



Model Curriculum

QP Name: Telecom Terminal Equipment Application Developer (Native)

QP Code: TEL/Q2301

QP Version: 3.0

NSQF Level: 4

Model Curriculum Version: 1.0

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Training Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2153.0102
Minimum Educational Qualification & Experience	<p>12th grade pass OR Completed 2nd year of 3-year diploma (after 10th) OR Pursuing 2nd year of 3-year regular Diploma (after 10th) OR 10th grade pass with two years of any combination of NTC/NAC/CITS or equivalent OR 8th pass plus 2-year NTC plus 1-Year NAC plus 1-Year CITS OR 10th grade pass and pursuing continuous schooling With No Experience required OR Previous relevant Qualification of NSQF Level 3.0 with 3-year relevant experience</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	15 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	540 Hours, 0 Minutes
Maximum Duration of the Course	540 Hours, 0 Minutes

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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.

- Implementation of document structures, objects, and program flow.
- Execution of CSS3 and JavaScript in applications.
- Carry-out configuration of the native application platform suite/tools.
- Execution of principles and components of UI Design, Layouts, and controls.
- Demonstrate handling of data, files, streams, and database operations.
- Implementation of process lifetime management and navigation in an application.
- Development of Value-Added Services (VAS) Applications.
- Testing and publishing the android applications.
- Organizing work and resources as per health and safety standards.
- Communication, interpersonal skills, and sensitization towards gender and persons with disability (PwD).

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 Telecom Terminal Equipment Application Developer (Native)	20:00	10:00	00:00	00:00	30:00
TEL/N2304 – Develop Applications in HTML5 with JavaScript and Cascading Style Sheets (CSS3) NOS Version No. 2.0 NSQF Level 4	50:00	60:00	40:00	00:00	150:00
Module 2: Create Programming in HTML 5 with JavaScript and Cascading Style Sheets (CSS3)	50:00	60:00	40:00	00:00	150:00
TEL/N2305 – Configure Native Applications using HTML5 and JavaScript NOS Version No. 2.0 NSQF Level 4	30:00	50:00	40:00	00:00	120:00
Module 3: Native Applications using HTML5 and JavaScript	30:00	50:00	40:00	00:00	120:00

TEL/N2306 – Test and Publish Native Phone Applications NOS Version No. 2.0 NSQF Level 4	30:00	50:00	40:00	00:00	120:00
Module 4: Testing and Publishing Native Phone Applications	30:00	50:00	40:00	00:00	120:00
TEL/N9101 – Organise Work and Resources as per Health and Safety Standards NOS Version No. 1.0 NSQF Level 4	10:00	20:00	00:00	00:00	30:00
Module 5: Plan Work Effectively, Optimise Resources and Implement Safety Practices	10:00	20:00	00:00	00:00	30:00
TEL/N9102 – Interact Effectively with Team Members and Customers NOS Version No. 1.0 NSQF Level 4	10:00	20:00	00:00	00:00	30:00
Module 6: Communication and interpersonal skills	10:00	20:00	00:00	00:00	30:00
DGT/VSQ/N0102 : Employability Skills (60 Hours)	60:00	00:00	00:00	00:00	60:00
Total Duration	210:00	210:00	120:00	00:00	540:00

Module Details

Module 1: Role and Responsibilities of Telecom Terminal Equipment Application Developer (Native) Bridge Module

Terminal Outcomes:

- Explain the role and responsibilities of Terminal Equipment Application Developer (Native).

Duration: 20:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the role and responsibilities of Terminal Equipment Application Developer (Native). • Identify the various electrical and electronic components and their functionalities. • Describe the standard operating procedures (SOP) to be followed. • Identify the safety, health and environmental policies and regulations for the workplace as well as for telecom sites in general. 	
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	

Module 2: Create Programming in HTML 5 with JavaScript and Cascading Style Sheets (CSS3)

Mapped to TEL/N2304 v2.0

Terminal Outcomes:

- Demonstrate the process of implementation and manipulation document structures and objects.
- Carry-out implementation of program flow.
- Show how to access and secure data.
- Perform execution of CSS3 in applications.
- Perform execution of JavaScript in Application Development.

