Model Curriculum

QP Name: Information and Communication Technology (ICT) Engineer - 5G Networks

QP Code: TEL/Q6205

QP Version: 3.0

NSQF Level: 6

Model Curriculum Version: 1.0

Telecom Sector Skill Council
Estel House, 3rd Floor, Plot No:- 126, Sector 44
Gurugram, Haryana 122003

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Training Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
Country	India
NSQF Level	6
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3114.0801
Minimum Educational Qualification & Experience	Pursuing first year of 2-year PG program after completing 3-year UG degree **OR** Pursuing 1-year PG diploma after 3-year UG degree **OR** Completed 4th year UG (in case of 4-year UG) **OR** Pursuing 4th year UG (in case of 4-year UG) and continuing education with No Experience Required **OR** Completed 3-Year UG Degree with 1-year relevant experience **OR** Previous relevant Qualification of NSQF Level 5 with 3 years relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	23 Years
Last Reviewed On	30/12/2021
Next Review Date	30/12/2024
NSQC Approval Date	30/12/2021
QP Version	3.0
Model Curriculum Creation Date	30/09/2021
Model Curriculum Valid Up to Date	30/12/2024
Model Curriculum Version	1.0
Minimum Duration of the Course	600 Hours, 0 Minutes
Maximum Duration of the Course	600 Hours, 0 Minutes

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.
- Carry out preventive and corrective maintenance.
- Perform change management and upgradation activities.
- Perform POI testing.
- Report and record the test results.
- Plan work effectively, implement safety practices and optimize use of resources.
- Communicate, develop interpersonal skills and develop sensitization towards gender and person with disability.

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	**20:00**	**10:00**	**00:00**	**00:00**	**30:00**
Module 1: Role and Responsibilities of ICT Engineer	20:00	10:00	00:00	00:00	30:00
TEL/N6219– Supervise Preventive and Corrective Maintenance at ICT Nodes **NOS Version No. 2.0** **NSQF Level 6**	**50:00**	**60:00**	**40:00**	**00:00**	**150:00**
Module 2: Preventive and Corrective Maintenance at ICT nodes	50:00	60:00	40:00	00:00	150:00
TEL/N6220 – Carry out Change Management Activities at ICT Nodes **NOS Version No. 2.0** **NSQF Level 6**	**50:00**	**60:00**	**40:00**	**00:00**	**150:00**
Module 3: Change Management Activities at ICT nodes	50:00	60:00	40:00	00:00	150:00
TEL/N6221 – Undertake Point of Interconnect (POI) Testing at ICT Nodes **NOS Version No. 2.0** **NSQF Level 6**	**40:00**	**40:00**	**40:00**	**00:00**	**120:00**

Module 4: Point of Interconnect (POI) testing	40:00	40:00	40:00	00:00	120:00
TEL/N9103 – Implement effective interaction at workplace **NOS Version No. 1.0** **NSQF Level 6**	**10:00**	**20:00**	**00:00**	**00:00**	**30:00**
Module 5: Communication and Interpersonal skills	10:00	20:00	00:00	00:00	30:00
TEL/N9104 – Manage work, resources and safety at workplace **NOS Version No. 1.0** **NSQF Level 6**	**10:00**	**20:00**	**00:00**	**00:00**	**30:00**
Module 6: Working effectively and optimizing resources for a safe workplace	10:00	20:00	00:00	00:00	30:00
DGT/VSQ/N0103 Employability Skills (90 Hours) NSQF Level 5	90:00	00:00	00:00	00:00	90:00
Total Duration	**270:00**	**210:00**	**120:00**	**00:00**	**600:00**

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Module Details

Module 1: Role and Responsibilities of ICT Engineer
Bridge Module

Terminal Outcomes:

- Identify the role and responsibilities of Information and Communication Technology (ICT) Engineer.
- Explain the scope of work for ICT engineer.

