



Model Curriculum

QP Name: AI & ML – Jr. Telecom Data Analyst

QP Code: TEL/Q6602

Version: 1.0

NSQF Level: 4

Model Curriculum Version: 1.0

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

Table of Contents

Training Parameters	3
Program Overview	4
Training Outcomes	4
Compulsory Modules	4
Module 1: Introduction to the role of an AI – Telecom Data Analyst	6
Module 2: Process of collecting data using AI tools.....	7
Module 3: Process of analysing data using AI tools and utilising data in business productivity....	8
Module 4: Process of organising work and resources as per health and Safety standards	10
Module 5: Process of interacting effectively with team members and customers	12
Module 6: On-the-Job Training.....	14
Annexure.....	15
Trainer Requirements.....	15
Assessor Requirements	16
Assessment Strategy	17
References.....	19
Glossary.....	19
Acronyms and Abbreviations	20

Training Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Data Handling - Network Managed Services
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2523.6602
Minimum Educational Qualification and Experience	<p>Class 12th Pass (with vocational education in IT) OR Class 10th + ITI (2 years in Electronics/Telecom/IT and other relevant fields) OR Class 10th Pass and pursuing continuous regular schooling OR Class 10th with 2 years of relevant experience OR Class 8th Pass + ITI (2 years in Electronics/Telecom/IT and other relevant fields) with 2 years of relevant experience OR Diploma after Class 10th (3 years in Electronics/Telecom/IT and other relevant fields) OR Certified in NSQF-L3 AI Devices Installation Executive with 2 years of relevant experience</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	30/06/2022
Next Review Date	30/06/2025
NSQC Approval Date	30/06/2022
QP Version	1.0
Model Curriculum Creation Date	30/06/2022
Model Curriculum Valid Up to Date	30/06/2025
Model Curriculum Version	1.0
Minimum Duration of the Course	450 Hours
Maximum Duration of the Course	450 Hours

Program Overview

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

Training Outcomes

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

- Describe the process of collecting data using AI tools.
- Describe the process of analysing data using AI tools and assist in business improvement.
- 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
Bridge Module	08:00	04:00	12:00	-	24:00
Module 1: Introduction to the role of an AI & ML – Jr. Telecom Data Analyst	08:00	04:00	12:00	-	24:00
TEL/N6607: Collect data using AI tools NOS Version-1.0 NSQF Level- 4	40:00	78:00	54:00	-	172:00
Module 2: Process of collecting data using AI tools	40:00	78:00	54:00	-	172:00
TEL/N6608: Analyse Data using AI Tools and Utilize data in Business Productivity NOS Version-1.0 NSQF Level- 4	40:00	80:00	54:00	-	174:00
Module 3: Process of analysing data using AI tools and utilising data in business productivity	40:00	80:00	54:00	-	174:00
TEL/N9101: Organise Work and Resources as per Health and Safety Standards NOS Version-1.0	16:00	24:00	00:00	-	40:00

NSQF Level-4					
Module 4: Process of organising work and resources as per health and Safety standards	16:00	24:00	00:00	-	40:00
TEL/N9102: Interact Effectively with Team Members and Customers NOS Version-1.0 NSQF Level-4	16:00	24:00	00:00	-	40:00
Module 5: Process of interacting effectively with team members and customers	16:00	24:00	00:00	-	40:00
Total Duration	120:00	210:00	120:00	-	450:00

Module Details

Module 1: Introduction to the role of an AI & ML – Jr. Telecom Data Analyst

Bridge Module

Terminal Outcomes:

- Discuss the job role of an AI – Telecom Data Analyst.
- Explain the scope of work for an AI – Telecom Data Analyst.