Duration: 50:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the basics of application development platforms and environment. • Explain software development process and lifecycle. • Explain how to use JavaScript Object Notation (JSON) and Extensive Markup Language (XML) data. • Discuss how to serialize, deserialize, and transmit data. • Analyse application/User Interface (UI) requirements and logic/control flow. • Explain how to search elements by using CSS selectors and jQuery. • Explain how to refine the code for maintainability and extensibility. • Discuss how to provide offline support to Web Applications. 	<ul style="list-style-type: none"> • Demonstrate how to create document structure using different HTML tags. • Implement steps to create User Interface (UI) elements. • Perform HTML elements addition and modification using programs. • Demonstrate how to execute media controls, HTML canvas, Scalable Vector Graphics (SVG) and HTML5 Application Programming Interface (APIs) to create interactive pages. • Implement proper steps to create variables, objects, methods using JavaScript and call back in the program. • Perform creation and modification of control statements of the application. • Demonstrate how to manage events exposed by Document Object Model (DOM) and exception handling. • Implement steps to create a web worker process. • Perform validation of user input using HTML5 elements and Java Script. • Demonstrate how to use style HTML text properties and box properties. • Implement steps to create a flexible content layout with an animated and adaptive UI. • Demonstrate how to use selectors to structure Cascading Style Sheets (CSS3) file. • Perform the native application suite/tools configuration for application development.

	<ul style="list-style-type: none">• Demonstrate how to create adaptive and animated UI and generics in the application.• Implement steps to use web sockets to execute real-time communications.• Demonstrate how to install and set up the emulator to perform functionality/UI testing.
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)	

Module 3: Native Applications using HTML5 and JavaScript

Mapped to TEL/N2305 v2.0

Terminal Outcomes:

- Configuration of the native application platform suite/tools.
- Execution of principles and components of UI Design, Layouts, and controls.
- Demonstrate handling of data, files, streams, and database operations.
- Implementation of process lifetime management and navigation in an application.
- Show how to implement Value Added Services (VAS) Applications.

Duration: 30:00	Duration: 50:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Analyse the required native application development tools/suite. • Discuss different types of user interfaces and applications of SQL. • Discuss the importance of working with controls specific to Operating Systems (OS) platforms. • Identify the steps required to navigate store applications. • Discuss methods of database designing and handling security issues. 	<ul style="list-style-type: none"> • Demonstrate how to install native application suite/tools and the emulator. • Implement steps to configure required changes for the application platform. • Prepare User Interface (UI) design and navigation flow. • Demonstrate how to develop layout controls and templates for UI design. • Perform implementation of tiles, live tiles, secondary tiles, and badge notifications. • Demonstrate how to execute toast notifications for windows platform and iOS/android specific interface designs. • Implement steps to create response to mouse, touch and other actions. • Perform designing and execution of a data access strategy. • Demonstrate how to enable file and input streams handling for applications. • Implement steps to read and write data on notes file. • Prepare and manage queries on Structured Query Language (SQL) lite. • Perform evaluation of different Product Lifecycle Management (PLM) States. • Demonstrate how to execute the appropriate data state management. • Perform appropriate steps to execute semantic zoom for specific mobile platform/OS. • Demonstrate how to add VAS elements to the application so as to execute specific features of Android/iOS, network components and controls.

- Implement steps to customise application to support General Packet Radio services (GPRS) and integrate mails.

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)

Module 4: Testing and Publishing Native Phone Applications *Mapped to TEL/N2306 v2.0*

Terminal Outcomes:

- Demonstrate how to test and secure the native phone applications.
- Implement the procedure of publishing the native phone applications.

Duration: 30:00	Duration: 50:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the basic concepts of networking, services and background processing. • Explain how to identify testing methodology for android applications. • Explain the basics and benefits of testing android application kit. • Discuss security policies of android and organisation. • Discuss how to resolve issues/problems that may occur after troubleshooting of the application. • Analyse the importance of getting application certification. 	<ul style="list-style-type: none"> • Demonstrate how to develop different cases and scenarios for testing purpose. • Implement steps to conduct functional, compatibility and performance testing of the application using different mobile phones. • Perform network testing to verify connectivity parameters. • Demonstrate how to conduct User Interface (UI/UX) testing using various parameters. • Perform application security test by analysing various security checks. • Implement steps to configure options in the application manifest file for publishing it on app store. • Perform application deployment and publishing on various platforms.
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)	

Module 5: Plan Work Effectively, Optimise Resources and Implement Safety Practices Mapped to TEL/N9101 v1.0

Terminal Outcomes:

- Explain how to plan work effectively, implement safety practices and optimise use of resources.

