



## CCTV Installation & Servicing

### Training Details

<b>Course Code</b>	<b>: HCCC75</b>
<b>Course Name</b>	<b>: CCTV Installation &amp; Servicing</b>
<b>Duration</b>	<b>: 2 Months</b>
<b>Eligibility</b>	<b>: Diploma, BE, ME, EIE, EEE, ECE /+2 / Equivalent</b>

### Syllabus:

#### SESSION-1

- **CCTV INTRODUCTION:** What is Security Systems, What is Security Systems, How to Select a CCTV Camera, Peripherals available in the Security Systems, History of CCTV Cameras, CCTV Uses, Indore & Out door CCTV Systems, Measured Resolution, Monitor & CCTV Resolution CCTV Manufacturing Companies CCTV Spare parts & Accessories Basic Units & Lx

#### SESSION-2

- **TOOLS & SPARES:** CCTV Installation Tools-Video Class Cable Laying Tools-Video Class Chip Level Servicing Tools-Video Class Band Width Compression-Reference Video Balance Tools to Explain into PPT Type

#### SESSION-3

- **CCTV CAMERA MODELS & TYPES:** Explain Various Camera and its categories PPT Class B&W Security Camera, Color Security Camera, Dome Security Camera, Outdoor Security Camera Pan Tilt Zoom Camera (PTZ), Network IP Camera Wireless Security Camera, Hidden Security Camera C /CS Mount Cameras, Day & Night Camera, IR Camera, IR Dual Camera, Speed Dome Cameras.

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Zoom Cameras, Bullet Camera's, Full Size Camera's, Fixed Size Camera's, Camera Introduction-Video Class 2 Reference about CCTV Camera –Video

#### **SESSION-4**

- **CCTV ADVANCED CAMERA ENQUIPEMENTS:** - Explain Various Types of Latest Cameras Spy Camera, Under Water Camera, Remote Joysticks, Digital, Mini USB Camera, Clock Camera, Mico CMOS Camera, Mini DV Camera, HD Recorder & Etc. What is Dynamic Range of CCTV-Reference Video Class How to Install Spy & Hidden Camera-2 Ref. Video Class & PPT Class

#### **SESSION-5**

- **CAMERA LENS:** - What is CCTV Camera Lens Types Manual Iris Lens, Auto iris lens, ZOOM lens, Machine Vision Mega Pixel Lens Sigma lens, Camera digital lens, Pinhole Lens, Optical, Lens, Monofocal Lens. C or CS Mount Lens, Video Drive Lens Direct drive lenses Focal Length, Depth of Field, Formula of Lens Calculation Various Lens Difference Explanation by Pictures Resolution explanation, D1, CIF, QCIF Pictures Lens Related Glossary Lens Explanation 2 Reference Videos

#### **SESSION-6**

- **LIGHTING CONCEPTS:** - What is Lighting Concepts Sources of Lights What is Color Infrared and its Explanation Color and Monochrome Light & Surface Reflections Concepts & Its Types Illumination Concepts & Measurements Lighting, Illumination 2 Reference Videos Depth of Fields, Field of View 2 Reference Videos

#### **SESSION-7**

- **ADAPTER DETAILS:** Various Voltages Need for Cameras Like 12, 24, 12v AC Types of Power Supply Like Individual Plug in Transformers, Power Over Ethernet, Relay Model, Timer Model, Rack mount Model Power Supply Liberator & Etc. Camera Power Supplies, Half Wave, Full wave, Full wave Bridge Rectifier Explanation –Video Class Stand Alone Adapter Working Func

#### **SESSION-8**

- **CCTV MONITORS:** - What is CCTV Monitors & Its Advantages Difference Between CCTV Monitor & Commercial Monitor Pixels Explanation, NTSC & PAL Standard, Monitor Resolution, Types of Monitor (B&W, Color), Various Size of the Monitors Frame Rate, Resolution, Display 3 Reference Video

#### **SESSION-9**

- **TRANSMISSION MEDIUM (CABLES/WIRELESS):** - What is Transmission Media/Guided Media Band width Comparison, Types of Transmission Media like Open Wire, Twisted Pair, Coaxial Cables Fiber Optic Cables, Adapters Explanation RCA /DIN /HDMI /RG6, RG11, RG58, RG59 Coax Cables

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Wireless Transmitter & Receiver Various Types of Wireless Channels Transmitter/Receiver How to set the BNC with Coaxial Cable Connector –Video Class How to check the Connected Cables using Multi meter –Video Class Bulk Low Voltage Cable-Videos

#### **SESSION-10**

- **CCTV CAMERA CONNECTIVITY METHOD:** Switcher Assembled Concepts, Advantage, Disadvantage Switcher Readymade Concepts Quad Splitter Concepts, Types: -B&W, Color, VGA Times Laps VCR,DVR Stand Alone Types-VGA, HDMI Model Multiplexer Concepts Camera Connectivity Method Single Camera Connection by Video Class 4 Channel Quad –Ref. Videos Mini Quad Color –Ref. Videos

