Model Curriculum

CCTV Installation Technician

CCTV Installation Technician

SECTOR:	**IASC**
SUB-SECTOR:	**IT Hardware**
OCCUPATION:	**After Sales Services**
REFERENCE ID:	**IAS/ELE/Q4605 version1.0**
NSQF LEVEL:	**4**

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CCTV Installation Technician

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "**CCTV Installation Technician**", in the "Electronics" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	CCTV Installation Technician		
Qualification Pack Name & Reference ID.	CCTV Installation Technician (IAS/ELE/Q4605)version 1.0		
Version No.	1.0	Version Update Date	07 – 12 – 2015
Pre•requisites to Training	ITI		
Training Outcomes	Diploma • Minimum 6 months as helper		

	After completing this programme, participants will be able to:
	    Interact with the customer in order to identify and understand their requirements.
	   Ensure customer satisfaction
	   Install and Repair dysfunctional system.
	    Identify dysfunctional components through visual inspection and by use of multi meter
	    To understand CCTV camera installation requirement in terms of equipment, system, tools, applications appropriate for a particular site.
	    Select Suitable cameras & DVR to provide the better solution to the customers.
	   Read and Comprehend signs, labels and warning
	   Communicate effectively
	   Follow behaviour etiquettes while interacting with others
	    Establishing good working relationships with colleagues within and outside the department by coordinating		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of "CCTV Installation Technician" Qualification Pack issued by "Electronics Sector skill Council of India".

Sr. No.	Module	Theory Duration (hh:mm)	Practical Duration (hh:mm)	Key Learning Outcomes	Corresponding NOS Code	Equipment Required
1	Basics of security surveillance.	03:00	05:00	Understand the surveillance system. • Knowledge of pro's & con's of surveillance.	ELE/N461 1	

				• Explain the facts of video surveillance. • Explain and construct various nodes of CCTV surveillance system		
2	Functions of video surveillance	03:00	05:00	• Constructing of a video surveillance system. • Explain function of blocks and equipment required to implement a video surveillance system. • Understanding the facts about CCTV and its interfacing devices	ELE/N4611	a)Camera. b) DVR. c)cables. d)adapter e)Display device.
3	Types of Camera & their functions	02:00	03:00	• Understanding the various types of camera and their functionality. • Reassembling the camera & exam the parts of camera to understand their mechanism. • Selecting suitable camera after understanding	ELE/N4611	a)camera(diff. types). b) DVR. c) cable d) Screw driver set. e)Display.
4	Lens & sensors	02:00	03:00	• Different types of lens and their utility. • Differentiate & select the best camera from the same group depending on the image quality being measured by TVL chart. • Selecting a camera for higher security application.	ELE/N4611	a)Lenses(diff. types). b)screw driver set. c)Camera. d)DVR
5	DVR	02:00	03:00	• DVR as interface to view and record the image transmitted by a camera. • Explain the function of various blocks of DVR. • Understand the	ELE/N4611	a) DVR(Diff. Types). b) Camera C)Adapter. d)cable e)Screw driver. f)Display.

				recording format of a DVR. • Enabling and disabling the features of a DVR depending on the level of surveillance and customer requirement.		
6	Principles of remote accessing	02:00	03:00	• Explain the nodes for remote access of a CCTV camera / DVR. • Configuring the DVR with	ELE/N461 1 ELE/N461 0 ELE/N460 9	a)DVR. b)Camera. C)Cable. d)LAN connection/Mode m. e)Laptop. f)Display.
7	Install the CCTV camera	03:00	05:00	• To understand the warranty associated with the hardware product • To know related documents for the hardware equipments • To know company's policy on product's warranty and other terms and conditions To know company's customer support and service policy • To know camera specifications such as focus, lens type, zoom To check the hardware equipments before taking to the installation site • To replace the hardware if there is any issue or malfunction is found while testing • To Know different types of electronic surveillance products and functionalities • To read the standard operating procedures for	ELE/N461 0	Practical Lab *Computer *LCD display *White board *Marker *Tool Kit for installing camera *Installation manual *Safety precaution manual *Hardware equipment

different equipment
• To Know elements of
CCTV systems such as
camera, DVR, monitor
To check for critical
equipment such as
camera, recorder w.r.t
quality and output
• To ensure all the tools,
equipments, utilities are
available in good to enable
installing in single visit
• To know specification
and the procedures to be
followed for setting up the
system
• To know functions of
electrical and mechanical
parts or modules
• To know power
requirement of different
CCTV related equipment
To use BNC connectors for
joining cables and crimp
them
• To connect all the cables
from multiple cameras to
the CCTV system area
To know installation
procedures given in the
manuals• To use power
cable of specified thickness
to connect CCTV system
with power supply
• To know basic
electronics involved in the
hardware
• To know voltage and
power requirement for
different hardware devices
• To know voltage
requirement and other
specification on CCTV
hardware

