Model Curriculum

QP Name: Machine Learning (ML) Telecom Architect

QP Code: TEL/Q6603

Version: 3.0

NSQF Level: 5

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

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Training Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Data Handling – Network Managed Services
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7421.6102
Minimum Educational Qualification and Experience	Completed 2nd year of 3-year/ 4-years UG** Or Completed 2nd year of diploma* (after 12th) 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 and Communication, IT, Computer Science, Data Science or AI/ML related fields* *** UG: Engineering/Technology (preferably in Computer Science, Electronics and Communication, IT, Data Science or AI/ML related fields)* ****Relevant experience in Data Annotation or Data Labelling, Basic Programming and Scripting (Python preferred), AI/ML project assistance or other relevant domains*
Pre-Requisite License or Training	Basic knowledge of Python and Data Structures
Minimum Job Entry Age	NA
Last Reviewed On	19-Aug-2025
Next Review Date	30-June-2028
NSQC Approval Date	19-Aug-2025
QP Version	3.0
Model Curriculum Creation Date	19-Aug-2025

Model Curriculum Valid Up to Date	30-June-2028
Model Curriculum Version	3.0
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:

- Describe the process of preparing to develop machine learning systems.
- Demonstrate the process of developing and assisting in the implementation of machine learning systems.
- Explain the importance of implementing effective communication and coordination at work.
- Explain the importance of managing work and resources, and ensuring health and safety at work.

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/N6610: Prepare for Development of ML-Based Telecom Network Intelligence Systems **NOS Version-1.0** **NSQF Level- 5**	**30:00**	**90:00**	**90:00**	**-**	**210:00**
Module 1: Introduction to the role of Machine Learning (ML) Telecom Architect	10:00	-	-	-	10:00
Module 2: Prepare for Development of ML-Based Telecom Network Intelligence Systems	20:00	90:00	90:00	-	200:00
TEL/N6611: Develop and Support Implementation of ML Solutions in Telecom Operations **NOS Version-1.0** **NSQF Level- 5**	**40:00**	**100:00**	**70:00**	**-**	**210:00**
Module 3: Develop and Support Implementation of ML Solutions	40:00	100:00	70:00	-	210:00

in Telecom Operations					
TEL/N9103: Implement effective interaction at workplace **NOS Version-3.0** **NSQF Level-5**	**10:00**	**10:00**	**10:00**	**-**	**30:00**
Module 4: Communication and Interpersonal skills	10:00	10:00	10:00	-	30:00
TEL/N9104: Manage work, Resource and safety at workplace **NOS Version-3.0** **NSQF Level-5**	**10:00**	**10:00**	**10:00**	**-**	**30:00**
Module 5: Manage work, Resource and safety at workplace	10:00	10:00	10:00	-	30:00
DGT/VSQ/N0102: Employability Skills (60 Hours) NOS Version No. 1 NSQF Level- 4	**60:00**	**-**	**-**	**-**	**60:00**
Module 8: Employability Skills (60 hours)	60:00	-	-	-	60:00
Total Duration	**150:00**	**210:00**	**180:00**	**-**	**540:00**

Module Details

Module 1: Introduction to the Role of Machine Learning (ML) Telecom Architect

Bridge Module TEL/N6610 & v1.0

Terminal Outcomes:

- Discuss the job role of a Machine Learning (ML) Telecom Architect.
- Explain the scope of work for a Machine Learning (ML) Telecom Architect.

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 Machine Learning (ML) Telecom Architect. • Identify various employment opportunities for a Machine Learning (ML) Telecom Architect. • Discuss the organisational policies on workplace ethics, managing sites, quality standards, personnel management and public relations (PR). • Describe the process workflow in the organization and the role of the Machine Learning (ML) Telecom Architect in the process. • List the various daily, weekly, monthly operations/activities that take place at the site under a Machine Learning (ML) Telecom Architect.	
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: Prepare for Development of ML-Based Telecom Network Intelligence Systems

Mapped to NOS: TEL/N6610 & v1.0

Terminal Outcomes:

- Analyze telecom data sources and prepare datasets by applying validation, pre-processing, and augmentation techniques to support machine learning model development.
- Design ML problem statements from telecom use cases and map them to appropriate ML models, algorithms, and evaluation metrics.
- Develop scalable and modular ML pipelines for telecom environments using standard tools while ensuring compliance with data privacy and regulatory guidelines.