Duration: 10:00	Duration: 20:00
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • List the recent skills and technologies prevalent in the telecom industry. • Discuss the commonly occurring problems with their causes and solutions. • State the importance of keeping the workplace clean, safe and tidy. • List different types of hazards and the procedure to report it to the supervisor. • List the precautionary steps one needs to follow while handling hazardous materials. • State the importance of participating in fire drills and other safety workshops. • Discuss the significance of conforming to basic hygiene practices such as washing hands, using alcohol-based hand sanitizers. • List the different methods of cleaning, disinfection, sanitization, etc. • Discuss the importance of self-quarantine or self-isolation. • Explain the path of disease transmission. • Discuss organizational hygiene and sanitation guidelines and ways of reporting breaches/gaps, if any. • Explain the ways to optimize usage of resources. • Discuss various methods of waste management and disposal. • List the different categories of waste for the purpose of segregation. • Differentiate between recyclable and non-recyclable waste. • State the importance of using appropriate color dustbins for different types of waste. • Discuss the common sources of pollution and ways to minimize it. 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Prepare a time schedule to complete the tasks on the given time. • Demonstrate the use of safety equipment such as goggles, gloves, ear plugs, shoes, etc. • Demonstrate the correct postures while working and handling hazardous materials at the workplace. • Demonstrate how to evacuate the workplace in case of an emergency. • Show how to sanitize and disinfect one's work area regularly. • Demonstrate the correct way of washing hands using soap and water. • Demonstrate the correct way of sanitizing hands using alcohol-based hand rubs. • Display the correct way of wearing and removing PPE such as face masks, hand gloves, face shields, PPE suits, etc. • Demonstrate warning labels, symbols and other related signages. • Perform basic checks to identify any spills and leaks and that need to be plugged /Stopped. • Demonstrate different disposal techniques depending upon different types of waste. • Employ different ways to clean and check if equipment/machines are functioning as per requirements and report malfunctioning, if observed. • Demonstrate ways for efficient utilization of material and water.
Classroom Aids	

White board/ black board marker / chalk, Duster, Computer or Laptop attached to LCD projector

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

Terminal Outcomes:

- Discuss how to communicate effectively and develop interpersonal skills.
- Explain the importance of developing sensitivity towards differently abled people.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of following the standard operating procedures of the company w.r.t priority, confidentiality and security. • Explain the standard procedure of communication and escalations of issues at the workplace. • Discuss the importance of timely rectification of issues. • State the importance of coordinating and resolving conflicts with the team members to achieve smooth workflow. • Discuss about the different types of disabilities with their respective issues. • List health and safety requirements for persons with disability. • Describe the rights, duties and benefits available at workplace for person with disability. • Explain the process of recruiting people with disability for a specific job. • Discuss the specific ways to help people with disability to overcome the challenges. 	<ul style="list-style-type: none"> • Use different modes of communication as per requirement and need. • Prepare a sample report of the commonly occurring errors and their solutions. • Demonstrate the use of gender and PwD (Person with Disability) inclusive language. • Prepare a list of institutes and government schemes that help PwD in overcoming challenges. • Demonstrate the ideal behaviour with a PwD in an organization.
Classroom Aids	
Whiteboard and Markers, Chart paper and sketch pens, LCD Projector and Laptop for presentations	
Tools, Equipment and Other Requirements	
Sample of escalation matrix, organisation structure	

Module 7: On-the-Job Training

Mapped to Telecom Terminal Equipment Application Developer (Native)

Mandatory Duration: 120:00	Recommended Duration: 00:00
Location: On-Site	
Terminal Outcomes	
<ol style="list-style-type: none"> 1. Prepare a document structure using different HTML tags. 2. Create User Interface (UI) elements. 3. Use media controls, HTML canvas, Scalable Vector Graphics (SVG) and HTML5 Application Programming Interface (APIs) to make the app interactive. 4. Manage and create variables, objects, methods using JavaScript and call backs. 5. Create and manage events using Document Object Model (DOM) and exception handling. 6. Create a web worker process. 7. Validate user input using HTML5 elements and JavaScript. 8. Use HTML text and styles. 9. Create a flexible content layout with an animated and adaptive UI. 10. Create selectors using a Cascading Style Sheets (CSS3) file. 11. Configure native application suite/tools. 12. Develop an adaptive and animated UI and generics. 13. Use web sockets to execute real-time communications. 14. Install and set up the emulator to perform functionality/UI testing. 15. Configure native application suite/tools and the emulator. 16. Develop and test the User Interface (UI) design, layout controls and templates for the navigation flow. 17. Execute toast notifications for windows platform and iOS/android specific interface designs. 18. Create a response to touch and other actions. 19. Incorporate file and input streams handling to read and write data on notes file. 20. Manage/create queries on Structured Query Language (SQL) lite. 21. Add VAS elements to the application. 22. Customise the application to support General Packet Radio services (GPRS) and mails. 23. Test the application using different scenarios. 24. Perform functional, compatibility, network, security, and performance testing of the application using different mobile phones. 25. Conduct User Interface (UI/UX) testing using various parameters. 26. Configure and prepare the application manifest file. 27. Deploy and publish the application on various platforms. 	

