

# Model Curriculum

## Telecom Terminal Equipment Application Developer (Native)

**SECTOR: TELECOM**  
**SUB-SECTOR: HANDSET (TERMINAL APPLICATIONS)**  
**OCCUPATION: TERMINAL EQUIPMENT APPLICATION DEVELOPER**  
**REF ID: TEL/Q2301,V1.0**  
**NSQF LEVEL: 4**



## Certificate

### COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

**TELECOM SECTOR SKILL COUNCIL**

for

### MODEL CURRICULUM

Complying to National Occupational Standards of  
Job Role/ Qualification Pack: 'Telecom Terminal Equipment Application Developer (Native)'  
QP No. TEL/Q2301 NSQF - Level 4

Date of Issuance: **May 15<sup>th</sup>, 2016**

Valid up to\*: **May 15<sup>th</sup>, 2018**

*\*Valid up to the next review date of the Qualification Pack or the  
'Valid up to' date mentioned above (whichever is earlier)*



Authorised Signatory  
(Telecom Sector Skill Council)

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# Telecom Terminal Equipment Application Developer (Native)

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Telecom Terminal Equipment Application Developer (Native)”, in the “Telecom” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Telecom Terminal Equipment Application Developer (Native)</b>		
<b>Qualification Pack Name &amp; Reference ID. ID</b>	TEL/Q2301,Version 1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	26 – 12 – 2016
<b>Pre-requisites to Training</b>	Knowledge of Mobile phone App would be added advantage		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>carry out the role of Telecom Terminal Equipment Application Developer (Native) which involves</li> <li>• Interpret the business logic required to create a Mobile phone application</li> <li>• Understand how to create User Interface</li> <li>• Learn how to write Business logics for events and actions</li> <li>• Processing data and information</li> <li>• Testing the application and publishing application</li> <li>• Learn the adequate security measures taken to protect valuable data used in the app by unauthorized external agents</li> </ul>		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Telecom Terminal Equipment Application Developer ( Native)” Qualification Pack issued by “TSSC: Telecom Sector Skills Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Introduction</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 00:00</p> <p><b>Corresponding NOS Code</b> NA</p>	<ul style="list-style-type: none"> <li>State the objectives of the program and skills required for the job</li> <li>Describe the Mobile App eco-system, various platforms and development environments</li> <li>Make candidates aware of the opportunities in Mobile App development field</li> <li>Explain the relevance and advantages of App based business applications vis-à-vis traditional web-sites</li> </ul>	NA
2	<p><b>Programming in HTML5 with Java Script and CSS3</b></p> <p><b>Theory Duration</b> (hh:mm) 25:00</p> <p><b>Practical Duration</b> (hh:mm) 60:00</p> <p><b>Corresponding NOS Code</b> TEL/N2304</p>	<ul style="list-style-type: none"> <li>Understand basic of HTML, CSS and Java Script</li> <li>Creating documents structure and objects</li> <li>Understand implementation of program flow</li> <li>Access and secure data</li> <li>Usage of CSS3 in application development</li> <li>Usage of java script for developing applications</li> </ul>	Computer Lab (Supported OS, 4 Gb RAM), Broadband, Various Smartphone (working with versions of common Mobile OS)
3	<p><b>Developing Native application using HTML5 and JavaScript</b></p> <p><b>Theory Duration</b> (hh:mm) 25:00</p> <p><b>Practical Duration</b> (hh:mm) 60:00</p> <p><b>Corresponding NOS Code</b> TEL/N2305</p>	<ul style="list-style-type: none"> <li>Understanding and Setting up native application development tools/suite</li> <li>Principals and components of UI design and controls</li> <li>Handling data files, streams and database operations</li> <li>App Management and Navigation</li> <li>Developing VAS Applications</li> <li>Candidate is expected to create functional Apps (4 to 5 practical assignments)</li> </ul>	Computer Lab(Supported OS, 4 Gb RAM), Broadband, Various Smartphone (working with versions of Mobile OS)
4	<p><b>Testing and Publishing Phone applications</b></p> <p><b>Theory Duration</b> (hh:mm)</p>	<ul style="list-style-type: none"> <li>Understand various application testing methodologies and associated processes</li> <li>Learn how to secure phone applications</li> <li>Learn the concept of application</li> </ul>	Computer Lab (Supported OS, 4 Gb RAM), Broadband, Various Smartphone (working with

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	20:00  <b>Practical Duration</b> (hh:mm) 50:00  <b>Corresponding NOS Code</b> TEL/N2306	configuration <ul style="list-style-type: none"> <li>• Publishing phone applications in various OS specific app stores</li> <li>• Candidate is expected to know the entire process/procedure for publishing the App at the App Store</li> </ul>	versions of Mobile OS)
	<b>Total Duration</b>  <b>Theory Duration</b> <b>80:00</b>  <b>Practical Duration</b> <b>170:00</b>	<b>Unique Equipment Required:</b> White/black board, Projection System with PC/Laptop (Current OS and Min 4 GB RAM) Development Tools and Framework, sample smartphones (for app deployment & testing), Internet/Broadband connectivity	

Grand Total Course Duration: 250 **Hours, 0 Minutes**

*(This syllabus/ curriculum has been approved by **TSSC: Telecom Sector Skill Council**)*

## Trainer Prerequisites for Job role: “Telecom Terminal Equipment Application Developer (Native)” mapped to Qualification Pack: “TEL/Q2301, V. 1.0”