#### **SESSION-11**

- **SWITCHER (CUSTOMISED)** Customized Switcher Box & Readymade Switcher Box Difference Full Video Class

#### **SESSION-12**

- **SWITCHER (CUSTOMISED BLOCK DIAGRAM,CONNECTIVITY)** Customized Switcher Box Block Diagram & Connectivity Method by Chip Level Explanation Full Video Class

#### **SESSION-13**

- **SWITCHER (CUSTOMISED CCTV- AUDIO AMPLIFIER)** How to Connect Audio Amplifier Board with Customized Setup Box by Chip Level Explanation Full Video Class

#### **SESSION-14**

- **SWITCHER (READYMADE)** How to Connect Switcher with CCTV Camera Types of Switcher Like 4 Way Manual Video Switcher 8way Manual Switcher, Sequential Switchers Sequential Switcher (Position Premium),Digital Media Switcher (High end Switches),Wideband RGB Matrix Switcher, RCA Cable Switcher, IP Matrix Switch RF Matrix,Analog Switch Inside Block Diagram, Pin Detail, 8x8 Matrix Switcher –Ref. Video, Matrix Remote CCTV Ref. Video, Various Models Switcher Datasheet for Download

#### **SESSION-15**

- **QUAD -SPLITTER** What is CCTV Quad Splitter Connect using Monitor with Quad Systems Connect using Monitor/VGA with Quad Systems Types of Quad like B&W, Color Quad connect camera 4 No –Video Class Quad Dis-Assemble & Assembling Video – Video Class

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### SESSION-16

- MULTIPLEXER What is Multiplexer Functions of Multiplexer Like Encoding, Decoding &Etc Types of Multiplexer like Simplex, Duplex, Triplex 16 port Multiplexer Connection Diagram What are the Display Modes available in CCTV 4 Channel B&W Duplex CCTV Multiplexer Concepts Others Like 4 Channel Color Duplex CCTV Multiplexer , 6 Channel Color Duplex CCTV Multiplexer, 9 Channel B&W Duplex CCTV Multiplexer, 9 Channel Color Duplex CCTV Multiplexer, 10 Channel Duplex CCTV Multiplexer, 16 Channel B&W Duplex CCTV Multiplexer, 16 Channel Color Duplex CCTV Multiplexer 16 Channel CCTV Multiplexer –Ref.Video Multiplexer model2-Ref.Video Various Models Multiplexer Datasheet for Download

### SESSION-17

- DVR (DIGITAL VIDEO RECORDER) CARD Connection Diagram for DVR Card (Software based) System Requirement for DVR Card Installation Types of DVR Card like BNC,VGA,DVI Model DVI Port Pin Details Various Channel DVR Card Types, Video Output, Specification and Model Explanation Laptop DVR Card Concepts DVR Wireless Kit Concepts Recording format Jpeg, Mpeg Difference How to Set Dynamic DND-Reference Video

### SESSION-18

- DVR CARD INSTALLATION Details Explanation of DVR Card One Model Installation Full Visual PPT Class

### SESSION-19

- DVR STAND ALONE: - (CHIPLEVEL CLASS): - What is DVR Stand Alone, How DVR Works, DVR Future Working Block Diagram of DVR Stand Alone device Digital Recording Systems Block Diagram using DVR Various Models Showing 1. Stand Alone DVR Full Configuration -PART1 - Video Class 2. Stand Alone DVR Full Configuration -PART2 -Video Class 3. Stand Alone DVR Full Configuration -PART3 -Video Class 4. Stand Alone DVR Full Configuration -PART4 -Video Class

### SESSION-20

- WIRELESS CAMERA (CHIP LEVEL CLASS): - How to Connect Wireless Camera Installation-Video Class Chip Level Service of Wireless Camera-Video Class

### SESSION-21

- CCTV NETWORKING: - What is Remote CCTV Networking How to Connect Single & Multi Camera Remote Diagram Need of CCTV Monitoring System Advantage of CCTV Monitoring System

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Remote Server Concepts NVR Concepts Networking Software's sample Various Data Networks  
Comparison Wireless Access point Concepts Networking Related Glossary

## **SESSION-22**

- IP CAMERA: - What is IP Camera Advantages of IP Camera Installation of IP Camera How to Setup Your DVR for Remote View-Ref.Video IP Camera Configuration Remote Access-Ref.Video IP Camera Network Configuration Tutorial-Ref.Video CCTV IP Camera I Phone Application-Ref.Video I Phone Demo with IP Camera-Ref.Vide Remote viewing CCTV systems on the I-Phone4-Ref.Video

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