Qualification Pack

Telecom Terminal Equipment Application Developer (Android)

QP Code: TEL/Q2300

Version: 5.0

NSQF Level: 4

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

Contents

TEL/Q2300: Telecom Terminal Equipment Application Developer (Android)

Brief Job Description

The individual is responsible for designing and developing advanced customised applications for the android platform that can be used by various smartphones and/or tablets running on android operating system. The incumbent would create user interfaces, write business logic for events and activities defined by the applications, test the code for robustness, including edge cases, usability and general reliability, perform bug-fixing and improve applications performance.

Personal Attributes

The individual should be customer oriented, self-motivated, effective communicator and a team player with strong analytical and problem-solving skills. The individual should be able to apply practical judgement to successfully perform the assigned responsibilities under high pressure situations.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N2300: Setup Android Application Development Environment with User Interface

2. TEL/N2301: Develop Android Value Added Services (VAS) Application

3. TEL/N2302: Test and Publish Android Application

4. TEL/N9101: Organize Work and Resources as per Health and Safety Standards

5. TEL/N9102: Interact Effectively with Team Members and Customers

6. DGT/VSQ/N0102: Employability Skills (60 Hours)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
Country	India
NSQF Level	4

Credits	18
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 Years of experience of relevant exeprience OR Previous relevant Qualification of NSQF Level (3 with minimum education qualification as 5th Grade pass) with 2 Years of experience of relevant exeprience
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	NA
Next Review Date	30/12/2024
NSQC Approval Date	30/12/2021
Version	5.0
Reference code on NQR	2022/TEL/TSSC/07006
NQR Version	3

TEL/N2300: Setup Android Application Development Environment with User Interface

Description

This OS unit is about setting up the android application development environment and creating the user interface for android application.

Scope

The scope covers the following :

- Setup android application development environment
- Create android project
- Design and develop the android applications

Elements and Performance Criteria

Set up android application development environment

To be competent, the user/individual on the job must be able to:

PC1.   list the various tools and software required for developing an Android Application

PC2.   perform installation of Java Development Kit (JDK) and Integrated Development Environment (IDE) like Eclipse IDE, Android Studio etc. and android Software Development Kit (SDK) packages

PC3.   configure android development tool and framework to create Android Virtual Devices (AVD)

Create android project

To be competent, the user/individual on the job must be able to:

PC4.   interpret key features for various versions of the android operating system used in devices

PC5.   interpret the project details as well as requirements and create a new android project in the recommended software

PC6.   identify the role of files and folders like source code files (.src), android directories, generations, assets, resources etc. in the project

Design and develop the android application

To be competent, the user/individual on the job must be able to:

PC7.   design the layout using the defined properties of the layout like width, height, background etc. in XML based on the requirements

PC8.   develop various components of an android applications such as screen, views and groups, images etc.

PC9.   develop interlinked activities and intents

PC10.   create hierarchical code using concepts such as inheritance

PC11.   apply styles and themes to the user activities

PC12.   integrate different types of menus into the applications to build interactivity

PC13.   create the code for various interactivities using User Interface (UI) elements/controls and for events

PC14. link the code to XML layout file using an activity

PC15. customise the app using specific user-defined/custom components, notifications, etc.

PC16. perform steps to add multimedia to the application and program it to use the android camera and location

PC17. perform testing of the functionality and UI of the app using different emulators

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. types and characteristics of various mobile operating systems

KU2. implementation procedure of JDK and IDE

KU3. fundamentals of SDK and its tools

KU4. procedure to create AVD

KU5. components of android project and applications

KU6. components of user interface

KU7. types of layouts like absolute layout, linear layout, table layout, relative layout, frame layout and scroll

KU8. types of intent objects and filters in android

KU9. concept of activity and activity lifecycle

KU10. concept of style inheritance

KU11. fundamentals of styles and themes

KU12. Object Oriented Program (OOP) concepts in Java (Classes and Objects, Multi-threading, Inheritance, Abstract Window Toolkit (AWT), Networking etc.)

