

Model Curriculum

R F Site Surveyor

SECTOR: TELECOM
SUB-SECTOR: PASSIVE INFRASTRUCTURE
OCCUPATION: OPERATION & MAINTENANCE
REF ID: TEL/Q4103
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: 'R F Site Surveyor'
QP No. TEL/Q4103 NSQF Level 4

Date of Issuance: **May 15th, 2016**

Valid up to*: **May 15th, 2018**

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



Authorized Signatory
(Telecom Sector Skill Council)

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R F Site Surveyor

CURRICULUM / SYLLABUS

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

Program Name	R F Site Surveyor		
Qualification Pack Name & Reference ID. ID	TEL/Q4103, v1.0		
Version No.	1.0	Version Update Date	09-10-2016
Pre-requisites to Training	<ul style="list-style-type: none"> • Preferably 10+2 		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Carry out the role of R F Site Surveyor which involves • identification of site location • estimation of tower height • determination of antenna height and direction as per clutter type 		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “R F Site Surveyor” Qualification Pack issued by “Telecom Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Introduction</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 00:00</p> <p>Corresponding NOS Code NA</p>	<ul style="list-style-type: none"> Introduction to Telecom Infrastructure 	Laptop, white board, marker, projector
2	<p>Identify Site Location</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 40:00</p> <p>Corresponding NOS Code TEL/N4115</p>	<ul style="list-style-type: none"> Functionality of tools like (GPS, Camera, Binoculars, Compass, laptop, Map info software) for survey preparation Read and understand Search Area Map (SAM)/ nominal of proposed location obtained from the RF planning team. Understand that SAM contains relevant information about proposed site, site name, site id, latitude and longitude, coverage objective Operate GPS to capture latitude/longitude on reaching site location Identify physical location of the nominals on the site and locate three options Obtain latitude and Longitude in Map info software to see nearby R F sites for distance, orientation and signal quality Understanding of Map Info software Understand principles of R F propagation Verify landlord antecedents Ensure compliance with site risk control, OHS, environmental and quality requirements as per norms Maintaining report and records 	Laptop, white board, marker, projector GPS, Compass, Measuring tape (50m), MAP info Software, Binoculars
3	<p>Determine Tower Height</p> <p>Theory Duration (hh:mm) 13:00</p> <p>Practical Duration (hh:mm) 50:00</p> <p>Corresponding NOS Code TEL/N4116</p>	<ul style="list-style-type: none"> Usage of GPS to locate tower on site Usage of Camera to take photograph of site for proposing tower and BTS location on the site Marking of proposed tower/pole location on a rough sketch of the building (rooftop) or ground site Usage of GPS to take AMSL data Measuring building height using laser meter Usage of binoculars to check for any 	GPS, Compass, Measuring tape (50m), MAP info Software, Camera, Binoculars

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		obstructions like tall building around proposed site <ul style="list-style-type: none"> Estimating tower height Ensure compliance with site risk control, OHS, environmental and quality requirements as per norms Maintaining report and records 	
4	Determine Height and Direction of Antenna as per Clutter Type Theory Duration (hh:mm) 32:00 Practical Duration (hh:mm) 25:00 Corresponding NOS Code TEL/N4117	<ul style="list-style-type: none"> Functionality of tools like (GPS,Camera,Binoculars, Compass, Map info software,Laptop) Identify north using compass Use camera to take photographs of the panoramic view at 30 degree interval starting with north Use camera to take the photograph in the proposed antenna azimuth for coverage Use GPS to capture direction and latitude/longitude of any immediate obstructions (tall building,chimney,water tank etc) Use binocular to capture and interpret clutter information Collect hotspot information using GPS Estimate and provide for required antenna heights and orientation based on clutter Verify space availability for antenna on the tower in case of shared survey Verify direction availability for antenna on the tower in case of shared survey 	GPS, Compass, Measuring tape (50m), MAP info Software, Camera, Binoculars
	Total Duration Theory Duration 85:00 Practical Duration 115:00	Unique Equipment Required: black/ white board, marker, projector system with PC/Laptop	

Grand Total Course Duration: 200Hours, 0 Minutes

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

Trainer Prerequisites for Job role: “R F Site Surveyor” mapped to Qualification Pack: “TEL/Q2303, 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 “TEL/Q4103”, Version No. 1.0.
2	Personal Attributes	Personal Attributes: This job requires a person to be technically qualified; self disciplined; team player; action oriented; possess good communication, analytical skills and problem solving ability.
3	Minimum Educational Qualifications	12th std. preferably
4a	Domain Certification	Certified for Job Role: “R F Site Surveyor” mapped to QP: “TEL/Q4103” 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: “TEL/Q4103” 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 R F Site Surveyor for minimum 3-4 years if educational qualification is ITI/ Diploma or • Worked as R F Site Surveyor for 1-2 years if educational qualification is Bachelor in Technology (BTech and BE)