Duration: 08:00	Duration: 04:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the size and scope of the Telecom industry and its sub-sectors. • Discuss the role and responsibilities of an AI – Data Analyst. • Identify various employment opportunities for an AI – Data Analyst. • 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 an AI-Data Analyst in the process. • List the various daily, weekly, monthly operations/activities that take place at the site under an AI-Data Analyst. 	<ul style="list-style-type: none"> • Role play based on case studies, outlining the scope, responsibilities, and challenges of an AI – Data Analyst. • Analyse the requirements for the course and prepare for the pre-requisites of the course.
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: Process of collecting data using AI tools

Mapped to TEL/N6607 v1.0

Terminal Outcomes:

- Describe the process of determining the scope.
- Describe the process of collecting and preparing the data for analysis.

Duration: 40:00	Duration: 78:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the benefits of using AI-based data analytics tools to identify solutions to business issues and making predictions. • Explain the importance and process of determining the scope and objectives of data analysis. • Explain how to identify the type of data required to be collected based on the scope and objectives. • Explain different types of data used for AI analysis, such as numerical, textual and visual data. • Explain the use of AI technology for making enterprise data accessible to various stakeholders in an organisation. • Explain how to use the relevant AI technology to identify and remove corrupt data. • Explain the importance of identifying and rectifying the coding errors before data analysis. • Explain how to determine the best attributes for the data model and build an algorithm to answer the relevant business question(s). • Explain how to organise data in a readable format using the relevant AI tools. 	<ul style="list-style-type: none"> • Show how to collect the relevant data from the appropriate sources using the relevant automated tools. • Demonstrate the use of relevant technologies, such as analytics, machine learning, and Natural Language Generation (NLG), to automate data management processes. • Show how to use Natural Language Query (NLQ) to enable the stakeholders to find answers and extract insights from data intuitively. • Demonstrate how to assess the quality and meaning of data using the relevant AI tool. • Demonstrate the use of the relevant AI technology to identify and remove corrupt data. • Demonstrate the use of cloud server for storing large data sets.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector	
Tools, Equipment and Other Requirements	
Laptop /Desktop with pre-installed (SQL Server, Java, Java Virtual Machine (JVM), R programming Software) language/ Software.	

Module 3: Process of analysing data using AI tools and utilising data in business productivity

Mapped to TEL/N6608 v1.0

Terminal Outcomes:

- Demonstrate the process of carrying out data analysis using AI tools.
- Demonstrate the process of preparing the relevant reports.
- Describe the process of assisting in business improvement.

Duration: 40:00	Duration: 80:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the benefits and application of augmented analytics or AI-driven analytics. • Explain the benefits of using data analytics, such as identification of new business opportunities, achieving improved operational efficiency, conducting more effective marketing campaigns, and providing customers with high-quality customer service. • Explain the use of predictive analytics to predict what might happen, basing the predictions on historical data and relying on human interaction to query data, validate patterns, create and then test assumptions. • Explain the use of AI machine learning to make assumptions, reassess models and reevaluate data. • Explain how AI helps in the effective analysis of quantifiable data, such as statistics and numbers. • Explain the benefits and application of data analytics in marketing programs and business intelligence efforts. • Explain how machine learning algorithms help automate the process of data analysis, generating insights quickly. • Explain how augmented analytics translates a query in natural language into machine language, generates meaningful results and insights and 	<ul style="list-style-type: none"> • Demonstrate the process of carrying out the Extract, Transform and Load (ETL) data process automatically using augmented analytics to get data ready for analysis. • Show how to commission and decommission data sets as per the requirement. • Show how to use augmented analytics for automatic data processing and deriving the appropriate insights. • Demonstrate how to analyse the relevant local, national, and global trends that impact both the organisation and the industry. • Show how to use the relevant AI-based statistical tools to identify, analyse, and interpret patterns, trends and actionable insights in large and complex data sets. • Demonstrate how to analyse the past and present data as part of Business Intelligence (BI) to identify ways to deliver insights faster and help conduct business efficiently. • Demonstrate the use of NLQ and NLG to query the data in machine language. • Demonstrate the use of augmented analytics to prepare relevant reports automatically with the insights derived through data analysis, along with solutions to existing business