Duration: *20:00*	Duration: *10:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain the role and responsibilities of ICT Engineer. - Describe the various electrical and electronic components.	- Describe the standard operating procedures (SOP) to be followed for use of tools and equipment and for performing service and minor repairs. - Describe the safety, health and environmental policies and regulations for the workplace as well as for telecom sites in general.
Classroom Aids:	
Whiteboard and markers, Chart paper and sketch pens, LCD Projector and Laptop for presentations	
Tools, Equipment and Other Requirements	
PCs/Laptops, Internet with Wi-Fi (Min 2 Mbps Dedicated), documents of standard operating procedures, code of conduct, checklists, schedules, tools and equipment, status report	

Module 2: Preventive and Corrective Maintenance at ICT Nodes
Mapped to TEL/N6219 v2.0

Terminal Outcomes:

- Prepare for preventive and corrective maintenance.
- Arrange for tools and equipment.
- Carry out preventive and corrective maintenance.
- Test effectiveness, report and record the status.

Duration: *50:00*	**Duration**: *60:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the standard operating procedures for preventive maintenance and asset layout. - Discuss the maintenance schedule with possible outage or deferral activity. - Discuss the importance of informing Network Operation Centre (NOC) prior to maintenance activities. - Explain how to calculate power consumption, power cost and site up-time. - Discuss any unusual consumptions as predicted by the power consumption pattern using appropriate methods. - List the various types of alarm, alarm codes, indicators and resolution SLAs/timelines. - Explain the various methods to identify problem and cause in network alarm. - Identify the required cables, tools, equipment and/or spares for maintenance and arrange for the same in case not readily available in coordination with logistics team. - Explain the importance of reviewing maintenance activities. - Discuss the process of escalating the unresolved issues as per organisational policy. - Expound the need of coordinating with relevant vendors to maintain interconnectivity etc. - Identify various options to rectify the faults. - Discuss any delay in fault resolution as per organizational policy.	- Prepare a sample preventive maintenance schedule and corresponding check list. - Implement process to handle tools, repair and replace the faulty equipment. - Perform diagnostic tests in identifying the cause of the alarm within the Service Level Agreement (SLA). - Demonstrate how to respond to the alarms during service fault impact analysis. - Implement appropriate steps to install equipment specific software. - Perform alarm configuration testing to check functionality in coordination with NOC team. - Implement the complete procedure to maintain passive infrastructure at ICT nodes. - Demonstrate how to identify and resolve faults within alarm SLAs. - Perform monitoring activities for work performed by the riggers and other technicians within time.

- Explain the process of effective maintenance and monitoring of the site alarm status.
- Discuss various administrative jobs like site clearance, return of test equipment, etc.
- Discuss test results with relevant teams to achieve sign-off as per organisation policy.
- Discuss the importance of updating maintenance logs, activity logs and spare tracker on time.
- Discuss the disadvantages of not working within SLA.
- Discuss the different types of required documents/records and importance of their maintenance.

Classroom Aids:

Laptop, White board, Marker, Projector

Tools, Equipment and Other Requirements

Tools/equipment like pliers, power drill, screwdrivers, spanner, cables like RJ45, RS232, Hi-speed USB, ethernet cables and optical fibres, cable ties, maintenance logs, activity logs, spare tracker, etc.

Module 3: Change Management Activities at ICT Nodes
Mapped to TEL/N6220 v2.0

Terminal Outcomes:

- Perform change management and upgradation activities.
- Perform post-change monitoring activities.
- Report and record the test results.

Duration: *50:00*	**Duration**: *60:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the organisation's ICT change management policies and processes. - Identify change requests and collect relevant information from the concerned department. - Discuss the plan and timelines depending on the criticality of changes with concerned teams and plan for any outages or unexpected impacts. - Explain the change activity and its impact on services to the customer to gain their approval. - Outline the major tasks involved in the upgradation activity to the NOC team beforehand. - List the necessary equipment such as login cables and/or spare hardware equipment to arrange for the same in case not readily available. - Discuss the issues/problems encountered during change activities and take necessary action (abort/continue). - Describe the post-completion administrative tasks performed after change activities. - Discuss results of change management activities with appropriate teams to achieve the sign-off from relevant authority. - List the required documents and records to be completed within defined timelines. - Discuss the risks/impact of not following organization's work procedures.	- Demonstrate how to create a work plan to list the dependencies. - Perform the necessary steps for accurate installation of Network Management tool or application in the system. - Employ appropriate pre-testing techniques to analyse the output of configuration changes in live environment before actual deployment. - Perform required change activities and configurations changes as per the plan and timelines. - Demonstrate how to monitor the progress of the change activities to ensure timely completion as per requirement. - Implement proper techniques to take back-up of ICT nodes before change activities. - Perform monitoring of site's alarm status to test effectiveness of the change process using appropriate methods.
Classroom Aids:	
Whiteboard and markers, Chart paper and sketch pens, LCD Projector and Laptop for presentations	
Tools, Equipment and Other Requirements	

