



GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI-25

STATE PROJECT COORDINATION UNIT

(Established under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	CCTV INSTALLATION
Course Code	EC/2020/015
Course Duration	40 Hours
Minimum Eligibility Criteria	10 th /+2/ITI/Diploma/Graduate
Pre-requisites (if any)	-
Course Objectives	Training module has been designed for the participants to • Understand the operation and installation of CCTV systems • Understand the fundamental elements that make up a CCTV System. • Provide Awareness of the changing technology and it's impact on the industry
Course Outcomes	At the end of training, the trainees will be able to • Install CCTV System • Set up a Camera, Monitor, Switches, Quads, Multiplexer and recording devices. • Perform commissioning and maintenance of CCTV projects
Expected Job Roles	CCTV Installation Technician

TEACHING AND SCHEME OF EXAMINATION

Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
EC/2020/015	CCTV INSTALLATION	Theory	16	10	20	3 Hours
		Practical	24	40	80	
		Total	40	50	100	

EC/2020/015–CCTV INSTALLATION

DETAILED SYLLABUS

Unit No	Modules	No.of.Hours	
		Theory	Practical
I	CCTV Camera	15 Hours	
1.1	Introduction to CCTV System	09	06
1.2	Elements of a basic CCTV system:- Camera, monitor and digital recorder		
1.3	Camera types and uses:- Fixed and movable, indoor and outdoor, monochrome and colour, day and night.		
1.4	Camera specifications:- Sensitivity, signal to noise ratio and resolution		
1.5	Back Focus adjustment, Lens types:- Fixed and variable focal length, manual and motorised zoom		
II	CCTV Monitor and Accessories	15 Hours	
2.1	Switches, Quads, Multiplexers and control systems: – Types and applications.	05	10
2.2	Monitors and Multiple screen displays.		
2.3	Cables and connectors: – Types, uses, limitations, preparation and testing		
2.4	Recording Equipments, Mobile Phone viewing configuration		
2.5	Time-lapse recording. Reviewing video footage		
2.6	Practical:Connect and set up Cameras using coaxial cable		
III	Commissioning and Maintenance	10 Hours	
3.1	Practical:Commissioning of CCTV System, Measuring resolution	02	08
3.2	Practical:Connection to other security systems, Preventive Maintenance		
3.3	Practical:Fault location using test equipment includingMultimeters,Light Meters and Cable Length Meters.		
3.4	Relevant standards		
3.5	Introduction to Digital CCTV and IP technology, Configure an IP/Network CCTV solutions		
Total Theory / Practical Hours		16	24
Total hours		40	

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1	CCTV Camera
2	Soldering iron
3	Multimeter
4	Light Meter and Cable Tester

SOFTWARE REQUIREMENT

NIL

REFERENCE BOOKS

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1	Closed Circuit Television: CCTV Installation, Maintenance and Operation	Joe Cieszynski	Newness
2	CCTV Surveillance: Video Practices and Technology	Herman Kruegle	Elsevier
3	CCTV: Networking and Digital Technology	VladoDamjanovski	Butterworth-Heinemann

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the CIICP Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the CIICP Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The passing criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training, certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

END EXAMINATION

ALLOCATION OF MARKS

S.NO	Description	Max. Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Objective and Circuit Diagram	20
	b)Procedure and Connections / Execution	20
	c)Result and Viva	20
	d)Record	20
Total Marks		100

THEORY MODEL QUESTION PAPER

EC/2020/015 – CCTV INSTALLATION

(Maximum Marks: 20)

(N.B: Answer any Twenty questions)

20x1= 20 Marks

1. Expand CCTV.
2. What are the basic components of CCTV?
3. What are the types of cameras?
4. Write the specifications of camera.
5. Give the differences between indoor and outdoor camera.
6. What is SNR?
7. Define Resolution.
8. What are the different types of lens in camera?
9. What type of monitor is best for CCTV?
10. What are the accessories of CCTV?
11. Define Multiplexer.
12. Which cables are used in CCTV?
13. Which cable is used in analog camera?
14. What equipment is needed for security cameras?
15. What is the difference between surveillance cameras and security cameras?
16. What is the best configuration for mobile in CCTV?
17. What is time-lapse recording camera?
18. How does time-lapse camera work?
19. What are the standards for CCTV?
20. What is the best resolution for CCTV camera?
21. What is the standard height of CCTV camera?
22. What is IP technology in CCTV camera?
23. What are the advantages of IP cameras?
24. What is network CCTV camera?
25. Write the step by step procedure for network configuration.