Duration: 20:00	**Duration: 90:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain various sources and formats of telecom data, including OSS/BSS systems, usage logs, and sensor feeds. • Describe data extraction, validation, and pre-processing methods suitable for telecom ML datasets. • Discuss the importance and techniques of Exploratory Data Analysis (EDA) to identify trends, anomalies, and data quality issues. • Identify common problems in telecom datasets such as data imbalance, missing values, and multicollinearity, and their impact on ML models. • Compare data augmentation methods like SMOTE and GANs in the context of rare telecom events. • Illustrate different telecom business use cases and map them to suitable ML problem types (e.g., churn prediction → classification). • Discuss feasibility assessment parameters for ML solutions in telecom, including business, technical, and regulatory considerations. • Explain feature engineering and dimensionality reduction techniques like PCA and autoencoders.	• Demonstrate extraction and interpretation of telecom datasets in CSV, JSON, or Parquet format. • Conduct exploratory data analysis to detect trends, missing values, and outliers in telecom datasets. • Apply validation rules to ensure dataset completeness, consistency, and accuracy. • Perform data pre-processing by encoding categorical features, imputing missing values, and handling outliers. • Use domain knowledge or VIF methods to analyse feature correlations and remove multicollinearity • Generate synthetic datasets using augmentation techniques to address class imbalance in telecom problems. • Propose appropriate ML problem types for given telecom scenarios (e.g., fraud detection, load prediction). • Show how to map telecom use cases to ML techniques such as classification, regression, or clustering. • Evaluate ML models or pipelines for issues such as drift, underfitting, or overfitting using benchmark metrics.

• Outline the phases of an ML system lifecycle and its architecture specific to telecom environments. • Discuss experiment management and version control tools used in ML development (e.g., Git, MLflow). • Describe telecom-specific model performance metrics and monitoring strategies post-deployment. • Summarize telecom data privacy requirements and regulatory compliance considerations for ML workflows.	• Design a scalable ML pipeline including steps for data ingestion, pre-processing, training, and validation. • Use tools like Git or DVC for version control of datasets and experiments. • Implement experiment tracking using MLflow, TensorBoard, or similar frameworks. • Plan monitoring strategies for deployed ML models in live telecom environments. • Display the method to calculate the resource requirements, timelines, and risks associated with ML system development in telecom projects.
Classroom Aids:	
Training Kit (Trainer Guide, Presentations), Whiteboard, Markers, Notebooks, and Pens, Laptop/Computer with an Internet connection, Speakers, Projector or Large screen.	
Tools, Equipment and Other Requirements	
Jupyter Notebook, Python IDE (PyCharm/VSCode), GitHub, Git CLI, MLflow, TensorBoard, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, TensorFlow, PyTorch, CSV/JSON/Parquet sample datasets, Telecom OSS/BSS sample logs.	

Module 3: Develop and Support Implementation of ML Solutions in Telecom Operations

Mapped to NOS: TEL/N6611 & v1.0

Terminal Outcomes:

- Design and optimise machine learning models for telecom applications using appropriate algorithms and performance metrics.
- Develop and deploy ML systems using REST APIs, containerisation, and CI/CD pipelines in telecom environments.
- Monitor and manage the lifecycle of deployed ML models, ensuring continuous improvement, compliance, and performance tracking.

Duration: 40:00	**Duration: 100:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain various ML algorithms and their application in telecom use cases like churn prediction, traffic forecasting, and fraud detection. • Describe the process of hyperparameter tuning and its importance in improving model performance. • Interpret different model evaluation techniques such as ROC-AUC, confusion matrix, and time-based cross-validation. • Outline forecasting models and their relevance in telecom time series data (e.g., Prophet, LSTM). • Describe strategies for model compression, pruning, and inference on edge devices. • Explain REST API development and containerisation for deploying ML models in production. • Discuss CI/CD concepts and tools relevant to ML deployment in telecom environments. • Describe model monitoring techniques, version control, and experiment tracking in production. • Explain automated ML pipelines using orchestration tools like Airflow and	• Develop ML models using appropriate algorithms for telecom applications such as churn prediction or fraud detection. • Apply hyperparameter tuning methods like GridSearchCV or Optuna to optimise model performance. • Perform model evaluation using time-based validation, ROC-AUC, F1-score, and confusion matrices. • Build forecasting models using Prophet or LSTM for telecom network traffic prediction. • Construct anomaly detection models using ensemble techniques like isolation forests. • Apply model compression techniques to reduce latency for edge deployments. • Develop REST APIs for ML inference using Flask or FastAPI. • Containerise ML models with Docker and validate for cloud or edge deployment readiness. • Develop CI/CD pipelines using Jenkins, GitHub Actions, or GitLab CI for automated ML deployment.

