using tools like Pandas or SQL, based on model performance decay trends.

Maintain model logs and documentation

To be competent, the user/individual on the job must be able to:

PC17. maintain structured logs of model updates, test results, bug reports, and performance evaluations.

PC18. draft update notes and version release summaries for the operational team during model pushes or rollbacks.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. structure and application of AI/ML models (classification, regression, clustering) in telecom network optimization.

KU2. data types common in telecom (e.g., CDR, QoS logs, latency data) and their formats (CSV, Parquet, SQL tables, etc.).

KU3. basics of RESTful APIs, endpoint configuration, and JSON communication schemas in ML model integration.

KU4. deployment tools such as Docker, Kubernetes, and MLFlow for containerized model deployment.

KU5. principles of CI/CD and MLOps pipelines and their relevance in model lifecycle management.

KU6. common libraries and platforms used (e.g., Scikit-learn, TensorFlow Lite, PyTorch, ONNX) in model deployment.

KU7. key performance metrics used to evaluate model reliability (precision, recall, F1, latency, throughput).

KU8. techniques to monitor data drift, model decay, and threshold tuning.

KU9. importance of version control in ML lifecycle management and tools like Git, GitLab, or DVC.

KU10. logging protocols for ML operations including inference logs, system logs, and audit trails.

KU11. data privacy and security guidelines relevant to AI applications in telecom networks.

KU12. role of feedback loops in model retraining and operational effectiveness.

KU13. organisation's escalation protocols and standard documentation practices

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate technical findings effectively with data scientists, telecom engineers, and project leads.

GS2. use logic and attention to detail while comparing model output with network KPIs.

GS3. collaborate in a multi-functional team environment, especially with data engineers, telecom specialists, and AI developers.

GS4. apply logical reasoning and pattern recognition to validate model predictions against expected telecom network behaviors.

GS5. identify simple problems in model execution or data flow and escalate them to the appropriate technical team.

GS6. maintain composure during critical events such as live deployment failures.

GS7. adapt quickly to new frameworks, tools, or upgraded AI models.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assist in deployment of AI models in telecom systems	**10**	**19**	**-**	**3**
PC1. configure environment variables, containerize models using Docker, and deploy them in staging or live telecom systems under supervision.	1	4	-	1
PC2. assist in linking ML model endpoints (e.g., REST APIs or ONNX runtime) with telecom OSS/BSS systems or data pipelines.	1	4	-	-
PC3. verify configuration files (e.g., YAML/JSON) to ensure data sources, thresholds, and runtime parameters are correctly defined.	2	3	-	1
PC4. perform dry-run deployments to validate functional compatibility and data flow integrity.	2	4	-	-
PC5. identify missing dependencies or version mismatches in model libraries and escalate accordingly.	2	2	-	1
PC6. coordinate with DevOps or MLOps teams to ensure CI/CD pipelines are functioning correctly during deployment stages.	2	2	-	-
Monitor model inference, logging, and system metrics	**11**	**21**	**-**	**3**
PC7. monitor inference results and cross-check against pre-validated benchmarks (e.g., ROC AUC, F1-score) for telecom datasets.	2	3	-	1
PC8. log prediction errors, out-of-distribution data anomalies, and alert flags triggered by model predictions.	2	4	-	1
PC9. use model monitoring tools (e.g., Grafana, Prometheus, or custom dashboards) to track inference latency, resource utilization, and drop rates.	2	4	-	-
PC10. support telemetry captures of live traffic, usage patterns, or network signals feeding into ML models.	2	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. create anomaly reports when model confidence scores fall below predefined thresholds or show drift over time.	1	4	-	-
PC12. extract system logs and model audit trails during failure events for root-cause documentation.	2	4	-	-
Support troubleshooting, versioning, and retraining coordination	**6**	**14**	**-**	**3**
PC13. identify misalignment between model predictions and actual network performance indicators (e.g., call drop rate, jitter, throughput).	1	3	-	1
PC14. assist in tuning model hyperparameters or changing inference thresholds based on recent data under analyst guidance.	2	3	-	1
PC15. track model versions using Git, DVC, or model registries and support rollbacks in case of functional degradation.	1	4	-	-
PC16. prepare data summaries for retraining triggers using tools like Pandas or SQL, based on model performance decay trends.	2	4	-	1
Maintain model logs and documentation	**3**	**6**	**-**	**1**
PC17. maintain structured logs of model updates, test results, bug reports, and performance evaluations.	1	3	-	1
PC18. draft update notes and version release summaries for the operational team during model pushes or rollbacks.	2	3	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6609
NOS Name	Support Implementation of AI Solutions in Telecom Operations
Sector	Telecom
Sub-Sector	
Occupation	Data Handling – Network Managed Services
NSQF Level	4
Credits	4
Version	1.0
Last Reviewed Date	19/08/2025
Next Review Date	30/06/2028
NSQC Clearance Date	19/08/2025

