

Model Curriculum

Telecom - Tower Technician

SECTOR: TELECOM

SUB-SECTOR: PASSIVE INFRASTRUCTURE

OCCUPATION: OPERATION & MAINTENANCE

REF ID: TEL/Q4.100, V1.0

NSQF LEVEL: 4



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TELECOM SECTOR SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: Tower Technician OP No. TEL/Q4100 NSQF Level 4

Date of Issuance:
Valid up to:

* Valid up to the next review date of the Qualification Pack



Authorized Signatory
(Telecom Sector Skill Council)

TABLE OF CONTENTS

1. Curriculum	01
2. Trainer Prerequisites	04
3. Annexure: Assessment Criteria	05

Telecom - Tower Technician

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Telecom -Tower Technician”, in the “Telecom” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Telecom - Tower Technician		
Qualification Pack Name & Reference ID. ID	TEL/Q4100		
Version No.	1.0	Version Update Date	31 – 05 – 2017
Pre-requisites to Training	Preferably equivalent to 10+2		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Acquaint self with facets of preventive and corrective maintenance: Adhere to plans for PM and CM. • Identify importance of site hygiene: Maintain and monitor, DG, PIU, SMPS, battery bank and surrounding area. • Execute operational activities: scrutinize electricity bill, PIU, alarms and fuel • Aggregate potential knowledge and skill to vouchsafe the importance of health and safety: Safeguard compliance of safety regulations, personal protection, fire regulation and environmental condition. • Comprehend and initiate importance of documentation: Maintain checklist, reports, and issues for future reference. 		

This course encompasses 8 out of 8 National Occupational Standards (NOS) of “Telecom - Tower Technician” Qualification Pack issued by “Telecom Sector Skill Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code TEL/N4100 TEL/N4102	<ul style="list-style-type: none"> Understand General Discipline in the class room (Do's & Don'ts) Learn about the telecom industry Develop understanding about the Telecom Infrastructure industry. Understand Role of a Tower Technician Differentiate between various technologies used in Telecom Networks Understand about the various equipment deployed at a tower site. Know about the tools used in maintaining a tower site. 	NA
2	AMF Panel and Diesel Generator Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 60:00 Corresponding NOS Code TEL/N4102 TEL/N4101	<ul style="list-style-type: none"> Explaining indicators, Gen Configuration, Display Measurements Learning trouble shooting, preventive maintenance, check List Learning block diagram Explaining the purpose of generators Educating various parts and principles 	AMF(Automatic Mains Failure) panel, DG Set
3	Power Supply and Battery Bank Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 60:00 Corresponding NOS Code TEL/N4100 TEL/N4101 TEL/N4102	<ul style="list-style-type: none"> Imparting the basic principles and its related functions, settings, specifications, LVD etc. Acquiring knowledge of BD, different types of PIUs, PMUs and SPSMs, APS, AC Distribution, LED Indicators, and alarm Indicators Explaining the principles of Battery Bank and its maintenance Educating the purpose and workings of AC 	PIU, PMU, SPSM Battery Bank, AC Unit
4	Electrical System Theory Duration (hh:mm) 30 :00	<ul style="list-style-type: none"> Training on electrical Checks, AC/DC Distributions, Earthling, LA & AL, DTS, CPH Guideline, Cell to TOC, External alarm at Site and OSS Learning the working of electrical systems 	Tester, multi meter and electrical tools, Megger

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 40:00 Corresponding NOS Code TEL/N4100 TEL/N4103 TEL/N4104	<ul style="list-style-type: none"> Documenting monitor readings, check lists, faults, reports on changes and movements. 	
5	Health, Safety, and Maintenance Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code TEL/N4100 TEL/N4101 TEL/N4102 TEL/N4104	<ul style="list-style-type: none"> Educating general safety rules and health check for site, alarms Making the candidate understand personal protective equipment like safety Harness, helmet, gloves, eye protection glass, earplugs, nose mask etc. and their application under different working conditions Training on various safety procedures and methods like barricading of work place, signage, safety drills, evacuation Procedures etc. Acquiring knowledge of shelter maintenance, tower check Understanding the importance of fault identification Training for effective maintenance procedures 	Helmets, safety harness and gloves, eye protecting glass, earplugs. Fire safety devices (Fire Extinguisher (Electrical, General, Oil Fire))
	Total Duration Theory Duration 120:00 Practical Duration 180:00	Unique Equipment Required: Projector, black board and whiteboard	

Grand Total Course Duration: **300Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by [Telecom Sector Skill Council](#))