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret manual and other materials

GS2. prioritise tasks to achieve efficiency

GS3. communicate in the local language (preferable)

GS4. work systematically with attention-to-detail

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Set up android application development environment	**6**	**11**	**-**	**1**
PC1. list the various tools and software required for developing an Android Application	2	4	-	1
PC2. perform installation of Java Development Kit (JDK) and Integrated Development Environment (IDE) like Eclipse IDE, Android Studio etc. and android Software Development Kit (SDK) packages	2	3	-	-
PC3. configure android development tool and framework to create Android Virtual Devices (AVD)	2	4	-	-
Create android project	**8**	**12**	**-**	**3**
PC4. interpret key features for various versions of the android operating system used in devices	2	4	-	1
PC5. interpret the project details as well as requirements and create a new android project in the recommended software	3	4	-	1
PC6. identify the role of files and folders like source code files (.src), android directories, generations, assets, resources etc. in the project	3	4	-	1
Design and develop the android application	**21**	**32**	**-**	**6**
PC7. design the layout using the defined properties of the layout like width, height, background etc. in XML based on the requirements	3	4	-	-
PC8. develop various components of an android applications such as screen, views and groups, images etc.	1	2	-	-
PC9. develop interlinked activities and intents	2	2	-	-
PC10. create hierarchical code using concepts such as inheritance	1	3	-	-
PC11. apply styles and themes to the user activities	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. integrate different types of menus into the applications to build interactivity	2	3	-	-
PC13. create the code for various interactivities using User Interface (UI) elements/controls and for events	2	3	-	1
PC14. link the code to XML layout file using an activity	2	3	-	1
PC15. customise the app using specific user-defined/custom components, notifications, etc.	3	3	-	1
PC16. perform steps to add multimedia to the application and program it to use the android camera and location	2	4	-	1
PC17. perform testing of the functionality and UI of the app using different emulators	2	3	-	1
NOS Total	**35**	**55**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2300
NOS Name	Setup Android Application Development Environment with User Interface
Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
NSQF Level	4
Credits	5
Version	4.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

TEL/N2301: Develop Android Value Added Services (VAS) Application

Description

This OS unit is about creating and managing databases, working with content providers, messaging services, e-mail services, networking services, location based services and creating customised android services.

Scope

The scope covers the following :

- Manage data
- Integrate messaging and networking activities
- Integrate location-based services
- Develop the android services

Elements and Performance Criteria

Manage data

To be competent, the user/individual on the job must be able to:

PC1. implement data persistence to prevent loss of data

PC2. load and share the user preferences

PC3. perform storage of data on cloud and on internal storage, external storage (SD Card) and static resources

PC4. apply the Structured Query Language (SQL) commands to select, insert, update or delete data in the database

PC5. execute steps to integrate the database with proper application

PC6. instruct content providers and resolvers to provide an interface to the application data

Integrate messaging and networking activities

To be competent, the user/individual on the job must be able to:

PC7. implement changes in layout, add Graphic User Interface (GUI) and create necessary code for sending and receiving Short Messaging Service (SMS)

PC8. send SMS using intent and also setup SMS receiving

PC9. implement changes in layout, add GUI and create necessary code for e-mail service

PC10. integrate application with Bluetooth technology, text files, binary data and access web services, if required

PC11. perform synchronous and asynchronous calls for integrated web services

Integrate location-based services

To be competent, the user/individual on the job must be able to:

PC12. create a Google Maps project

PC13. obtain the Google Maps Application Programming Interface (API) key and add to the application

PC14. display the map after adding markers and synchronise it to location

PC15. integrate geographical coding and reverse geocoding on map interface

PC16. deploy and run the application

Develop the android services

To be competent, the user/individual on the job must be able to:

PC17. interpret the application requirements to determine the type of service to be used

PC18. create the required service and implement the methods

PC19. execute various tasks such as long running tasks, repeated tasks, asynchronous tasks on a separate thread repeatedly

PC20. ensure to establish communication between an activity and a service and bind them

PC21. implement efficient data transfer to minimise battery drain

PC22. update User Interface (UI) from a runnable block

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. android application development process

KU2. database and data persistence tools and techniques

KU3. android local data storage techniques

KU4. process to create a database

KU5. concepts and application of SQL

KU6. types and application of content provider in android

KU7. usage of e-mails, SMS, and Bluetooth

KU8. concept of maps for android

KU9. features and working of the map

KU10. concepts of geo coding and reverse geo coding

KU11. fundamentals of services and background processing

KU12. fundamentals of networking

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret manual and other materials

GS2. interpret application requirements

GS3. communicate in the local language (preferable)