Kubeflow. • Identify regulatory, ethical, and cost-performance considerations in deploying telecom ML systems.	• Show hwo to implement model versioning and metadata tracking using MLflow or DVC. • Create monitoring dashboards using tools like Grafana and Prometheus to track performance metrics. • Use orchestration tools like Airflow or Kubeflow to automate training and retraining workflows • Utilise appropriate procedure to track and analyse model drift, latency, and throughput in production environments. • Role-play to Collaborate with cross-functional teams to interpret and act upon model outputs. • Show ho0077 to document model architecture, deployment steps, and standard operating procedures. • Use tools such as Tableau or Power BI to visualise model performance insights.
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	
High-performance GPU, Python IDE (e.g., JupyterLab, VS Code), Docker, Flask, FastAPI, Git and GitHub, Jenkins, GitHub Actions, GitLab CI, Scikit-learn, TensorFlow, PyTorch, XGBoost, LightGBM, Prophet, MLflow, DVC, Apache Airflow, Kubeflow, Prometheus, Grafana, Tableau, Power BI, Internet connectivity, Projector, Whiteboard, Telecom datasets (e.g., call records, usage patterns), Sample REST APIs.	

Module 4: Implement Effective Interaction at Workplace

Mapped to NOS: TEL/N9103, v3.0

Terminal Outcomes:

- Demonstrate effective communication skills in diverse workplace scenarios using appropriate modes and tools.
- Apply inclusive and respectful behaviour while collaborating with colleagues, supervisors, and persons with disabilities (PwDs).
- Resolve workplace conflicts and team coordination issues using constructive communication and mutual understanding.

Duration: 10:00	**Duration: 10:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of effective communication and collaboration in a professional setting. • Describe appropriate communication modes (face-to-face, email, chat, video conferencing) for various workplace scenarios. • Discuss protocols for escalating delays, reporting issues, and ensuring quality deliverables. • Identify techniques to manage team dynamics and resolve conflicts constructively. • Outline inclusive communication practices respecting gender, cultural diversity, and disabilities. • Describe categories of disabilities and organisational accommodations for persons with disabilities (PwDs). • Recognise policies and schemes promoting workplace inclusion and accessible work environments. • Explain the impact of unconscious bias and the importance of respectful workplace behaviour.	• Demonstrate effective verbal and written communication with supervisors, peers, and clients in simulated workplace tasks. • Role-play situations to clarify task expectations, report delays, and provide feedback in a professional manner. • Use appropriate communication tools (e.g., email, chat, video conferencing) based on workplace scenarios. • Collaborate with team members to plan tasks and resolve bottlenecks while maintaining mutual respect and alignment with team goals. • Display respectful behaviour in resolving interpersonal and operational conflicts. • Facilitate inclusive group discussions that accommodate diverse team members including PwDs. • Apply inclusive language and demonstrate culturally and socially sensitive communication practices. • Role-play to assist a team member with a disability through a mock task scenario ensuring accessibility and inclusion. • Exhibit professionalism and fairness while interacting with individuals of

	different backgrounds, identities, or abilities.
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	
Sample of escalation matrix	

Module 5: Manage work, Resource and Safety at Workplace

Mapped to NOS: TEL/N9104, v3.0

Terminal Outcomes:

- Evaluate individual and team performance in alignment with defined quality and productivity standards.
- Implement workplace safety protocols and environmentally sustainable practices in daily operations.
- Facilitate continuous learning, skill development, and problem-solving within the team to enhance overall effectiveness.

Duration: 10:00	**Duration: 10:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of continuous learning, self-direction, and team skill development for professional growth. • Describe methods to identify training needs and foster team participation in upskilling initiatives. • Illustrate logical thinking techniques and problem-solving frameworks applicable to operational challenges. • Explain performance standards, task prioritisation, and quality assurance systems used in the workplace. • Describe organisational safety policies, types of workplace hazards, and applicable emergency protocols. • Explain practices that promote mental well-being and respectful workplace culture. • Describe energy, water, and material conservation practices, including paperless and digital-first systems. • Identify preventive maintenance and reporting practices for tools, equipment, and digital resources. • Explain the relevance of ESG (Environmental, Social, and Governance) principles in workplace operations.	• Plan and update individual or team learning schedules based on skill gap assessments. • Facilitate participation in knowledge-sharing, training, and cross-functional learning initiatives. • Demonstrate logical analysis and root cause identification for workplace challenges. • Propose actionable solutions to common operational and team-related problems. • Apply task management and prioritisation strategies to organise individual and team workflows. • Use checklists and monitoring systems to track task completion, accuracy, and quality standards. • Display effective delegation techniques and scheduling for optimal productivity. • Conduct safety briefings and demonstrate correct responses to common workplace risks or incidents. • Report hazards, health issues, and equipment malfunctions using standard reporting templates. • Promote inclusive and mental