<p>presents them in easy-to-understand language.</p> <ul style="list-style-type: none"> • Explain how querying data feature enables professionals to analyse data deeply. • Explain the benefit of using augmented analytics, such as the ability to query data and the use of BI tools without any technical expertise. • Explain how to use AI technology to assess the quality and meaning of data. • Explain how Business Intelligence (BI) helps identify ways to deliver insights faster and conduct business efficiently. • Describe the process of using the data analysis reports to make critical business decisions. • Explain the importance of co-ordinating with relevant stakeholders to identify process improvement opportunities and implementing the improvements. 	<p>issues and predictions.</p>
<p>Classroom Aids</p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>NA</p>	

Module 4: Process of organising work and resources as per health and Safety standards

Mapped to NOS TEL/N9101 v1.0

Terminal Outcomes:

- Explain the importance of performing work as per quality standards.
- Explain the importance of maintaining a safe, healthy and secure working environment.
- Explain the importance of conserving material/energy/electricity.
- Describe the process of using effective waste management/recycling practices.

Duration: 16:00	Duration: 24:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain various strategies pertinent to their field (such as internet searches, asking peers and managers, enrolling for courses and certifications, etc.) that can be used to pursue advancement in their skills. • State key performance indicators for the new tasks. • Describe feedback processes and formats. • Explain timelines and goals as well as their relevance to work allocated. • Explain the importance of quality and timely delivery of the product/service. • Explain the escalation matrix and its importance, especially in case of emergencies. • Explain various ways of time and cost management. • State the rules/regulations for maintaining health and safety at the workplace. • Explain the meaning of hazard, different types of health and safety hazards found in the workplace, risks and threats based on the nature of work. • Explain the relevant signage, warnings, labels or descriptions on equipment, etc. while carrying out work activities. 	<ul style="list-style-type: none"> • Demonstrate how to record/document tasks completed as per the requirements within specific timelines. • Show how to analyse problems accurately and communicate different possible solutions to the problem. • Demonstrate how to report any identified breaches in health, safety, and security policies and procedures to the designated person. • Demonstrate the process of using safety materials such as goggles, gloves, earplugs, caps, ESD pins, covers, shoes, etc. • Demonstrate the process of handling heavy and hazardous materials with care, while maintaining appropriate posture. • Demonstrate the process of carrying out routine cleaning of tools, machines and equipment. • Demonstrate ways to optimise the use of electricity/energy in various tasks/activities/processes. • Demonstrate the process of performing periodic checks of the functioning of the equipment/machine and rectify wherever required. • Demonstrate ways to use electrical

<ul style="list-style-type: none"> • Describe the procedures to report breaches in health, safety and security. • Describe the organisation's procedures for different emergency situations and the importance of following the same. • Describe different methods of cleaning, disinfection, sterilisation, and sanitisation. • Explain the significance of personal hygiene practice including hand hygiene. • Explain the path of disease transmission. • Describe the correct method of donning and doffing of PPE. • Explain different ways of managing resources and material efficiently. • Explain common electrical problems and common practices of conserving electricity. • Explain categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics and use of different colours of dustbins. • Describe the organisation's procedures for minimising waste. • Explain waste management and methods of waste disposal. • State common sources of pollution and ways to minimise it. 	<p>equipment and appliances properly</p> <ul style="list-style-type: none"> • Demonstrate the process of disposing non-recyclable and hazardous waste as per recommended processes.
<p>Classroom Aids:</p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Relevant stationery, First Aid Kit and Equipment used in Medical Emergencies.</p>	

Module 5: Process of interacting effectively with team members and customers

Mapped to TEL/N9102 v1.0

Terminal Outcomes:

- Explain the importance of interacting effectively with superiors, colleagues and customers.
- Explain the need of respecting differences of gender and ability.