Transmission equipment such as multiplexers, microwave radio -TDM, optical light meter, power meter, optical time domain reflectometer (OTDR), connectors, connecting cables, optical fiber, maintenance/activity logs, spare tracker, anti-static bands, anti-static packaging, organizational documents

Module 4: Point of Interconnect (POI) testing
Mapped to TEL/N6221 v2.0

Terminal Outcomes:

- Perform the steps of POI testing.
- Record the POI testing results.

Duration: *40:00*	Duration: *40:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the organization's standard operating procedures to conduct POI test. - Describe the importance of coordinating with the interconnect vendors to carry out the required activities. - Discuss the importance of following organizational reporting process. - Discuss the importance of completing required documentation in the specified format and within timelines.	- Prepare a task list for POI testing of different components along with the timelines. - Employ proper techniques to check the tools and equipment required for POI testing. - Monitor and supervise the procedure of physical, performance and logical tests of POI. - Prepare a status report of the conducted tests. - Implement steps to obtain sign-off from relevant authority.

Classroom Aids:
Whiteboard and markers, Chart paper and sketch pens, LCD Projector and Laptop for presentations

Tools, Equipment and Other Requirements
Laptop with software such as O&M software like minilink for Ericsson, NEC passo, sample of preventive and corrective maintenance formats and checklists, network reports, fresnel zone/microwave survey reports, spare hardware equipment like radio, microwave, fiber

Module 5: Communication and Interpersonal skills
Mapped to TEL/N9103 v1.0
Terminal Outcomes:

- Communicate effectively and develop interpersonal skills
- Develop sensitivity towards differently abled people.

Duration: _10:00_	Duration: _20:00_
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the importance of following the standard operating procedures of the company w.r.t. privacy, confidentiality and security with the team. - Outline the organizational structure to receive work instruction and report issues to the authorities. - Discuss the importance of having timely discussions to avoid repeated errors. - State the importance of co-ordinating with the team members to achieve smooth workflow. - Discuss the importance of respecting colleagues' personal space and resolving issues with them. - Describe the different types of disabilities and their respective issues. - State the work ethics, workplace etiquettes as well as standards and guidelines for all genders and PwD. - Define the gender-based concepts, their issues and importance of understanding these with the team. - List health and safety requirements for persons with disabilities. - Describe the rights, duties and benefits available at workplace for person with disabilities. - Explain the process of recruiting people with disabilities for a specific job. - Describe the specific ways to help persons with disabilities to overcome the challenges. - State the importance of prioritizing and achieving organizational goals over individual goals.	- Use different modes of communication as per requirement and need. - Use inclusive language irrespective of the gender/ disability of the person - Demonstrate an ideal appropriate behavior towards all genders and differently abled people. - Prepare a list of institutes and government schemes that help PwD in overcoming challenges. - Dramatize the sensitive and equal treatment of everyone at the workplace.
Classroom Aids:	
White board/ black board marker / chalk, duster, computer or Laptop attached to D projector	
Tools, Equipment and Other Requirements	
Sample of escalation matrix, organization structure.	

Module 6: Working effectively and optimizing resources for a safe workplace
Mapped to TEL/N9104 v1.0

Terminal Outcomes:

- Plan work effectively, implement safety practices and optimize use of resources

