

Subject Teacher : Muhammad Shahidul Islam, Instructor
 Subject Name : Surveillance Security System
 Subject Code : 28565
 Technology : Computer
 Semester : 6th
 BTEB Text Book Name : Surveillance Security System (Publisher: Hoque)
 Reference Book Name :
 1 Digital video surveillance and security - Anthony c. caputo
 2 CCTV, Third Edition. - Vlado Damjanovske.
 3 CCTV Surveillance - Herman kruegle.
 4 Digital CCTV - Emily Harwood
 5 Electronic Access Control - Thomas L. Norman

Google Classroom Code- For CST(A)-[qwooy5b/](#) For CST(B)- [yfoxkif](#)

Subject Aims:

The surveillance security systems enhance students' knowledge, skills, and readiness for careers in industries where security is paramount. It also aligns with the growing demand for professionals capable of designing and managing modern surveillance solutions. Students can design a system to monitor, record, and analyze activities within a given area to enhance safety, prevent crime, and provide evidence in case of incidents. The system employs various sensors such as cameras, motion detectors, door/window sensors, and glass-break detectors, Types of Lens & their functions, DVR, NVR interface, Principles of remote access, networking basic.

Subject Outcome:

Learning Outcome (Theoretical)

After Completing the subject, students will be able to: 1. Interpret surveillance security System. 2. Explain Cameras, Lens and sensors. 3. Illustrate DVR, NVR interface and Remote access. 4. Analyze Video Signal and Control Signal Transmission 5. Elucidate Computer Networking 6. Illustrate installation of Surveillance system 7. Design and develop a surveillance security System

Learning Outcome (Practical)

Marks	Grade Point	Letter Grade	Marks	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B-
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	0-39	0.00	F

Class Timing Distribution	
Particulars	Time
Greeting with students	05 Minutes
Previous Class Review	05 Minutes
Present Class Topic Discussion and Lecture Delivery	30 Minutes
Present Class Topics Review	05 Minutes

Mark Distribution (for 100 Marks)			
Theory Marks(50)		Practical Marks(50)	
Midterm	10	PC	25
Class test	5	PF	25
Quiz test	5	-	-
Final	30	-	-
Total	50	Total	50

1. Identify Surveillance system requirements of a client aspect. 2. Prepare an installation plan through visual inspection 3. Identify proper components, equipment & tools. 4. Select Suitable cameras & DVR/NVR to the customer's requirements 5. Select an area to install necessary electrical & data cable warnings. 6. Install and Configure access control device and software. 7. Maintain working environment.

Date	Lecture	Chapter/ Exam / Industrial Visit	Learning Area	Learning Outcome	Class/Lab Supporting Equipment's
1-07-2024	01	1.surveillance security System. (Theory)	1.1 Define surveillance system. 1.2 State different types of surveillance	After the Class, Students will be able to: To know about surveillance system , pro's & con's of surveillance .	1. Projector. 2. Computer. <u>YouTube link:</u> https://youtu.be/Vle1iGiDE5E
2-07-2024	02	1.surveillance security System. (Theory)	1.3 Describe problems & constrains of surveillance. 1.4 State the uses of access control in Surveillance systems.	After the Class, Students will be able to: To know about problems & constrains of surveillance, access control in Surveillance systems	1. Projector. 2. Computer. <u>YouTube link:</u> https://youtu.be/Vle1iGiDE5E
3-07-2024	03	1.Requirements, prepare system diagram, Quotation and get approval from client. (Practical)	1.1 Collect requirements from Client . 1.2 Select products as per requirement . 1.3 Prepare Budget as per requirements . 1.4 Prepare design and diagram	After the Class, Students will be able to: To know how to Contact authorized person, about analyze client requirement,how to prepare budget , how to prepare system diagram.	1. Projector. 2. Computer. <u>YouTube link:</u> https://youtu.be/2OYnN2IPknU
4-07-2024	04	Continue... 1.Requirements, prepare system diagram, Quotation and get approval from client. (Practical)	1.5 Prepare a quotation as per requirements. 1.6 Approve quotation from client . 1.7 Maintain the record of performed task.	After the Class, Students will be able to: To know and quotation, Maintain the record.	1. Projector. 2. Computer. <u>YouTube link:</u> https://youtu.be/2OYnN2IPknU