Sr. No.	Area	Details
1	<b>Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “TEL/Q2301, Version No. 1.0”.
2	<b>Personal Attributes</b>	This job requires the individual to have good analytical and problem solving Skills, flair of designing/structuring activities and comfort with working on computers.
3	<b>Minimum Educational Qualifications</b>	Preferably 10th
4a	<b>Domain Certification</b>	Certified for Job Role: “Telecom Terminal Equipment Application Developer (Native)” mapped to QP: “TEL/Q2301, Version No. 1.0”. Minimum accepted score as per respective TSSC guidelines.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “TEL/Q2301, Version No. 1.0”. Minimum accepted score as per respective TSSC guidelines.
5	<b>Experience</b>	<ul style="list-style-type: none"> <li>The trainer should be certified by TSSC as ‘Train the Trainer’ and Assessor And</li> <li>Should have at-least 1 yr experience in developing Mobile Apps on various mobile platforms</li> </ul>

### Annexure: Assessment Criteria

<b>Assessment Criteria</b>	
<b>Job Role</b>	<b>Telecom Terminal Equipment Application Developer (Native)</b>
<b>Qualification Pack</b>	<b>TEL/Q2301, V. 1.0</b>
<b>Sector Skill Council</b>	<b>Telecom</b>

<b>Sr. No.</b>	<b>Guidelines for Assessment</b>
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. TSSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the TSSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4	To pass the Qualification Pack, every trainee should score overall of 70%.
5	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.



Assessable Outcome	Assessment Criteria	Total Mark (300)	Out Of	Theory	Skills Practical
TEL/N2304 Implement and manipulate document structures and objects	PC1. create the document structure using HTML tags((Section, Article, Nav, Header, Footer, and Aside and other tags)	100	10	4	6
	PC2. Working with UI elements. Programmatically add and modify HTML elements; implement media controls. Implement HTML5 canvas and SVG graphics		10	4	6
	PC3. implement HTML5 APIs		6	2	4
	PC4. Establish the scope of objects and variables		6	2	4
	PC5. create and implement objects and methods		4	2	2
Implement program flow	PC6. working with Control Statements		4	2	2
	PC7. Handle common events exposed by DOM		4	2	2
	PC8. implement exception handling		4	2	2
	PC9. implement a callback		4	2	2
	PC10. create a web worker process		4	2	2
Access and secure data	PC11. Validate user input by using HTML5 elements		4	2	2
	PC12. validate user input by using JavaScript		4	2	2
	PC13. consume JSON and XML data		4	2	2
	PC14. serialize, de-serialize, and transmit data		4	2	2
Use CSS3 in Application Development	PC15. style HTML text properties, box properties		4	2	2
	PC16. Create a flexible content layout & animated and adaptive UI		4	2	2
	PC17. find elements by using CSS selectors and jQuery		2	1	1
	PC18. structure a CSS file by using CSS selectors		2	1	1
Using Java Script and advanced operations in Application Development	PC19. Creating Objects and Methods by Using JavaScript		2	1	1
	PC20. Refining Code for Maintainability and Extensibility		2	1	1
	PC21. Creating Interactive Pages using HTML5 APIs		2	1	1
	PC22. Adding Offline Support to Web Applications		2	1	1
	PC23. implementing an Adaptive User Interface		2	1	1
	PC24. implementing Generics		2	1	1
	PC25. Working with Advanced Graphics and Animating User Interface Elements		2	1	1
	PC26. implementing Real-Time Communications by Using Web Sockets		2	1	1
<b>Total</b>				46	54

TEL/N2305 Essentials of Native Application platform Suite/ Tools and Configuration	PC1. Identify various Native Application Development tools/suite available from different vendors, features and benefits.	100	6	6	0
	PC2. Installation of Native Application suite/tools and make necessary configuration for app ready platform.		6	2	4
	PC3. setting up the Emulator		3	1	2
Principles and components of UI Design, Layouts and controls	PC4. ideate and formulate a theme of User Interface and navigation flow		4	2	2
	PC5. Exploring the Native Application Development Platform and features. Knowing the features of various Mobile OS platforms.		8	2	6
	PC6. Creating Layout Controls and Templates for user interface design		8	2	6
	PC7. Implementing Other iOS specific and Android Specific interfaces design.		4	2	2
	PC8. responding to Mouse and Touch and other actions		6	2	4
Handling Files and Data	PC9. designing and Implementing a Data Access Strategy		6	2	4
	PC10. handling Files and Streams for Apps and Working with File User Interface Components		6	2	4
	PC11. Writing Data to the Notes File and Reading Data from the Notes File		6	2	4
	PC12. working with SQL lite		4	0	4
Process Lifetime Management and Navigation in a App	PC13. Explore the Different PLM States		5	2	3
	PC14. Implement State Management		3	2	1
	PC15. handling Navigation in Store Apps		5	1	4
	PC16. semantic Zoom for windows platform		6	2	4
	PC17. working on specific features of Android and iOS		6	2	4
Developing VAS Applications	PC18. Working with Network components and Controls, GPRS Based Apps		4	2	2
	PC19. Working with Mail		4	4	0
<b>Total</b>			40	60	
TEL/N2306 Phone Application Testing	PC1. test fundamentals and understand types of testing	100	15	15	0
	PC2. test phone application using unit testing		15	10	5
	PC3. carry out functional/usability test of applications		15	5	10
	PC4. carry out UI Testing		15	8	7
	PC5. carry out performance testing		5	3	5
	PC6. localization issues & battery impact analysis		5	2	3
Securing Phone Applications	PC7. application security testing		5	2	3
	PC8. security best practices for VAS applications		5	2	3

Application configuration, Publishing Phone Applications in various OS specific app stores	PC9. configuration options in the App manifest file		5	2	3
	PC10. App Certification		5	3	3
	PC11. enterprise App Deployment across various platforms		10	3	3
<b>Total</b>				55	45
<b>Grand Total</b>		300	300	141	159
<b>Percentage Weightage:</b>				47%	53%
<b><u>Minimum Pass% to qualify (aggregate):</u></b>				70%	