TEL/N9101: Organise Work and Resources as per Health and Safety Standards

Description

This OS covers the skills and knowledge required to organise work and resources efficiently while maintaining health, safety, hygiene, and environmental standards in the workplace.

Scope

The scope covers the following :

- Maintain an organised, productive, and digitally compliant workspace
- Adhere to health, safety, and environmental guidelines
- Conserve energy and manage resources efficiently
- Implement safe and sustainable waste disposal practices

Elements and Performance Criteria

Maintain an organised, productive, and digitally compliant workspace

To be competent, the user/individual on the job must be able to:

PC1. maintain a clean, clutter-free, and ergonomically safe workspace aligned with 5S principles

PC2. follow designated workflow as per the organisational Standard Operating Procedures (SOPs)

PC3. digitally log work completed, including time stamps, material usage, and issues faced

PC4. track and update digital task checklists, inventories, or handovers through mobile/desktop apps

PC5. identify delays, workflow inefficiencies, or material constraints and escalate appropriately.

Adhere to health, safety, and environmental guidelines

To be competent, the user/individual on the job must be able to:

PC6. comply with organisational health, safety, and environment (HSE) policies at all times

PC7. use personal protective equipment (PPE) such as ESD wrist straps, gloves, masks, and safety footwear

PC8. report any breaches in safety protocols, near misses, or unsafe practices immediately to supervisor/concerned authorities

PC9. detect hazards, including spillage, loose wiring, excessive noise, or EMI sources and respond as per SOP

PC10. follow lockout/tagout procedures when working around electrical or moving parts

PC11. adhere to safe lifting techniques, workstation posture norms, and equipment handling procedures

PC12. handle tools and heavy components using trolleys or assistive equipment when needed

PC13. identify early signs of physical or mental fatigue and report for preventive action

PC14. inform supervisor of symptoms related to communicable diseases or unsafe coworker behaviour.

Conserve energy and manage resources efficiently

To be competent, the user/individual on the job must be able to:

PC15. minimise wastage of consumables, components, and materials by adhering to industry best practices

PC16. use electricity, lighting, and climate-control systems responsibly

PC17. power off equipment, tools, and terminals when not in use

PC18. ensure routine maintenance, cleaning, and calibration of machines/tools to improve performance

PC19. report leakages, overheating, or malfunctions immediately for rectification

PC20. use digital tools to monitor and reduce environmental footprint, where applicable.

Implement safe and sustainable waste disposal practices

To be competent, the user/individual on the job must be able to:

PC21. segregate and dispose of hazardous, recyclable, and general waste as per guidelines

PC22. deposit e-waste or used batteries at designated collection points following e-waste protocols

PC23. follow ESD-safe disposal procedures for sensitive electronic components

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisational procedures for workplace management, task allocation, and quality assurance

KU2. applicable health, safety, and environmental policies as per national/international standards (e.g., ISO 45001, ISO 14001)

KU3. importance and application of the 5S methodology (Sort, Set in Order, Shine, Standardise, Sustain)

KU4. methods for digital documentation of work records, task sheets, and material movement logs