Module 8: DGT/VSQ/N0102 Employability Skill (60 hours)

Mapped to Telecom Terminal Equipment Application Developer (Native)

Mandatory Duration: 60:00			
Location: On-Site			
S.No.	Module Name	Key Learning Outcomes	Duration (hours)
1.	Introduction to Employability Skills	<ul style="list-style-type: none"> 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
2.	Constitutional values - Citizenship	<ul style="list-style-type: none"> 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
3.	Becoming a Professional in the 21st Century	<ul style="list-style-type: none"> 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
4.	Basic English Skills	<ul style="list-style-type: none"> Show how to use basic English sentences for every day 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
5.	Career Development & Goal Setting	<ul style="list-style-type: none"> Create a career development plan with well-defined short- and long-term goals. 	2
6.	Communication Skills	<ul style="list-style-type: none"> 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
7.	Diversity & Inclusion	<ul style="list-style-type: none"> 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
8.	Financial and Legal Literacy	<ul style="list-style-type: none"> 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
9.	Essential Digital	<ul style="list-style-type: none"> Describe the role of digital technology in today's life. 	10

	Skills	<ul style="list-style-type: none"> • Demonstrate how to operate digital devices and use the associated applications and features, safely and securely. • Discuss the significance of displaying responsible online behaviour while browsing, using various social media platforms, e-mails, etc., safely and securely. • Create sample word documents, excel sheets and presentations using basic features. • Utilize virtual collaboration tools to work effectively. 	
10.	Entrepreneurship	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Describe the significance of analyzing 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
12	Getting Ready for Apprenticeship & Jobs	<ul style="list-style-type: none"> • 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

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
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 (*Telecom Terminal Equipment Application Developer (Native)*)

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Science/Telecom /Electronics/IT and other related fields	1	Telecom/IT OR Programming in following languages: C, C++, Java, HTML etc.	0	NA	Eligible for ToT program

Trainer Certification	
Domain Certification	Platform Certification
Job Role: “Telecom Terminal Equipment Application Developer (Native)” “TEL/Q2301 v3.0”, Minimum accepted score is 80%.	Job Role: “Trainer (VET and Skills)”, “MEP/Q2601” v2.0, Minimum accepted score is 80%.

Assessor Requirements (*Telecom Terminal Equipment Application Developer (Native)*)

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Science/Telecom/ Electronics/IT and other related fields	1	Telecom/IT OR Programming in following languages: C, C++, Java, HTML etc.	0	NA	Eligible for ToA program

Assessor Certification	
Domain Certification	Platform Certification
Job Role: “Telecom Terminal Equipment Application Developer (Native)” “TEL/Q2301 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 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: <ul style="list-style-type: none"> • 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)					

Trainer Certification	
Domain Certification	Platform Certification
Certified in 60-hour Employability NOS (2022), with a minimum score of 80% OR Certified in 120-, 90-hour Employability NOS (2022), with a minimum score of 80%	NA

Master Trainer Requirements (Employability Skills 60 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: <ul style="list-style-type: none"> • have good communication skills • be well versed in English • have basic digital skills
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602)			3	EEE training of Management SSC (MEPSC) (155 hours)	<ul style="list-style-type: none"> • 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 60-hour Employability NOS (2022), with a minimum score of 90% . OR Certified in 120-, 90-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 60 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.

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
JSON	JavaScript Object Notation
IDE	Integrated Development Environment
SDK	Software Development Kit
OOP	Object-Oriented Program
AVD	Android Virtual Devices
UI	User Interface
XMI	Extensible Markup Language
CSS	Cascading Style Sheets
VAS	Value Added Services
SQL	Structured Query Language
GUI	Graphic User Interface
SMS	Short Messaging Service
API	Application Programming Interface
OS	Operating Systems
GPRS	General Packet Radio services
PLM	Product Lifecycle Management
DOM	Document Object Model
SVG	Scalable Vector Graphics
ES	Employability Skills