Android App Development

Model Curriculum

QP Name: Telecom Terminal Equipment Application Developer (Android)

QP Code: TEL/Q2300

QP Version: 5.0

NSQF Level: 4

Model Curriculum Version: 1.0

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

Table of Contents

Training Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO -2015/2153.0101
Minimum Educational Qualification & Experience	11th grade pass **OR** Completed 1st year of 3- year diploma (after 10th) and pursuing regular diploma **OR** 10th grade pass and pursuing continuous schooling **OR** 10th Grade Pass with 2-year relevant experience **OR** Previous relevant Qualification of NSQF Level 3 with minimum education as 5th Grade pass with 2-year relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	30/12/2021
Next Review Date	30/12/2024
NSQC Approval Date	30/12/2021
QP Version	5.0
Model Curriculum Creation Date	30/12/2021
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

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.

- Create android project using android application development environment.
- Create and manage databases.
- Integrate messaging/networking activities and location-based services.
- Develop the android services.
- Test and publish the android applications.
- Organize work and resources as per health and safety standards.
- Inclusive 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 (Android)	20:00	10:00	00:00	00:00	30:00
TEL/N2300 – Setup Android Application Development Environment with User Interface **NOS Version No. 3.0** **NSQF Level 4**	**50:00**	**60:00**	**40:00**	**00:00**	**150:00**
Module 2: Android Application Development Environment	50:00	60:00	40:00	00:00	150:00
TEL/N2301 – Develop Android Value Added Services (VAS) Application **NOS Version No. 3.0** **NSQF Level 4**	**30:00**	**50:00**	**40:00**	**00:00**	**120:00**
Module 3: Android Value Added Services (VAS) Application	30:00	50:00	40:00	00:00	120:00
TEL/N2302 – Test and Publish Android Application	**30:00**	**50:00**	**40:00**	**00:00**	**120:00**

NOS Version No. 3.0 **NSQF Level 4**					
Module 4: Testing and Publishing Application	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 (Android)
Bridge Module

Terminal Outcomes:

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

Duration: *20:00*	Duration: *10:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Describe the size and scope of the Telecom industry and its various sub-sectors. - Explain the role and responsibilities of Terminal Equipment Application Developer. - Discuss the various opportunities for Terminal Equipment Application Developer in the Telecom industry. - 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.	- Performs unit tests for the codes written. - Ensures that adequate security measures are taken to protect valuable data used in the app by unauthorized external agents. - Explain how to create user interfaces, write business logic for events and activities, and define business logic in apps.
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	

Module 2: Android Application Development Environment
Mapped to TEL/N2300 v3.0

Terminal Outcomes:

- Demonstrate how to setup android application development environment.
- Show how to create android project.
- Design and develop the android app.

Duration: *50:00*	Duration: *60:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss various fundamentals such as activity, activity lifestyle, style inheritance, styles and themes. - Discuss various Object-Oriented Program (OOP) concepts of Java. - Discuss key features of various versions of android operating system used in devices. - Identify required tools and software for Android Application development. - Discuss the role of different files and folders used in the project. - Explain how to enhance user activities by using styles and themes. - Explain customization of app using specific components, notifications, etc. - Discuss different types of layouts, intent objects and filters.	- Demonstrate how to install Java Development Kit (JDK) and Integrated Development Environment (IDE) and android Software Development Kit (SDK) packages. - Perform android development tool/framework configuration to develop Android Virtual Devices (AVD). - Prepare new android project, in the recommended software, based on project details and requirements. - Demonstrate how to design layout in XML based on layout properties as per requirements. - Employ appropriate methods to create interlinked activities and intents. - Implement steps to generate hierarchical code and code for various interactivities/events using elements/controls. - Demonstrate how to create different components for an android app and integrate different menus to develop interactivity. - Perform steps to link the code to XML layout file. - Implement steps for adding multimedia to the app to use the android features. - Demonstrate how to test the functionality and User Interface (UI) of the app.
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), Java Development Kit (JDK), Integrated Development Environment (IDE), Software Development Kit (SDK)	

Module 3: Android Value Added Services (VAS) Application
Mapped to TEL/N2301 v3.0

Terminal Outcomes:

- Implement ways to manage database.
- Demonstrate how to integrate messaging and networking activities.
- Show how to integrate location-based services.
- Develop the android services.