KU5. common workplace hazards (e.g., ESD, fire, electrical faults, trip hazards) and mitigation procedures

KU6. types and correct usage of PPE (e.g., gloves, goggles, ESD wrist straps, masks, safety shoes)

KU7. safe practices for lifting, bending, standing, and workstation ergonomics

KU8. first aid procedures for minor cuts, electric shocks, or workplace injuries

KU9. importance of maintaining hygiene and cleanliness in workstations, tools, and devices

KU10. indicators of equipment or machinery malfunction and escalation protocols

KU11. energy-saving practices applicable to lights, equipment, and HVAC systems

KU12. sustainable practices in material usage, including waste minimisation and recycling

KU13. types of waste: recyclable, non-recyclable, hazardous (e.g., batteries, solvents, e-waste)

KU14. correct procedures for the disposal of different types of waste in accordance with government and industry regulations (e.g., E-Waste Management Rules)

KU15. usage of digital tools (e.g., mobile apps, web portals, task boards) for productivity tracking

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret organisational procedures, safety protocols, labels, and warning signage

GS2. write clear and accurate reports/logs in paper or digital format regarding tasks performed, incidents, or issues

GS3. communicate effectively with peers and supervisors regarding workload, delays, hazards, or support required

GS4. listen attentively and follow safety instructions, tool handling techniques, or ergonomic guidelines

GS5. plan daily tasks by prioritising safety and quality over speed

GS6. identify and resolve minor operational problems independently, escalating only where necessary

GS7. work as part of a team to maintain cleanliness, safety, and quality standards in a shared workspace.

GS8. apply critical thinking to identify risks and recommend proactive safety measures.

GS9. foster a positive and responsible safety culture in the workplace.

GS10. stay updated on evolving safety standards and regulations.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain an organised, productive, and digitally compliant workspace	**6**	**13**	**-**	**2**
PC1. maintain a clean, clutter-free, and ergonomically safe workspace aligned with 5S principles	1	2	-	-
PC2. follow designated workflow as per the organisational Standard Operating Procedures (SOPs)	2	3	-	-
PC3. digitally log work completed, including time stamps, material usage, and issues faced	1	3	-	1
PC4. track and update digital task checklists, inventories, or handovers through mobile/desktop apps	1	3	-	-
PC5. identify delays, workflow inefficiencies, or material constraints and escalate appropriately.	1	2	-	-1
Adhere to health, safety, and environmental guidelines	**13**	**24**	**-**	**5**
PC6. comply with organisational health, safety, and environment (HSE) policies at all times	1	3	-	1
PC7. use personal protective equipment (PPE) such as ESD wrist straps, gloves, masks, and safety footwear	1	3	-	-
PC8. report any breaches in safety protocols, near misses, or unsafe practices immediately to supervisor/concerned authorities	2	2	-	1
PC9. detect hazards, including spillage, loose wiring, excessive noise, or EMI sources and respond as per SOP	1	3	-	1
PC10. follow lockout/tagout procedures when working around electrical or moving parts	2	3	-	-
PC11. adhere to safe lifting techniques, workstation posture norms, and equipment handling procedures	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. handle tools and heavy components using trolleys or assistive equipment when needed	1	3	-	1
PC13. identify early signs of physical or mental fatigue and report for preventive action	2	2	-	1
PC14. inform supervisor of symptoms related to communicable diseases or unsafe coworker behaviour.	1	2	-	-
Conserve energy and manage resources efficiently	**7**	**14**	**-**	**2**
PC15. minimise wastage of consumables, components, and materials by adhering to industry best practices	1	3	-	-
PC16. use electricity, lighting, and climate-control systems responsibly	1	3	-	-
PC17. power off equipment, tools, and terminals when not in use	1	2	-	-
PC18. ensure routine maintenance, cleaning, and calibration of machines/tools to improve performance	1	2	-	1
PC19. report leakages, overheating, or malfunctions immediately for rectification	2	2	-	1
PC20. use digital tools to monitor and reduce environmental footprint, where applicable.	1	2	-	-
Implement safe and sustainable waste disposal practices	**4**	**9**	**-**	**1**
PC21. segregate and dispose of hazardous, recyclable, and general waste as per guidelines	2	3	-	-
PC22. deposit e-waste or used batteries at designated collection points following e-waste protocols	1	3	-	-
PC23. follow ESD-safe disposal procedures for sensitive electronic components	1	3	-	1
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9101
NOS Name	Organise Work and Resources as per Health and Safety Standards
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	3.0
Last Reviewed Date	19/08/2025
Next Review Date	30/06/2028
NSQC Clearance Date	19/08/2025