Trainer Prerequisites for Job role: “Telecom - Tower Technician” mapped to Qualification Pack: “TEL/N4100, v1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ <u>TEL/O4100</u> , Version No. 1.0.”
2	Personal Attributes	This job requires the individual to be technically qualified; self-disciplined; assertive; team player; action-orientated; possess analytical skills & problem solving ability; effective communication skills and ability to work under pressure.
3	Minimum Educational Qualifications	Preferably equivalent to Diploma
4a	Domain Certification	Certified for Job Role: “ <u>Telecom - Tower Technician</u> ” mapped to QP: “ <u>TEL/4100</u> , Version No. 1.0.” Minimum accepted score as per respective TSSC guidelines.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “ <u>TEL/4100</u> , Version No. 1.0” Minimum accepted score as per respective TSSC guidelines.
5	Experience	<ul style="list-style-type: none"> • The trainer should be certified by TSSC as ‘Train the Trainer’ and Assessor and • Worked as Tower technician for a minimum of 3-4 years if educational qualification is ITI/ Diploma or • Worked as Telecom -Tower technician for 1-2 years if educational qualification is Bachelor in Technology (B.Tech. and BE.)

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Telecom - Tower Technician
Qualification Pack	TEL/N4100, v1.0
Sector Skill Council	Telecom

Sr. No.	Guidelines for Assessment
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 and skill practical part for each candidate at each examination/training center.
4	To pass the Qualification Pack, every trainee should score overall 70% pass percentage.
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 (400)	Out of	Theory	Skills (Practical)
1. TEL/N4100 (Site hygiene)	PC1. maintain site hygiene of AC, DG, PIU, SMPS and battery bank, as per organization's norms	100	10	10	0
	PC2. check leakage, rattles and shakes at the tower site		10	5	5
	PC3. check if installation of fire safety instruments is in place		10	10	0
	PC4. control fire accident incidents		15	15	0
	PC5. check the site as per electrical safety norms		20	10	10
	PC6. check proper floor markings, shadow board display and labels		10	10	0
	PC7. check diesel consumption and highlight excessive consumption to supervisor		15	15	0
	PC8. conduct work area audit as per company checklists		5	5	0
	PC9. maintain checklist of standards laid by the company		5	5	0
	Total	100	85	15	
2. TEL/N4101 (Preventive Maintenance)	PC1. adhere to PM (preventive maintenance) plan	100	5	5	0
	PC2. comply with Beat plan execution, for self		5	5	0
	PC3. conduct site PM (preventive maintenance)		20	0	20
	PC4. keep a check on site up-time		5	5	
	PC5. perform unique site down PM (preventive maintenance)		15	7	8
	PC6. perform health check on site like checking engine oil, voltage etc.		15	6	9
	PC7. check premature ageing of Battery Bank, Diesel Generator, Air Conditioner, PIU and SMPS		15	6	9
	PC8. monitor outages due to Diesel Generator		5	5	0
	PC9. close maximum number of complaints registered		5	5	0
	PC10. provide timely resolutions to trouble tickets raised		5	5	0
	PC11. comply with preventive maintenance schedule		5	5	0
	Total	100	48	52	
3. TEL/N4102 (Site Management)	PC1. monitor reading as per EB (electricity bill) against reading on PIU (power interface unit)	100	10	5	5
	PC2. timely collect and submit the EB (electricity bill) at the office		5	5	0
	PC3. check number of alarms active at the site		20	5	15
	PC4. check site for faulty alarms		20	10	10
	PC5. attend alarms within the defined SLA		10	5	5
	PC6. identify the reasons for site lock		20	10	10
	PC7. co-ordinate with service providers for quality fuel to be filled		10	10	0
	PC8. interact with site owners w.r.t. rent, access issues etc.		5	5	0
	Total	100	52	48	
	PC1. escalate faults/issues at site to supervisor	100	10	10	0

4. TEL/N4103 (Task Reporting)	PC2. fill the preventive maintenance checklists/reports		20	0	20
	PC3. fill the corrective maintenance checklists/reports		20	0	20
	PC4. accurately report diesel filling, electricity bill and DG reading		20	10	10
	PC5. report any changes in the site or movement of any material		15	10	5
	PC6. report theft if any from the site location		10	10	
	PC7. report movement of tower technicians to supervisor		5	5	0
	Total		100	45	55
5. TEL/N4104 (Corrective Maintenance)	PC1. timely identification of the need for corrective maintenance	100	25	10	15
	PC2. adhere to maintenance plan		10	10	0
	PC3. effective corrective maintenance on all equipment		35	0	35
	PC4. escalate faults/issues at site to supervisor		10	10	0
	PC5. fill the corrective maintenance checklists/reports		10	10	0
	PC6. close maximum number of faults reported		10	10	0
Total	100	50	50		
Grand Total		400	400	280	220
Percentage Weightage:				40 %	60 %
Minimum Pass% to qualify (aggregate):				70 %	