GS4. make the application user friendly and pleasing to eyes

GS5. analyse and interpret problems and create codes

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Manage data	**10**	**14**	**-**	**3**
PC1. implement data persistence to prevent loss of data	2	3	-	1
PC2. load and share the user preferences	2	3	-	-
PC3. perform storage of data on cloud and on internal storage, external storage (SD Card) and static resources	-	2	-	1
PC4. apply the Structured Query Language (SQL) commands to select, insert, update or delete data in the database	2	3	-	-
PC5. execute steps to integrate the database with proper application	2	3	-	1
PC6. instruct content providers and resolvers to provide an interface to the application data	2	-	-	-
Integrate messaging and networking activities	**7**	**14**	**-**	**3**
PC7. implement changes in layout, add Graphic User Interface (GUI) and create necessary code for sending and receiving Short Messaging Service (SMS)	2	3	-	1
PC8. send SMS using intent and also setup SMS receiving	-	2	-	-
PC9. implement changes in layout, add GUI and create necessary code for e-mail service	2	3	-	1
PC10. integrate application with Bluetooth technology, text files, binary data and access web services, if required	2	3	-	1
PC11. perform synchronous and asynchronous calls for integrated web services	1	3	-	-
Integrate location-based services	**12**	**12**	**-**	**4**
PC12. create a Google Maps project	-	3	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. obtain the Google Maps Application Programming Interface (API) key and add to the application	3	3	-	1
PC14. display the map after adding markers and synchronise it to location	3	-	-	-
PC15. integrate geographical coding and reverse geocoding on map interface	3	3	-	1
PC16. deploy and run the application	3	3	-	1
Develop the android services	**6**	**10**	**-**	**5**
PC17. interpret the application requirements to determine the type of service to be used	2	-	-	1
PC18. create the required service and implement the methods	-	2	-	-
PC19. execute various tasks such as long running tasks, repeated tasks, asynchronous tasks on a separate thread repeatedly	-	2	-	1
PC20. ensure to establish communication between an activity and a service and bind them	-	2	-	1
PC21. implement efficient data transfer to minimise battery drain	2	2	-	1
PC22. update User Interface (UI) from a runnable block	2	2	-	1
NOS Total	**35**	**50**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2301
NOS Name	Develop Android Value Added Services (VAS) Application
Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
NSQF Level	4
Credits	4
Version	4.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

TEL/N2302: Test and Publish Android Application

Description

This OS unit is about testing and publishing the applications for various android devices.

Scope

The scope covers the following :

- Test and secure the android applications
- Publish the android applications

Elements and Performance Criteria

Test and secure the android applications

To be competent, the user/individual on the job must be able to:

PC1. understand, evaluate and decide upon the testing methodology

PC2. create different cases and scenarios for the purpose of testing

PC3. perform functional testing, compatibility and performance of the application with different mobile phones

PC4. carry out network testing to check connectivity parameters

PC5. perform User Interface (UI/UX) testing based on various parameters

PC6. implement best practices for application security

PC7. resolve any issues/problems associated with the application, network and user interface after troubleshooting

PC8. interpret the security checks and perform application security test

Publish the android applications

To be competent, the user/individual on the job must be able to:

PC9. organise the application for release on application store

PC10. ensure availability of Google licensing for the application developed

PC11. configure Google play store components for uploading the application in the play store console

PC12. deploy and publish the applications on android platform

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. types of testing for applications

KU2. fundamentals and benefits of android application kit used in testing mobile applications

KU3. performance parameters used in application testing

KU4. security policies of android and the organisation commissioning the application

KU5. techniques for troubleshooting application problems

KU6. licensing policies of Google

KU7. fundamentals of services and background processing

KU8. fundamentals of networking

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret manual and other materials

GS2. priortise tasks to achieve efficiency

GS3. work systematically with attention-to-detail

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Test and secure the android applications	**23**	**34**	**-**	**8**
PC1. understand, evaluate and decide upon the testing methodology	3	4	-	1
PC2. create different cases and scenarios for the purpose of testing	2	3	-	1
PC3. perform functional testing, compatibility and performance of the application with different mobile phones	3	3	-	1
PC4. carry out network testing to check connectivity parameters	2	4	-	1
PC5. perform User Interface (UI/UX) testing based on various parameters	2	4	-	1
PC6. implement best practices for application security	3	4	-	1
PC7. resolve any issues/problems associated with the application, network and user interface after troubleshooting	5	6	-	1
PC8. interpret the security checks and perform application security test	3	6	-	1
Publish the android applications	**12**	**16**	**-**	**7**
PC9. organise the application for release on application store	3	5	-	2
PC10. ensure availability of Google licensing for the application developed	3	3	-	1
PC11. configure Google play store components for uploading the application in the play store console	3	4	-	3
PC12. deploy and publish the applications on android platform	3	4	-	1
NOS Total	**35**	**50**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2302
NOS Name	Test and Publish Android Application
Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
NSQF Level	4
Credits	4
Version	4.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

TEL/N9101: Organize Work and Resources as per Health and Safety Standards

Description

This OS unit is about planning work and following sustainable as well as healthy practices for safety and optimal use of resources.