	wellness practices through team discussions or feedback mechanisms. ● Implement environmentally responsible actions like switching to digital records and optimising resource use. ● Perform regular upkeep of digital tools and equipment following routine maintenance guidelines.
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	
Maintenance Log Sheets, Safety Signage Posters, Fire Extinguisher, First Aid Kit, Feedback and Evaluation Forms, etc.	

Module 6: 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	5 Hours

		communication etiquette. • Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team	
7.	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
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 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	7 Hours
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 7: On-the-Job Training

Mapped to QP: TEL/Qxxxx, v1.0

Mandatory Duration: 180:00	**Recommended Duration: 00:00**
Location: On-Site	

- **Terminal Outcomes**
- Identify business problems and translate them into machine learning objectives through consultation with stakeholders.
- Plan data acquisition and access strategies by identifying relevant internal and external data sources.
- Collaborate with cross-functional teams to define goals, success metrics, and implementation constraints for ML models.
- Use tools like Python, Jupyter Notebook, and cloud-based platforms to explore data structure and quality.
- Apply data cleaning, normalization, and transformation techniques using Python libraries such as Pandas and NumPy.
- Develop new features or select existing ones using feature engineering best practices.
- Build ML models using supervised, unsupervised, or ensemble algorithms as per the problem statement.
- Evaluate ML models using relevant metrics such as accuracy, precision, recall, and F1-score.
- Tune hyperparameters using techniques like Grid Search or Random Search to improve model performance.
- Integrate ML models into existing systems using APIs or deployment tools like Flask, Docker, or cloud platforms.
- Test deployed models in real-time environments for accuracy, latency, and functionality.
- Document model assumptions, training data, validation results, and versioning for reproducibility.
- Demonstrate effective communication with supervisors regarding project progress, blockers, and support needs.
- Display inclusive, respectful, and professional behaviour in workplace interactions with all team members.
- Perform regular checks to ensure adherence to quality, accuracy, and data governance standards.
- Implement safety, health, and cyber hygiene protocols at the workplace during collaborative or solo tasks.
- Promote sustainable practices like paperless documentation and responsible use of compute resources.
- Monitor use of tools, software, and equipment to prevent malfunctions or inefficiencies.
- Facilitate learning by mentoring peers, sharing cross-functional knowledge, and supporting upskilling efforts.
- Reflect on project learnings and propose improvements to existing processes or ML pipelines.

Annexure

Trainer Requirements (Machine Learning (ML) Telecom Architect)

Trainer Prerequisites						
Minimum Educational Qualification	**Specialisation**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialisation***	***Years***	***Specialisation***	
Graduate / B. Tech	Electronics & Tele Communication Engineering, Information Technology, Computer Science and Applied Mathematics / Statistics with relevant programming experience	2	AI/ML, Data Science, Data structures, NLP and Computational models	1	NA	Eligible for ToT program
Master's Degree	Machine Learning, Artificial Intelligence, Data Science, Computer Science / IT, Applied Mathematics / Statistics with ML specialization	1	AI/ML, Data Science, Data structures, NLP and Computational models	1	NA	Eligible for ToT program

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role " **Machine Learning (ML) – Telecom Architect**" mapped to "TEL/Q6603, version 3.0", 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 (Machine Learning (ML) Telecom Architect)

Assessor Prerequisites						
Minimum Educational Qualification	**Specialisation**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialisation***	***Years***	***Specialisation***	
Graduate / B. Tech	Electronics & Tele Communication Engineering, Information Technology, Computer Science and Applied Mathematics / Statistics with relevant programming experience	2	AI/ML, Data Science, Data structures, NLP and Computational models	2	NA	Eligible for ToA program
Master's Degree	Machine Learning, Artificial Intelligence, Data Science, Computer Science / IT, Applied Mathematics / Statistics with ML specialization	1	AI/ML, Data Science, Data structures, NLP and Computational models	1	NA	Eligible for ToA program

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role " **Machine Learning (ML) – Telecom Architect**" mapped to "TEL/Q6603, version 3.0", 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 Drives.

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	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