7-07-2024	05	2.Testing equipment's and set up . (Practical)	2.1 Follow Occupational safety and health (OSH) practices. 2.2 Collect the necessary equipment' s and select BNC or Video balun, Power Adapter, Cable, Camera, DVR and NVR. 2.3 Connect and set up equipment's according to diagram. 2. 4 Test the equipment's . 2. 5 Identify and Isolate the faulty device. 2.6 Maintain the record of performed task	After the Class, Students will be able to: To know how to Collect the necessary equipment.	1. Projector. 2. Computer. 3.DVR/NVR
8-07-2024	06	3.Perform Power and Network Cable Wiring. (Practical)	3.1 Follow Occupational safety and health (OSH) practices . 3.2 Identify the power source . 3.3 Perform wiring as per required.	After the Class, Students will be able to: To know OSH ,Perform Power and Network Cable Wiring	1. Projector. 2. Computer. <u>YouTube link:</u> https://youtu.be/2OYnN2IPknU
9-07-2024	07	Continue.... 3.Perform Power and Network Cable Wiring. (Practical)	3.4 Install power equipment . 3.5 Connect cable according to diagram . 3.6 Connect different network equipment . 3.7 Maintain the record of performed task.	After the Class, Students will be able to: To know Connect cable, network equipment.	1. Projector. 2. Computer. <u>YouTube link:</u> https://youtu.be/2OYnN2IPknU
10-07-2024	08	Class Test-01	Examination Topic: Chapter 01 Examination mark: 05 Passing Mark: 02		1.Anser Script 2.Projectors
11-07-2024	09	2.Video surveillance. (Theory)	2.1 Define video surveillance. 2.2 Illustrate the Construction procedure of a video surveillance system	After the Class, Students will be able to: To know about video surveillance system. To know blocks and equipment required to implement a video surveillance system.	1. Projector. 2. Computer. <u>YouTube link:</u>

					https://www.youtube.com/watch?v=657yt4gYjRo https://www.youtube.com/watch?v=yIPuKY-no4c
14-07-2024	10	Continue... 2.Video surveillance. (Theory)	2.3 State the function of video surveillance. 2.4 Explain the essential components of the CCTV camera system	After the Class, Students will be able to: To Know the facts about CCTV and its interfacing devices	1. Projector. 2. Computer. YouTube link: https://www.youtube.com/watch?v=657yt4gYjRo https://www.youtube.com/watch?v=yIPuKY-no4c
15-07-2024	11	Continue... 2.Video surveillance. (Theory)	2.5 Explain construction procedure of various nodes and blocks in CCTV surveillance system	After the Class, Students will be able to: To Know the facts about CCTV and its interfacing devices	1. Projector. 2. Computer. YouTube link: https://www.youtube.com/watch?v=657yt4gYjRo https://www.youtube.com/watch?v=yIPuKY-no4c
16-07-2024	12	Continue... 2.Video surveillance. (Theory)	2.6 Explain Security policy model	After the Class, Students will be able to: To Know Security policy model	1. Projector. 2. Computer. YouTube link: https://www.youtube.com/watch?v=657yt4gYjRo https://www.youtube.com/watch?v=yIPuKY-no4c
17-07-2024	13	Review class	Chapter:2 (Regarding students problem)	Find out important Topic and Question	1. Projector. 2. Computer.

21-07-2024	14	Quiz Test 01	Examination Topic: Chapter 2 Examination mark: 05 Passing Mark: 02		1.Anser Script 2.Projectors
22-07-2024	15	3. Camera, Lens, sensors. (Theory)	3.1 Define pixels, camera, Lens and Sensor. 3.2 Describe the function of different types of cameras. 3.3 List different types of lenses	After the Class, Students will be able to: To know about various types of camera, Reassembling the camera, understand their mechanism	1. Projector. 2. Computer. 3.IP and HD Camera YouTube link: https://youtu.be/2uzmG7S7BmY
23-07-2024	16	Continue.... 3.Camera, Lens, sensors . (Theory)	3.4 State Fixed lenses, Zoom lenses, Varifocal lenses, Monofocal lenses, Wide Angle lenses with uses 3.5 State various types of CCTV drawing Symbols.	After the Class, Students will be able to: To Selecting suitable camera, different types of lens and their utility.	1. Projector. 2. Computer. 3.IP and HD Camera YouTube link: https://youtu.be/2uzmG7S7BmY
24-7-2024	17	Review class	Chapter:3 (Regarding students problem)		1. Projector. 2. Computer.
25-7-2024	18	Class Test-02	Examination Topic: Chapter 3 Examination mark: 5 Passing Mark: 02		1.Anser Script 2.Projectors
29-7-2024	19	4.Install and configure the CCTV camera (Practical)	4.1 Follow Occupational safety and health (OSH) practices. 4.2 Make survey and identify the location of the camera to be fixed. 4.3 Select the suitable camera depending on the coverage area required by the customer. 4.4 Connect power equipment of different CCTV Camera	After the Class, Students will be able to To Know the survey and identify the location	1. CCTV Camera. 2. Projector. 3. Computer YouTube link: https://youtu.be/cxv81ilBXdg

