

Course Code	Course Title	L	T	P	C
1152EC148	VIDEO SURVEILLANCE SYSTEM	3	0	0	3

a) Course Category

Program Elective

b) Preamble

This course delivers camera classification, hardware, video management system, and video networking and CCTV systems.

c) Prerequisite

Nil

d) Related Courses

e) Course Outcomes

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on Revised Bloom's Taxonomy)
CO1	Discuss different types of camera.	K2
CO2	Explain digital video hardware	K2
CO3	Describe video management system.	K2
CO4	Familiarize the video networking concepts.	K2
CO5	Explain CCTV characteristics, components and system design.	K2

f)	Correlation of COs with POs													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	M	L	-	-	-	-	-	-	-	-	L	L	L	M
CO2	L	L	L	-	-	-	-	-	-	-	-	-	-	L
CO3	-	M	-	L	-	L	-	-	-	-	-	-	L	-
CO4	L	L	-	-	-	L	-	-	-	-	-	M	M	M

CO5	M	M	L	-	-	-	-	-	-	-	-	-	M	M
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g) Course Content

UNIT I	CAMERA CLASSIFICATION	9
Introduction, Analog camera, Digital Camera, Wired Camera, Wireless camera , HD Camera , IP/Network Cameras, Indoor/Outdoor Cameras, Pan/Tilt/Zoom Cameras and smart cameras.		
UNIT II	DIGITAL VIDEO HARDWARE	9
Evolution of Video Surveillance Hardware, selection of Right Cameras, PTZ Protocols and Communications, Two-Way Audio, Configuring and Commissioning Digital Video Encoders, Digital Video Cables and Connectors.		
UNIT III	VIDEO MANAGEMENT SYSTEMS (VMS)	9
Introduction to VMS, Dual VMS, Video Analytics, Troubleshooting .VMS Requirements, ,Portable Observation Device (POD), Edge Recording, storage and Security.		
UNIT IV	VIDEO NETWORKING	9
Introduction, Power of the Network, Networked Video Delivery Methods, Interference, Line of Sight (LOS), Wireless Mesh Networking, Wireless Security Options and Troubleshooting.		
UNIT V	CLOSED-CIRCUIT TELEVISION (CCTV) SYSTEMS	9
Characteristics of CCTV System Design, Components of CCTV, CCTV system design, case studies of ATM and Vehicle parking system.		
Total		45 Hrs

h) Learning Resources

Text Books

1. Anthony Caputo ,”Digital Video Surveillance and Security IIInd edition” , Elsevier 2014
2. Q. Huihuan, X. Wu, Y. Xu, “Intelligent Surveillance Systems”, Springer Publication, 2011.
3. H. Aghajan and A. Cavallaro (Ed.), Multi-Camera Network: Principles and Applications”, Elsevier, 2009.
4. Murat A. Tekalp, “Digital Video Processing”, Prentice Hall, 1995.
5. Y. Ma and G. Qian (Ed.), “Intelligent Video Surveillance: Systems and Technology”, CRC Press, 2009.
6. A senior (Ed.), “Privacy Protection in Video Surveillance”, Elsevier, 2009.
7. Dr. Richard Szeliski, “Computer Vision: Algorithms and Applications”, Springer Publication, 2010.