Scope

The scope covers the following :

- Perform work as per quality standards
- Maintain safe, healthy and secure working environment
- Conserve material/energy/electricity
- Use effective waste management/recycling practices

Elements and Performance Criteria

Perform work as per quality standards

To be competent, the user/individual on the job must be able to:

PC1. keep workspace clean and tidy

PC2. perform individual role and responsibilities as per the job role while taking accountability for the work

PC3. record/document tasks completed as per the requirements within specific timelines

PC4. implement schedules to ensure timely completion of tasks

PC5. identify the cause of a problem related to own work and validate it

PC6. analyse problems accurately and communicate different possible solutions to the problem

Maintain safe, healthy and secure working environment

To be competent, the user/individual on the job must be able to:

PC7. comply with organisation's current health, safety, security policies and procedures

PC8. check for water spills in and around the work space and escalate these to the appropriate authority

PC9. report any identified breaches in health, safety, and security policies and procedures to the designated person

PC10. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.

PC11. avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence

PC12. identify hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority

PC13. participate regularly in fire drills or other safety related workshops organised by the company

PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected

PC15. maintain appropriate posture while sitting/standing for long hours

PC16. handle heavy and hazardous materials with care, while maintaining appropriate posture

PC17. sanitize workstation and equipment regularly

PC18. clean hands with soap, alcohol-based sanitizer regularly

PC19. avoid contact with anyone suffering from communicable diseases and take necessary precautions

PC20. take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.

PC21. report hygiene and sanitation issues to appropriate authority

PC22. follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.

Conserve material/energy/electricity

To be competent, the user/individual on the job must be able to:

PC23. optimize usage of material including water in various tasks/activities/processes

PC24. use resources such as water, electricity and others responsibly

PC25. carry out routine cleaning of tools, machine and equipment

PC26. optimize use of electricity/energy in various tasks/activities/processes

PC27. perform periodic checks of the functioning of the equipment/machine and rectify wherever required

PC28. report malfunctioning and lapses in maintenance of equipment

PC29. use electrical equipment and appliances properly

Use effective waste management/recycling practices

To be competent, the user/individual on the job must be able to:

PC30. identify recyclable, non-recyclable and hazardous waste

PC31. deposit recyclable and reusable material at identified location

PC32. dispose non-recyclable and hazardous waste as per recommended processes

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. strategies pertinent to their field (such as internet searches, asking peers and managers, enrolling for courses and certifications, etc.) that can be used to pursue an advancement in their skills

KU2. key performance indicators for the new tasks

KU3. feedback processes and formats

KU4. timelines and goals as well as their relevance to work allocated

KU5. importance of quality and timely delivery of the product/service

KU6. escalation matrix and its importance, especially in case of emergencies

KU7. ways of time and cost management

KU8. rules/regulation for maintaining health and safety at workplace

KU9. meaning of hazard, different types of health and safety hazards found in the workplace, risks and threats based on the nature of work

KU10. relevant signage, warnings, labels or descriptions on equipment, etc. while carrying out work activities

KU11. procedures to report breaches in health, safety and security

KU12. organisation's procedures for different emergency situations and the importance of following the same

KU13. different methods of cleaning, disinfection, sterilization, and sanitization

KU14. significance of personal hygiene practice including hand hygiene

KU15. path of disease transmission

KU16. correct method of donning and doffing of PPE

KU17. ways of managing resources and material efficiently

KU18. common electrical problems and common practices of conserving electricity

KU19. categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics and use of different colours of dustbins

KU20. organisation's procedures for minimizing waste

KU21. waste management and methods of waste disposal

KU22. common sources of pollution and ways to minimize it

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. improve and modify work practices

GS2. complete tasks efficiently and accurately within stipulated time

GS3. develop skills and mastery of the technologies prevalent in the industry

GS4. write in at least one language and complete written work with attention to detail

GS5. utilize time and manage workload efficiently

GS6. read and comprehend instructions and documents

GS7. accept feedback in a constructive way

GS8. seek clarifications from superior about the job requirement

GS9. read and comprehend statutory documents relevant to safety and hygiene

GS10. refer all anomalies to the concerned persons

GS11. analyze situations and make appropriate decisions

GS12. decide the most suitable course of action for completing the task within resources