30-7-2024	20	Continue... 4. Install and configure the CCTV camera (Practical)	4.5 Select cable and connector (coaxial /twisted pair cable and BNC connectors / Video Balun). 4.6 Connect all the cables and cameras as per procedure. 4.7 Ensure all cable and connectors are connected properly . 4.8 After complete all procedure connect AC/DC Power Adapter with CCTV Camera. 4.9 Maintain the record of performed task	After the Class, Students will be able to To Know the weather proof Cable.	1. CCTV Camera. 2. Projector. 3. Computer YouTube link: https://youtu.be/cxv81ilBXdg
31-7-2024	21	4.DVR, NVR interface. (Theory)	4.1 Define DVR/NVR. 4.2 Describe the functions to view and record images transmitted by a camera using DVR/NVR	After the Class, Students will be able to To know about DVR/NVR and functions to view and record images transmitted by a camera using DVR/NVR.	1. DVR (<i>digital video recorder</i>) 2. NVR (network video recorder) YouTube link: https://youtu.be/NupY3DBIkjQ https://youtu.be/FcziBM3zkR4
01-8-2024	22	Continue... 4.Understand the DVR, NVR interface. (Theory)	4.3 State the uses of physical storage and cloud storage.	To know about DVR/NVR and functions to view and record images transmitted by a camera using DVR/NVR.	1. DVR (<i>digital video recorder</i>) 2. NVR (network video recorder) YouTube link: https://youtu.be/NupY3DBIkjQ https://youtu.be/FcziBM3zkR4
			4.4 Describe the recording format of a DVR and NVR. 4.5 Define remote access system	To know about DVR/NVR, physical storage and cloud storage and remote access system	

4-8-2024	23	Continue... 4.Understand the DVR, NVR interface. (Theory)	4.6 Mention the Advantage and disadvantage of remote access system.	To know about the advantages and disadvantages of remote access systems.	1. DVR (digital video recorder) 2. NVR (network video recorder) YouTube link: https://youtu.be/B-iorf6_8ik
5-8-2024	24	Review class	Chapter:4 (Regarding students problem)	Find out important Topic and Question	1. Projector. 2. Computer.
6-8-2024	25	Quiz Test-02	Examination Topic: Chapter 4 Examination mark: 08 Passing Mark: 3.2		1.Anser Script 2.Projectors
7-8-2024	26	5.Install and configure IP (and PTZ) camera (Practical)	5.1 Follow Occupational safety and health (OSH) practices. 5.2 Follow installation procedures as per manuals. 5.3 Mount the IP cameras such as pan, tilt, zoom . 5 .4 Connect power equipment / Use POE switch of IP Camera s . 5 .5 Assign IP address . 5.6 Maintain the record of performed tasks.	To know about 1. How to Assign IP Addresses for IP Cameras.	1.CCTV (IP and HD) Camera. 2.Projector. 3.Computer YouTube link: https://youtu.be/wVLWO-UY0aA
Mid Term Exam(Chapter 1-3);Marks-10;Pass Marks-8 (From 16-22 September)					
8-8-2024	28	6.Install and configure	6.1 Follow Occupational safety and health (OSH) practices. 6.2 Setup DVR/NVR as per diagram.	To know that all cameras, Monitor is connected (TV / PC) ,Assign IP Address .	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer

		DVR/NVR Machine. (Practical)	6.3 Install Hard disk in DVR/NVR. 6.4 Ensure that all cables and connectors are connected Properly. 6.5 Assign IP Address to connect DVR/NVR. 6.6 Install the appropriate software for remote monitoring. 6.7 Configure the DVR/NVR as per procedure . 6.8 Maintain the record of performed tasks.		YouTube link: https://youtu.be/sT6bbUuOmXA
11-8-2024	29	Class Test-03	Examination Topic: Chapter 36 Examination mark: 10 Passing Mark: 04		1.Anser Script 2.Projectors
12-8-2024	30	7.Configure the camera (Practical)	7.1 Follow Occupational safety and health (OSH) practices. 7.2 Perform control and configure/settings of camera such rotation, speed of movement in pan/tilt camera	To Know How to control and configure/settings of camera.	1.CCTV (IP and HD) Camera. 2.NVR and DVR 3.Projector. 4.Computer YouTube link: https://youtu.be/4CoEsqePADw
13-8-2024	31	7.Setup camera controls (Practical)	7.3 Use stable mounting structure and ensure that is not disturbance any circumstance.	To know camera installation.	1.CCTV (IP and HD) Camera. 2.NVR and DVR 3.Projector. 4.Computer YouTube link: https://youtu.be/4CoEsqePADw