Duration: *30:00*	Duration: *50:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss android application development process and networking concepts. - Identify database and data persistence tools and techniques. - Explain how to perform loading and sharing of user preferences. - Discuss how to use the Structured Query Language (SQL) commands in the database. - Discuss types and applications of android content provider. - Discuss with content providers/resolvers to deliver an interface to the application data. - Discuss the application requirements to use the required type of service. - Discuss how to bind an activity and a service by establishing communication between them. - Explain how to update User Interface (UI) from a runnable block. - Discuss the usage of e-mails, SMS, and Bluetooth.	- Demonstrate how to execute data persistence. - Implement steps to perform different types of data storage using storage techniques. - Perform appropriate steps for database and application integration. - Demonstrate how to change layout, add Graphic User Interface (GUI) and create code to send/receive Short Messaging Service (SMS) and email service. - Perform modifications in code for sending/receiving SMS using intents. - Demonstrate how to integrate the application using Bluetooth technology, text files, binary data and access web services. - Employ proper techniques for integrating web services with synchronous and asynchronous calls. - Demonstrate how to develop a Google Maps project and add Application Programming Interface (API) key to the app. - Implement steps to add markers to display map with location synchronization. - Perform geographical coding and reverse geocoding integration on map interface. - Employ appropriate steps for application execution and deployment. - Demonstrate how to implement methods using required service. - Implement necessary steps to perform tasks such as long-running tasks, repeated tasks, asynchronous tasks on a separate thread repeatedly.

	• Perform steps to minimise battery drain by efficient data transfer.

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 Android Application
Mapped to TEL/N2302 v3.0

Terminal Outcomes:

- Demonstrate how to test and secure the android applications.

- Implement the procedure of publishing the android applications.

Duration: *30:00*	Duration: *50:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain the basic concepts of networking, services and background processing. - Explain how to evaluate testing methodology for android applications. - Explain the basics and benefits of testing android application kit. - Discuss best practices implementation for application security. - Discuss how to resolve issues/problems that may occur after troubleshooting of the application. - Discuss the steps required for application release on app store. - Analyse the importance of Google licensing for the developed applications.	- 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 for configuration of Google play store components to upload application in play store console. - Perform application deployment and publishing on android platform.
Classroom Aids:	
Whiteboard and markers, chart paper and sketch pens, LCD Projector and Laptop for presentations.	
Tools, Equipment and Other Requirements	
Mobile phones, 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*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- 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.	- 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

Module 6: Communication and interpersonal skills
Mapped to TEL/N9102 v1.0

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**
- 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.	- 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 behavior 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-Job-Training
Mapped to Telecom Terminal Equipment Application Developer (Android)

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

Terminal Outcomes

1. Install Java Development Kit (JDK) and Integrated Development Environment (IDE) and android Software Development Kit (SDK) packages.
2. Configure Android development tool/framework to develop Android Virtual Devices (AVD).
3. Create a new Android project as per project specifications and requirements.
4. Design the layout in XML based on layout properties as per requirements.
5. Create a hierarchical code and code for various interactivities/events.
6. Create different components for an Android app and integrate different menus to develop interactivity.
7. Add multimedia to the app to use the android features.
8. Test the functionality and User Interface (UI) of the app and execute data persistence.
9. Integrate the database and application and test it.
10. Dry run and test the code to check for sending/receiving SMS.
11. Integrate the application using Bluetooth technology, text files, binary data and access web services.
12. Integrate Google Maps and add the Application Programming Interface (API) key to the app.
13. Perform geographical coding and reverse geocoding for the app.
14. Ensure that the application execution and deployment is optimum and proficient.
15. Implement methods using the required service.
16. Perform checks to test long-running tasks, repeated tasks, asynchronous tasks to test their functioning.
17. Ensure minimum battery drainage by the application.
18. Create different cases and scenarios for testing.
19. Perform functional, compatibility, network, security and performance testing of the application.
20. Conduct User Interface (UI/UX) testing using different parameters.
21. Configure Google play store components to upload the application in play store console.
22. Deploy and publish on the Android platform.

Module 8: DGT/VSQ/N0102 Employability Skill (60 hours)
Mapped to Telecom Terminal Equipment Application Developer (Android)

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
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
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
4.	Basic English Skills	• 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	• Create a career development plan with well-defined short- and long-term goals.	2
6.	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
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
8.	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.	5

		• Discuss the legal rights, laws, and aids.	
9.	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. • Utilize virtual collaboration tools to work effectively.	10
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	• 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	• 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 (Android)*

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 (Android)" "TEL/Q2300 v3.0", Minimum accepted score is 80%.	Job Role: "Trainer", "MEP/Q2601 v1.0", Minimum accepted score is 80%.

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

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 (Android)" "TEL/Q2300 v3.0", Minimum accepted score is 80%.	Job Role: "Assessor", "MEP/Q2701" v1.0, 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: • 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: • have good communication skills • be well versed in English • 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
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602			3	EEE training of Management SSC (MEPSC) (155 hours)	

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.
   - 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 is 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
JDK	Java Development Kit
IDE	Integrated Development Environment
SDK	Software Development Kit
OOP	Object-Oriented Program
AVD	Android Virtual Devices
UI	User Interface
XML	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
ES	Employability Skills