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform work as per quality standards	**4**	**9**	**-**	**2**
PC1. keep workspace clean and tidy	-	1	-	-
PC2. perform individual role and responsibilities as per the job role while taking accountability for the work	1	1	-	1
PC3. record/document tasks completed as per the requirements within specific timelines	-	1	-	1
PC4. implement schedules to ensure timely completion of tasks	-	2	-	-
PC5. identify the cause of a problem related to own work and validate it	2	2	-	-
PC6. analyse problems accurately and communicate different possible solutions to the problem	1	2	-	-
Maintain safe, healthy and secure working environment	**16**	**27**	**-**	**4**
PC7. comply with organisation's current health, safety, security policies and procedures	1	1	-	-
PC8. check for water spills in and around the work space and escalate these to the appropriate authority	1	2	-	1
PC9. report any identified breaches in health, safety, and security policies and procedures to the designated person	1	2	-	1
PC10. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.	1	2	-	1
PC11. avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence	2	3	-	1
PC12. identify hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority	2	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. participate regularly in fire drills or other safety related workshops organised by the company	1	3	-	-
PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected	1	3	-	-
PC15. maintain appropriate posture while sitting/standing for long hours	1	1	-	-
PC16. handle heavy and hazardous materials with care, while maintaining appropriate posture	1	1	-	-
PC17. sanitize workstation and equipment regularly	1	2	-	-
PC18. clean hands with soap, alcohol-based sanitizer regularly	-	1	-	-
PC19. avoid contact with anyone suffering from communicable diseases and take necessary precautions	-	1	-	-
PC20. take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.	1	2	-	-
PC21. report hygiene and sanitation issues to appropriate authority	1	1	-	-
PC22. follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.	1	1	-	-
Conserve material/energy/electricity	**7**	**16**	**-**	**3**
PC23. optimize usage of material including water in various tasks/activities/processes	1	2	-	-
PC24. use resources such as water, electricity and others responsibly	1	2	-	1
PC25. carry out routine cleaning of tools, machine and equipment	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. optimize use of electricity/energy in various tasks/activities/processes	1	3	-	1
PC27. perform periodic checks of the functioning of the equipment/machine and rectify wherever required	1	3	-	1
PC28. report malfunctioning and lapses in maintenance of equipment	1	2	-	-
PC29. use electrical equipment and appliances properly	1	2	-	-
Use effective waste management/recycling practices	**3**	**8**	**-**	**1**
PC30. identify recyclable, non-recyclable and hazardous waste	1	2	-	1
PC31. deposit recyclable and reusable material at identified location	1	3	-	-
PC32. dispose non-recyclable and hazardous waste as per recommended processes	1	3	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9101
NOS Name	Organize Work and Resources as per Health and Safety Standards
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

TEL/N9102: Interact Effectively with Team Members and Customers

Description

This OS unit is about interacting with superiors and colleagues as well as customers and other stakeholders in own or other work groups within as well as outside the organisation.

Scope

The scope covers the following :

- Interact effectively with superiors
- Interact effectively with colleagues and customers
- Respect differences of gender and ability

Elements and Performance Criteria

Interact effectively with superiors

To be competent, the user/individual on the job must be able to:

PC1. receive work requirements from superiors and customers and interpret them correctly

PC2. inform the supervisor and/or concerned person about any unforeseen disruptions or delays

PC3. participate in decision making by providing facts and figures, giving/accepting constructive suggestions

PC4. rectify errors as per feedback and ensure the errors are not repeated

Interact effectively with colleagues and customers

To be competent, the user/individual on the job must be able to:

PC5. comply with organisation's policies and procedures for working with team members

PC6. communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written

PC7. respond to queries and seek/provide clarifications if required

PC8. co-ordinate with team to integrate work as per requirements

PC9. resolve conflicts within the team/with customers to achieve smooth workflow

PC10. recognize emotions accurately in self and others to build good relationships

PC11. prioritize team and organization goals above personal goals

Respect differences of gender and ability

To be competent, the user/individual on the job must be able to:

PC12. maintain a conducive environment for all the genders at the workplace

PC13. encourage appropriate behavior and conduct with people across gender

PC14. assist team members with disability in overcoming any challenges faced in work

PC15. practice appropriate verbal and non-verbal communication while interacting with People with Disability (PwD)

PC16. ensure equal participation of the people across genders in discussions

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisation's policies on dress code, workplace timings, workplace behaviour, performance management, incentives, delivery standards, information security, etc.