Duration: *10:00*	Duration: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- List the recent skills and technologies prevalent in the telecom industry. - Describe the importance of conducting team building workshops and trainings. - Discuss some commonly occurring problems and their solutions with the team. - State the importance of keeping the workplace clean, safe and tidy. - Outline the organizational structure to assign duties and responsibilities to each team member. - State the procedure to report any breach in the organizational health, safety and security policy and hazards to the authorities. - List the types of hazards and the emergency procedures related with them. - Discuss the importance of sanitizing and disinfecting one's work area regularly. - State the ways to guide and supervise cleaning and efficient use of resources. - Describe the significance of conforming to basic hygiene practices such as washing hands, using alcohol-based hand sanitizers. - Illustrate some ways to cope with stress, anxiety etc. with the team members. - Discuss the ways of dealing with stress and anxiety during an epidemic or a pandemic. - Explain the ways to optimize usage of resources. - Evaluate various methods of waste management and its disposal. - Define the concepts of recyclable, non-recyclable and hazardous waste. - State the importance of using appropriate colour dustbins for different types of waste. - Examine the common sources of pollution and ways to minimize it.	- Prepare a time schedule for the tasks to make the team accountable. - Demonstrate the correct way of sanitizing hands using alcohol-based hand rubs. - Demonstrate appropriate social and behavioural etiquette (greeting and meeting people, spitting/coughing/sneezing, etc.). - Employ different ways to check if equipment/machines are functioning as per requirements and report malfunctioning, if observed. - Employ ways for efficient utilization of material and water. - Use energy efficient electrical appliances and devices to ensure energy conservation.

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Discuss different methods of cleaning, disinfection, and sanitization.	

Classroom Aids:

Whiteboard and markers, Chart paper and sketch pens, LCD Projector and Laptop for presentations

Tools, Equipment and Other Requirements

Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit

Mandatory Duration: *120:00*	Recommended Duration: *00:00*
Location: On-Site	
Terminal Outcomes	

1. Create a sample preventive maintenance schedule and check list.
2. Handle tools to repair and replace the faulty equipment.
3. Conduct diagnostic tests within the Service Level Agreement (SLA).
4. Act upon the alarms during service fault impact analysis.
5. Install equipment-specific software.
6. Conduct alarm configuration testing to check functionality.
7. Demonstrate how to identify and resolve faults within alarm SLAs.
8. Carry out monitoring activities for work performed by the riggers and other technicians within time.
9. Create a work plan to list the dependencies.
10. Monitor installation of Network Management tool or application in the system to ensure it is accurate.
11. Analyse the output of configuration changes in the live environment before actual deployment.
12. Conduct and/or supervise change activities and configurations changes as per the plan and timelines.
13. Monitor the progress of the change activities to ensure timely completion as per requirement.
14. Ensure proper backup of ICT nodes is done before change activities.
15. Monitor the site's alarm status to test the effectiveness of the change process using appropriate methods.
16. Create a task list for POI testing.
17. Check the tools and equipment required for POI testing and ensure they are properly functioning.
    a. Monitor and supervise the physical, performance, and logical tests of POI.
    b. Create a status report of the conducted tests.
18. Attain sign-off from the relevant authority.

Module 8: DGT/VSQ/N0103 Employability Skills (90 Hours)
Mapped to Information and Communication Technology (ICT) Engineer - 5GNetworks

Mandatory Duration: *90:00*

Location: On-Site

S.No.	Module Name	Key Learning Outcomes	Duration (hours)
1.	Introduction to Employability Skills	• Outline the importance of Employability Skills for the current job market and future of work. • List different learning and employability related GOI and private portals and their usage. • Research and prepare a note on different industries, trends, required skills and the available opportunities.	3
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. • Demonstrate how to practice different environmentally sustainable practices.	1.5
3.	Becoming a Professional in the 21st Century	• Discuss relevant 21st century skills required for employment. • Highlight the importance of practicing 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. • Create a pathway for adopting a continuous learning mindset for personal and professional development.	5
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 understand text written in basic English. • Write a short note/paragraph / letter/e -mail using correct basic English.	10
5.	Career Development & Goal Setting	• Create a career development plan. • Identify well-defined short- and long-term goals.	4
6.	Communication Skills	• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. • Write a brief note/paragraph on a familiar topic. • Explain the importance of communication etiquette including active listening for effective communication. • Role play a situation on how to work collaboratively with others in a team.	10
7.	Diversity & Inclusion	• Demonstrate how to behave, communicate, and conduct appropriately with all genders and PwD. • Discuss the significance of escalating sexual harassment issues as per POSH act.	2.5
8.	Financial and Legal	• Discuss various financial institutions, products, and	10