Duration: 16:00	Duration: 24:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the organisation's policies on dress code, workplace timings, workplace behaviour, performance management, incentives, delivery standards, information security, etc. • Explain the organisation's hierarchy and escalation matrix • Explain the importance of effective and different means of communication and establishing good working relationships with colleagues and superiors. • Explain the importance of helping colleagues with problems, in order to meet quality and time standards as a team. • Describe different means and methods of communication. • State different types of information that colleagues might need and the importance of providing this information in an appropriate manner. • Describe the organization's policies and procedures for working with colleagues and superiors. • Explain the importance of understanding the consequences of gender based behaviour. • Describe gender based concepts, issues and legislation • State the organization standards and guidelines to be followed for PwD and knowledge about laws, acts and provisions defined for PwD by the 	<ul style="list-style-type: none"> • Demonstrate ways to communicate professionally using different techniques such as face-to-face, telephonic and written means. • Demonstrate appropriate verbal and non-verbal communication while interacting with People with Disability (PwD).

<p>statutory bodies and the right way to use them including various medical conditions associated with PwD</p> <ul style="list-style-type: none"> • Explain the health and safety requirements at a workplace for PwD. • Describe the process of recruiting people for a particular job profile w.r.t PwD and gender. • Explain various government / private schemes and benefits available for PwD and information about various institutes working for PwD to enable in providing livelihood opportunities for PwD. 	
<p>Classroom Aids</p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Personal Protective Equipment, Hygiene Equipment and Materials like Sanitizer, Soap, Mask, etc.</p>	

Module 6: On-the-Job Training

Mapped to AI & ML – Jr. Telecom Data Analyst (TEL/Q6602 v1.0)

Mandatory Duration: 120:00	Recommended Duration: 00:00
Location: On-Site	
<p>Terminal Outcomes</p> <ol style="list-style-type: none"> 1. Explain the benefits of using AI-based data analytics tools to identify solutions to business issues and making predictions. 2. Explain different types of data used for AI analysis, such as numerical, textual and visual data. 3. Explain the application of augmented analytics or AI-driven analytics. 4. Use the relevant technologies, such as analytics, machine learning, and Natural Language Generation (NLG), to automate data management processes. 5. Use cloud server for storing large data sets. 6. Carry out the Extract, Transform and Load (ETL) data process automatically using augmented analytics to get data ready for analysis. 7. Use commission and decommission data sets as per the requirement. 8. Use the relevant AI-based statistical tools to identify, analyse, and interpret patterns, trends and actionable insights in large and complex data sets. 9. Use NLQ and NLG to query the data in machine language. 10. Use the augmented analytics to prepare relevant reports automatically with the insights derived through data analysis, along with solutions to existing business issues and predictions. 11. Create schedules and rosters for the team to ensure they understand individual work requirements. 12. Carry out routine cleaning of tools, machines and equipment. 	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Science/Electronics/ Telecom/IT and other relevant domains	1	Active Networks/IoT Domain	0	NA	Eligible for ToT program

Trainer Certification	
Domain Certification	Platform Certification
Job Role “AI – Telecom Data Analyst”, “TEL/Q6602, v1.0”, Minimum accepted score is 80%	Job Role: “Trainer”, “MEP/Q2601 v1.0”, Minimum Accepted score is 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Science/Electronics/ Telecom/IT and other relevant domains	1	Active Networks/IoT Domain	0	NA	Eligible for ToA program

Assessor Certification	
Domain Certification	Platform Certification
Job Role “ AI – Telecom Data Analyst ”, “TEL/Q6602, v1.0”, Minimum accepted score is 80%	Job Role: “ Assessor ”, “MEP/Q2701 v1.0”, Minimum Accepted score is 80%

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.
- A random audit of any candidate.

6. Method for assessment documentation, archiving, and access:

- Hard copies of the documents are stored.
- Soft copies of the documents & photographs of the assessment are uploaded/accessed from cloud Storage.
- Soft copies of the documents & photographs of the assessment are stored in the Hard Drives.

References

Glossary

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