KU2. organisation's hierarchy and escalation matrix

KU3. importance of establishing good working relationships with colleagues and superiors

KU4. importance of helping colleagues with problems, in order to meet quality and time standards as a team

KU5. different means and methods of communication

KU6. different types of information that colleagues might need and the importance of providing this information in an appropriate manner

KU7. organisation's policies and procedures for working with colleagues and superiors

KU8. importance of understanding consequences of gender biased behaviour

KU9. gender based concepts, issues and legislation

KU10. organisation standards and guidelines to be followed for PwD and knowledge about laws, acts and provisions defined for PwD by the statutory bodies and the right way to use them including various medical conditions associated with PwD

KU11. health and safety requirements at workplace for PwD

KU12. process of recruiting people for a particular job profile w.r.t PwD and gender

KU13. various government/private schemes and benefits available for PwD and information about various institutes working for PwD to enable in providing livelihood opportunities for PwD

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and comprehend forms, documents and records

GS2. read and write in English and/or local language

GS3. complete work with attention to detail

GS4. listen effectively and orally communicate information

GS5. work as per customer requirements

GS6. communicate with empathy across genders and PwD

GS7. improve and modify work practices

GS8. maintain positive and effective relationships with colleagues and customers

GS9. evaluate the possible solution(s) to the problem

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Interact effectively with superiors	**7**	**15**	**-**	**2**
PC1. receive work requirements from superiors and customers and interpret them correctly	1	2	-	-
PC2. inform the supervisor and/or concerned person about any unforeseen disruptions or delays	2	4	-	1
PC3. participate in decision making by providing facts and figures, giving/accepting constructive suggestions	2	5	-	1
PC4. rectify errors as per feedback and ensure the errors are not repeated	2	4	-	-
Interact effectively with colleagues and customers	**7**	**26**	**-**	**4**
PC5. comply with organisation's policies and procedures for working with team members	1	2	-	-
PC6. communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written	2	4	-	1
PC7. respond to queries and seek/provide clarifications if required	2	4	-	1
PC8. co-ordinate with team to integrate work as per requirements	-	3	-	-
PC9. resolve conflicts within the team/with customers to achieve smooth workflow	1	5	-	1
PC10. recognize emotions accurately in self and others to build good relationships	1	4	-	-
PC11. prioritize team and organization goals above personal goals	-	4	-	1
Respect differences of gender and ability	**11**	**24**	**-**	**4**
PC12. maintain a conducive environment for all the genders at the workplace	2	5	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. encourage appropriate behavior and conduct with people across gender	2	5	-	1
PC14. assist team members with disability in overcoming any challenges faced in work	3	4	-	1
PC15. practice appropriate verbal and non-verbal communication while interacting with People with Disability (PwD)	2	4	-	1
PC16. ensure equal participation of the people across genders in discussions	2	6	-	-
NOS Total	**25**	**65**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9102
NOS Name	Interact Effectively with Team Members and Customers
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. identify employability skills required for jobs in various industries

PC2. identify and explore learning and employability portals

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC5. recognize the significance of 21st Century Skills for employment

PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC7. use basic English for everyday conversation in different contexts, in person and over the telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC16. select financial institutions, products and services as per requirement

PC17. carry out offline and online financial transactions, safely and securely

PC18. identify common components of salary and compute income, expenses, taxes, investments etc

PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all

GS4. how to work in a virtual mode

GS5. perform calculations efficiently

GS6. solve problems effectively

GS7. pay attention to details

GS8. manage time efficiently

GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	**2**	**2**	**-**	**-**
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**2**	**-**	**-**
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	**-**	**-**
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**4**	**-**	**-**
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Entrepreneurship	**2**	**3**	**-**	**-**
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	17/11/2025
NSQC Clearance Date	17/11/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N2300.Setup Android Application Development Environment with User Interface	35	55	-	10	100	17
TEL/N2301.Develop Android Value Added Services (VAS) Application	35	50	-	15	100	17
TEL/N2302.Test and Publish Android Application	35	50	-	15	100	17
TEL/N9101.Organize Work and Resources as per Health and Safety Standards	30	60	-	10	100	17
TEL/N9102.Interact Effectively with Team Members and Customers	25	65	-	10	100	17
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	15
Total	**180**	**310**	**-**	**60**	**550**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.