		services.	
	Literacy	• Demonstrate how to conduct offline and online financial transactions, safely and securely and check passbook/statement. • Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax deductions. • Calculate income and expenditure for budgeting • Discuss the legal rights, laws, and aids.	
9.	Essential Digital Skills	• Describe the role of digital technology in day-to-day life and the workplace. • Demonstrate how to operate digital devices and use the associated applications and features, safely and securely. • Demonstrate how to connect devices securely to internet using different means. • Follow the dos and don'ts of cyber security to protect against cyber-crimes. • Discuss the significance of displaying responsible online behavior while using various social media platforms. • Create an e-mail id and follow e- mail etiquette to exchange e -mails. • Show how to create documents, spreadsheets and presentations using appropriate applications. • Utilize virtual collaboration tools to work effectively.	20
10.	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
11	Customer Service	• Classify different types of customers. • Demonstrate how to identify customer needs and respond to them in a professional manner • Discuss various tools used to collect customer feedback. • Discuss the significance of maintaining hygiene and dressing appropriately.	9
12	Getting Ready for Apprenticeship & Jobs	• Draft a professional Curriculum Vitae (CV). • Use various offline and online job search sources to find and apply for jobs. • Discuss the significance of maintaining hygiene and dressing appropriately for an interview. • Role play a mock interview. • List the steps for searching and registering for apprenticeship opportunities	8

LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS		
S 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

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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.		

Annexure

Trainer Requirements
(*Information and Communication Technology (ICT) Engineer - 5G Networks)*

Trainer Prerequisites					
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	*Specialization*	*Years*	*Specialization*	
B.E./B.Tech/ BCA/B.Sc	Science/Electronics/ Telecom/IT and other relevant fields	3	Network Management	0	NA	Eligible for ToT Program

Trainer Certification	
Domain Certification	**Platform Certification**
Job Role: "Information and Communication Technology (ICT) Engineer - 5G Networks" **"TEL/Q6205", v3.0**, Minimum accepted score is 80%	Job Role: "Trainer **(VET and Skills)**", "**MEP/Q2601" v2.0**,Minimum accepted score is 80%

Assessor Requirements (*Information and Communication Technology (ICT) Engineer - 5G Networks*)

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	*Specialization*	*Years*	*Specialization*	
B.E./B.Tech/ BCA/B.Sc	Science/Electronics/ Telecom/IT and other relevant fields	3	Network Management	0	NA	Eligible for ToA Program

Assessor Certification	
Domain Certification	**Platform Certification**
Job Role: "Information and Communication Technology (ICT) Engineer - 5G Networks" "**TEL/Q6205", v3.0**, Minimum accepted score is 80%	Job Role: "Assessor **(VET and Skills)**"", "**MEP/Q2701" v2.0**,Minimum accepted score is 80%

Trainer Requirements (Employability Skills 90 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:
Current ITI trainers	Employability Skills Training (3 days full-time course done between 2019-2022)					• have good communication skills
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)					• be well versed in English • have digital skills • have attention to detail
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)					• be adaptable • have willingness to learn

Trainer 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

Master Trainer Requirements (Employability Skills 90 hours)

Master Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	*Specialization*	*Years*	*Specialization*	
Graduate/CITS	Any discipline			3	Employability Skills curriculum training experience with an interest to train as well as orient other peer trainers	Prospective ES Master trainer should: • have good communication skills • be well versed in English
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602			3	EEE training of Management SSC (MEPSC) (155 hours)	• have basic digital skills • have attention to detail • be adaptable • have willingness to learn • be able to grasp concepts fast and is creative with teaching practices and likes sharing back their learning with others

Master Trainer Certification	
Domain Certification	**Platform Certification**
Certified in 90-hour Employability NOS (2022), with a minimum score of **90%.** **OR** Certified in 120-hour Employability NOS (2022), with a minimum score of **90%**	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
   - 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
   - Assessor must be ToA certified & trainer must be ToT Certified
   - Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location
   - 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:
   - Surprise visit to the assessment location
   - Random audit of the batch
   - Random audit of any candidate

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

Assessment Strategy (Employability Skills 90 hours)

The trainee will be tested for the acquired skill, knowledge and attitude through formative/summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.

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References

Glossary

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

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
SOP	Standard Operating Procedures
CRM	Customer Relationship Management
POI	Point of Interconnectivity
NOC	Network Operation Centre
SLA	Service Legal Agreement
PM	Preventive Maintenance
OHS	Occupational Health and Safety
PwD	Persons with Disabilities
ICT	Information and Communication Technology
AT	Acceptance Testing
ES	Employability Skills