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	R F Site Surveyor
Qualification Pack	TEL/Q4103, 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 part for each candidate at each examination/training centre(as per assessment criteria below)
4	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below)
5	To pass the Qualification Pack, every trainee should score 70% overall.
6	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)	Element Weight	Out Of	Theory	Skills				
							Practical				
1. TEL/N4115 (Identify Site Location)	Arrange for tools and information	PC1. ensure availability of tools (GPS,Camera, Binoculars, Compass,	100	20	5	2	3	5			
		PC2. read Search Area Map (SAM)/ nominals of proposed location							7	2	5
		PC3. confirm that SAM contains all relevant information about proposed site;sitename,siteid,latitudeandlongitude,coverage objective							8	3	5
	Coordinating R F site survey activities for identifying site location	PC1. operate GPS to capture latitude/longitude on reaching site location		60	20	2	18				
		PC2. identify physical location of the nominals on the site and locate three options						20	2	18	
		PC3. put obtained latitude and longitude in Map info software to see nearby R F sites for distance, orientation and signal quality						15	3	12	
		PC4. verify landlord antecedents						5	5	0	
	Health and Safety	PC1.. ensure compliance with site risk control, OHS, environmental and quality		10	3	3	0				
		PC2. ensure that work is carried out in accordance to the level of competence						2	2	0	
		PC3. ensure that personal protection equipments like helmets, safety boots etc are used as required						3	3	0	
		PC4. ensure adherence to emergency plans in case of safety incidents						2	2	0	
	Report and Record	PC1. ensure GPS data is documented and the proposed options are recorded		10	3	1	2				
		PC2. ensure signal quality observed is recorded						3	1	2	
		PC3. ensure filling all the required details in survey report template						2	2	0	
		PC4. ensure documents are available to all appropriate authorities for inspection						2	2	0	
					Total	100	100	35	65		
2. TEL/N4116 (Determine Tower Height)	Arrange for tools	PC1. ensure availability of tools (GPS,Camera, Binoculars,Compass,Laptop,Map info software)	100	5	5	2	3				
	Coordinating R F site	PC2. use camera to take photograph of site for proposing tower and BTS						75	15	3	12

	survey activities for identifying site location	PC3. mark proposed tower / pole location on a rough sketch of the building			10	2	8		
		PC4. use GPS to take AMSL data			10	2	8		
		PC5. measure building height using laser meter			10	2	8		
		PC6. use binocular to check for any obstructions like other tall buildings around			10	2	8		
		PC7. estimate tower height			10	2	8		
	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality		10		3	3	0	
		PC2. ensure that work is carried out in accordance to the level of competence				2	2	0	
		PC3. ensure that personal protection equipments like helmets, safety boots etc are				3	3	0	
		PC4. ensure adherence to emergency plans in case of safety incidents				2	2	0	
	Report and Record	PC1. ensure GPS data is documented and the proposed options are recorded		10		3	1	2	
		PC2. ensure AMSL data is recorded				3	1	2	
		PC3. ensure filling all the required details in survey report template				2	2	0	
		PC4. ensure documents are available to all appropriate authorities for inspection				2	2	0	
				Total		100	100	33	67
	3. TEL/N4117 (Determine height and direction of antenna as per clutter type)	Arrange for tools	PC1. ensure availability of tools (GPS, Camera, Binoculars, Compass, Laptop)	100	75	5	5	2	3
		Coordinating R F site survey activities for antenna height and direction as per clutter type	PC1. identify north using compass			5	1	4	
PC2. use camera take photographs of the panoramic view at 30 degree interval starting with north			10			2	8		
PC3. use camera to take the photograph in the proposed antenna azimuth for coverage			10			2	8		
PC4. use GPS to capture direction and latitude/ longitude of any immediate obstructions (tall building, chimney, water tank etc			10			2	8		
PC5. use binocular to capture and interpret clutter information			10			2	8		
PC6. collect hotspot information using GPS			10			2	8		
PC7. estimate and provide for required antenna heights and orientation based on clutter.			10			2	8		

		PC8. verify space availability for antenna on the tower in case of shared survey			5	2	3
		PC9. verify direction availability for antenna on the tower in case of shared survey			5	2	3
	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality		10	3	3	0
		PC2. ensure that work is carried out in accordance to the level of competence			2	2	0
		PC3. ensure that personal protection equipments like helmets, safety boots etc are			3	3	0
		PC4. ensure adherence to emergency plans in case of safety incidents			2	2	0
	Report and Record	PC1. ensure GPS data is documented and the proposed options are recorded			3	1	2
		PC2. ensure clutter and hotspot information is recorded			3	1	2
		PC3. ensure filling all the required details in survey report			2	2	0
		PC4. ensure documents are available to all appropriate			2	2	0
			Total	100	100	65	35
Grand Total				300	300	133	167
Percentage Weightage:						40%	60%
Minimum Pass% to qualify (aggregate):						70%	