TEL/N9102: Interact Effectively with Team Members and Customers

Description

This OS pertains to techniques to interact effectively with supervisors, team members, customers and promote inclusivity in the workplace.

Scope

The scope covers the following :

- Interact effectively with supervisors and stakeholders
- Collaborate effectively with team members and customers
- Promote inclusivity, respect, and accessibility in the workplace

Elements and Performance Criteria

Interact effectively with supervisors and stakeholders

To be competent, the user/individual on the job must be able to:

PC1. receive and clarify work instructions, technical requirements, and priorities from supervisors or clients using appropriate communication tools (e.g., messaging apps, emails, virtual meetings)

PC2. inform supervisors or relevant stakeholders in a timely manner about any issues, risks, or deviations from planned tasks

PC3. contribute to team decisions by providing relevant data, suggestions, and professional feedback during team discussions

PC4. act promptly on constructive feedback and incorporate learnings to improve future work outcomes

Collaborate effectively with team members and customers

To be competent, the user/individual on the job must be able to:

PC5. follow organisational norms and digital etiquette when working in hybrid or remote teams

PC6. communicate respectfully and effectively using face-to-face, phone, email, or collaboration platforms (e.g., MS Teams, Zoom)

PC7. seek clarification and respond to queries from customers and team members accurately and promptly

PC8. identify and de-escalate conflicts tactfully to maintain a productive and harmonious work environment

PC9. demonstrate emotional intelligence in team settings by recognising and responding to others' perspectives and emotional states

PC10. align personal efforts with team and organisational goals to ensure shared success.

Promote inclusivity, respect, and accessibility in the workplace

To be competent, the user/individual on the job must be able to:

PC11. foster an inclusive workplace culture that respects gender, cultural, and socio-economic diversity

PC12. demonstrate respectful language and conduct toward colleagues and customers of all genders and backgrounds

PC13. support team members with disabilities by helping remove work-related barriers or by assisting them as needed

PC14. practice appropriate verbal and non-verbal communication while engaging with persons with disabilities (PwDs)

PC15. promote equal opportunity and participation for all in meetings, decision-making, and teamwork.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisational structure, hierarchy, and roles of team members, supervisors, and stakeholders

KU2. professional etiquette and expected behaviour in face-to-face, virtual, and telephonic interactions

KU3. importance of clear communication and active listening to ensure mutual understanding

KU4. common digital communication tools (e.g., email, chat apps, video conferencing platforms) used in workplace interactions

KU5. feedback mechanisms within the organisation and how to respond constructively to criticism

KU6. cultural sensitivities, unconscious biases, and the importance of inclusion and diversity in the workplace

KU7. principles of emotional intelligence and how they help in team coordination and customer service

KU8. challenges faced by Persons with Disabilities (PwDs) and inclusive practices for working with them

KU9. legal and organisational frameworks supporting equality, diversity, and anti-discrimination

KU10. methods for conflict prevention and resolution, including mediation and escalation

KU11. role of respect, trust, and open communication in team effectiveness and customer satisfaction

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret work instructions, emails, and policy documents related to workplace behaviour and communication.

GS2. write clear, concise emails, reports, or messages to team members, supervisors, or customers

GS3. communicate clearly and confidently in person, over the phone, and using digital communication platforms

GS4. adapt communication style based on the needs of the audience (e.g., customer, peer, supervisor, PwD)

GS5. listen attentively to gather information, understand perspectives, and clarify doubts.