					• To mount the CCTV camera so as to cover maximum area • To decide whether the camera requires any enclosure to protect from dust, vandalism and climatic conditions • To know camera specifications such as focus, lens type, zoom • To know controls of different options in camera such as rotation, speed of movement in pan / tilt camera • To use stable mounting structure and ensure that is not disturbed by wind or rain which would affect the video quality • To decide on the height of camera installation according to the end purpose (for example: if the visitor entering the premise is to be monitored, camera should not be placed too high and their face would not be captured) • To set up the type of camera such as pan, tilt, zoom unit as per customer requirement • To set camera controls • To connect the power and video output cable to the camera • To use tools such as diagonal cutters, screwdrivers, crimp tools, knife for cabling and camera mounting		

				• To use recommended tools for specific equipment to avoid damage • To know functions of electrical and mechanical parts or modules • To know how to operate the system and other hardware • To follow standard operating procedure of tools and equipments and avoid any hazard • To follow the installation manual for specific hardware product • To follow standard safety procedures while installing • To know installation procedures given in the manuals • To operate hardware equipment in CCTV system • To Know safety rules, policies and procedures – To Know quality standards to be followed • To use other specific devices for installation of camera • To improve work processes • To ensure that only quality hardware products are procured complying to industry and quality standards • To ensure product installation and user manual is available which should be given to the user or customer • To ensure that there are		

no cable joins, sharp bends during cabling
• To ensure weather proof (UV proof) cable are used in outdoors
• To ensure that cabling is sturdy, protected and does not disturb the ambience of building

• To ensure that cameras are protected from light while installing in outdoor
• To ensure the intended area is covered during movement in case of tilt or pan type of camera
• To assess power requirement of camera and use required power supply and cable
• To educate customer on use of cameras for desired monitoring and warranty period and annual maintenance requirement
• To ensure zero• material damage while handling the equipment during installation process
• To install target number of CCTVs as per company's policy
• To know company's sales and after sales support policy
• To know company's policy on product's warranty and other terms and conditions
• To know company's customer support and service policy
• To know importance of

				the individual's role in the workflow • To know company's policies on: incentives, delivery standards, and personnel management • To share work load as required • To achieve the targets given on installations • To reduce repetition of errors		monitor, spe
8	Setup the CCTV surveillance system	04:00	05:00	To procure and place the Digital Video Recorder (DVR) in an appropriate place as per customer's requirement • To connect all the cameras installed to the DVR • To ensure that all cameras are connected to the DVR and the wiring is appropriate • To connect the monitor (TV / PC) with the video output connection in the DVR • To connect speakers, if required, for audio output to DVR • To connect the camera optional controls (tilt / pan / zoom) to DVR • To use DVR link option to connect with other DVR in the network • To connect the DVR to router, if required, to enable remote monitoringTo connect the power supply of DVR,	ELE/N4611	akers to setup the system

				• To install the appropriate software for IP network or remote monitoring • To enter the appropriate IP address to receive the video signals through IP network / internet • To connect all equipments and switch on to start the video capture		
9	Cables.	02:00	03:00	• Interfacing the camera with the DVR with suitable medium depending on the wishing network / system if any. • Explain and collecting tools required to set up a surveillance system. • Discuss with the other team members and about the required specification of a system. • Help the team member as a good support worker to create and surveillance system and remain quite and patience at the time of installation / fault finding.	ELE/N4610 ELE/N9909	a)Coaxial. b) Fiber optic. c)cat• 5 d) Crimper e)Cutter. d) Connectors.
10	Survey, planning & maintenance.	02:00	03:00	• Making a good site survey and identifying the location of the camera to be fixed. • Selecting the suitable camera depending on the coverage area required by the customer. • Help & co• operate with the team members while taking measurement of the site.	ELE/N4609 ELE/N4610 ELE/N9909	a)DVR(Diff. Types). b)Camera(Diff. Types). C)Adapter. d)cable(Diff. Types). e)Screw driver. f)Display

			• Interfacing & connecting the camera and synchronizing it with control room. • To make understand the recording & retrieving process of previously recorded footage to the controller of the system. • Convince the customer about the best available camera for better surveillance.		
11	Interaction with the customers & colleagues, concept of team work	02:00	03:00	• Understand the basic requirements of the customer. • Help them to choose the best solution. • Continuous interaction with the customer for any installation or post installation maintenance	ELE/N4609 ELE/N9909	a)Laptop. b)Projector.
	Total Duration:	**27**	**41**	**Unique Equipment Required:**		
		—	—	**Camera(diff. types)** **DVR** **cables adapter** **Display device** **Screw driver set** **Lenses(diff. types)** **Laptop** **Internet Connection** **Connectors** **Crimper** **Cutter** **Projector**		

Grand Total Course Duration: **68 Hours 00 Minutes**

Annexure1: Assessment Criteria

Assessment Criteria for "CCTV Installation Technician"

Job Role	**CCTV Installation Technician**
Qualification Pack	**IAS/ELE/Q8101version1.0**
Sector Skill Council	**IASC**

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. SSC 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 SSC.
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 evaluations for skill practical for every student at each examination/training centre based on this criteria
5	To pass the Qualification Pack , every trainee should score a minimum of 70% in every NOS
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.