			7.4 Ensure that cameras are protected from light while installing in outdoor. 7.5 Maintain the record of performed task		
14-8-2024	32	Review class	Chapter:7 (Regarding students problem)	Find out important Topic and Question	
15-8-2024	33	Quiz Test -3	Examination Topic: Chapter 7 Examination mark: 10 Passing Mark: 04		1.Anser Script 2.Projectors
18-08-2024	34	8.Backup data from DVR/NVR (Practical)	8.1 Follow Occupational safety and health (OSH) practices. 8.2 Connect external storage device to the DVR/NVR. 8.3 Use Backup Option from the DVR/NVR as per manual. 8.4 Select particular camera for backup the footage. 8.5 Set time and date to find the footage for backup. 8.6 select video format for backup such as dav, mp4, PAL, NTSC. 8.7 Start or Click Backup option. 8.8 Maintain the record of performed task	To Know how to Connect storage devices, backup, record.	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer <u>YouTube</u> link: https://youtu.be/ObNYIm7HJs8

19-8-2024	35	5. Surveillance system Installation. (Theory)	5.1 List the necessary equipment of Surveillance system.	To know necessary equipment of Surveillance system.	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer
20-8-2024	36	Continue 5. Surveillance system Installation. (Theory)	5.2 State the various type of cables uses in surveillance system	Know various type of cables uses in surveillance system	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer
21-8-2024	37	Continue 5. Surveillance system Installation. (Theory)	5.3 Describe the function and operation of Biometric device, Intercom, Door lock, Emergency Alarm	Know about the function and operation of Biometric device, Intercom, Door lock, Emergency Alarm	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer
22-8-2024	38	5.Surveillance system Installation. (Theory)	5.4 Illustrate the installation process of the Biometric system. 5.5 Describe the maintenance procedure of the Surveillance system.	To Know about Biometric system	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer
25-8-2024	39	Review class	Chapter:5 (Regarding students problem)	Find out important Topic and Question	
26-8-2024	40	9.Install and Configure Biometric and software (Practical)	9.1 Follow Occupational safety and health (OSH) practices. 9.2 Install and configure Biometric device. 9.3 Install and connect Biometric Device Software. 9.4 Enroll employes data in Biometric device	To know configure Biometric device.	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer
	41	9.Install and Configure Biometric and software (Practical)	9.5 Configure attendance time table for employees. 9.6 link employes data from devices to software.	To Configure attendance time table, Maintain the record of performed task.	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer

			9.7 Generate test Report and get output by software. 9.8 Maintain the record of performed task.		
27-8-2024	42	Class Test -4	Examination Topic: Chapter 5 Examination mark: 7 Passing Mark: 2.8		1.Anser Script 2.Projectors
28-8-2024	43	Review	All Chapter		
29-8-2024	44	10.Wireless series camera setup and install (Practical)	10.1 Follow Occupational safety and health (OSH) practices. 10.2 Select a wireless series camera from a specific company. 10.3 Read and get knowledge the camera mechanism from operational manual 10.4 Select and install SD Card for appropriate place of camera	To know about wireless series cameras, Select and install SD Cards.	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer
1-9-2024	45	10.Wireless series camera setup and install (Practical)	10.5 Mount the Device with appropriate place and position. 10.6 Connect the camera with a local Wi-Fi follow the instruction Manual. 10.7 Download the necessary software for remotely access. 10.8 Maintain the record of performed task	To know Mount the Device,Connect the camera, Download software, Maintain the record.	1. CCTV (IP and HD) Camera. 2.NVR and DVR 3. Projector. 4.Computer and Internet
2-9-2024	46	Review	All Practical		

RECOMMENDED BOOKS:

SL	Book Name	Writer Name	Publisher Name & Edition
01.	Digital Video Surveillance and Security	Anthony C. Caputo	Elseiver
02.	Security Engineering	Ross Anderson	Wiley
03.	Closed Circuit Television Third Edition	Joe Cieszynski	Elseiver
04	Digital CCTV	Emily Harwood	Elseiver

WEBSITE REFERENCES:

- 1.<https://www.dahuasecurity.com/support/training/eLearning>
- 2.<https://en.wikipedia.org/wiki/Surveillance>
3. https://en.wikipedia.org/wiki/Closed-circuit_television
4. https://en.wikipedia.org/wiki/Dynamic_Host_Configuration_Protocol
5. <https://www.google.com/> 6 <https://www.youtube.com/>