GS6. prioritise tasks and allocate time effectively in coordination with team members

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Interact effectively with supervisors and stakeholders	**11**	**13**	**-**	**2**
PC1. receive and clarify work instructions, technical requirements, and priorities from supervisors or clients using appropriate communication tools (e.g., messaging apps, emails, virtual meetings)	3	3	-	-
PC2. inform supervisors or relevant stakeholders in a timely manner about any issues, risks, or deviations from planned tasks	2	3	-	-
PC3. contribute to team decisions by providing relevant data, suggestions, and professional feedback during team discussions	3	4	-	1
PC4. act promptly on constructive feedback and incorporate learnings to improve future work outcomes	3	3	-	1
Collaborate effectively with team members and customers	**16**	**21**	**-**	**4**
PC5. follow organisational norms and digital etiquette when working in hybrid or remote teams	3	4	-	1
PC6. communicate respectfully and effectively using face-to-face, phone, email, or collaboration platforms (e.g., MS Teams, Zoom)	3	3	-	1
PC7. seek clarification and respond to queries from customers and team members accurately and promptly	3	3	-	1
PC8. identify and de-escalate conflicts tactfully to maintain a productive and harmonious work environment	2	4	-	-
PC9. demonstrate emotional intelligence in team settings by recognising and responding to others' perspectives and emotional states	2	3	-	-
PC10. align personal efforts with team and organisational goals to ensure shared success.	3	4	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Promote inclusivity, respect, and accessibility in the workplace	**13**	**16**	**-**	**4**
PC11. foster an inclusive workplace culture that respects gender, cultural, and socio-economic diversity	3	3	-	1
PC12. demonstrate respectful language and conduct toward colleagues and customers of all genders and backgrounds	2	3	-	-
PC13. support team members with disabilities by helping remove work-related barriers or by assisting them as needed	3	4	-	1
PC14. practice appropriate verbal and non-verbal communication while engaging with persons with disabilities (PwDs)	2	3	-	1
PC15. promote equal opportunity and participation for all in meetings, decision-making, and teamwork.	3	3	-	1
NOS Total	**40**	**50**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9102
NOS Name	Interact Effectively with Team Members and Customers
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	3.0
Last Reviewed Date	19/08/2025
Next Review Date	30/06/2028
NSQC Clearance Date	19/08/2025

DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

KU10. how to compute income and expenses
KU11. importance of maintaining safety and security in financial transactions
KU12. different legal rights and laws
KU13. how to operate digital devices and applications safely and securely
KU14. ways to identify business opportunities
KU15. types of customers and their needs
KU16. how to apply for a job and prepare for an interview
KU17. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate effectively using appropriate language
GS2. behave politely and appropriately with all
GS3. perform basic calculations
GS4. solve problems effectively
GS5. be careful and attentive at work
GS6. use time effectively
GS7. maintain hygiene and sanitisation to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**1**	**3**	**-**	**-**
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	**1**	**1**	**-**	**-**
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**1**	**-**	**-**
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial and Legal Literacy	**3**	**4**	**-**	**-**
PC9. use various financial products and services safely and securely	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
Essential Digital Skills	**4**	**6**	**-**	**-**
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
Entrepreneurship	**3**	**5**	**-**	**-**
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	**2**	**2**	**-**	**-**
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**1**	**3**	**-**	**-**
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each Element/PC.

2. The assessment for the theory part will be based on a knowledge bank of questions created by the SSC.

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N6607.Collect Data using AI Tools	30	60	-	10	100	18
TEL/N6608.Analyze Data using AI Tools and Utilize data in Business Productivity	30	60	-	10	100	18
TEL/N6609.Support Implementation of AI Solutions in Telecom Operations	30	60	-	10	100	18
TEL/N9101.Organise Work and Resources as per Health and Safety Standards	30	60	0	10	100	18
TEL/N9102.Interact Effectively with Team Members and Customers	40	50	0	10	100	18
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	**180**	**320**	**0**	**50**	**550**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualification Pack
TVET	Technical and Vocational Education and Training