

Multimedia System Design	3	1	1	Basic of Linear Algebra and Programming
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Course Objective: To study the concepts of multimedia data, algorithms and compression.

S. NO	Course Outcomes (CO)
CO1	To describe Multimedia Information, Multimedia Objects and Multimedia in business and work.
CO2	To analyze Multimedia Building Blocks like Text, Sound MIDI, Digital Audio, audio file formats.
CO3	To apply Data Compression: Huffman Coding, Shannon Fano Algorithm.
CO4	To explain Speech Compression & Synthesis, Digital Audio concepts
CO5	To analyze Multiple monitors, bitmaps, Vector drawing.

S. NO	Contents	Contact Hours
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UNIT 1	Introduction to Multimedia, Multimedia Information, Multimedia Objects, Multimedia in business and work. Convergence of Computer, Communication and Entertainment Products, Stages of Multimedia Projects: Multimedia hardware, Memory & storage devices, Communication devices, Multimedia softwares, presentation tools, tools for object generations, video, sound, image capturing, authoring tools, card and page based authoring tools.	8
UNIT 2	Multimedia Building Blocks: Text, Sound MIDI, Digital Audio, audio file formats, MIDI under windows environment, Audio & Video Capture.	6
UNIT 3	Data Compression: Huffman Coding, Shannon Fano Algorithm, Huffman Algorithms, Adaptive Coding, Arithmetic Coding Higher Order Modeling. Finite Context Modeling, Dictionary based Compression, Sliding Window Compression, LZ77, LZW compression, Compression, Compression ratio loss less & lossy compression.	6
UNIT 4	Speech Compression & Synthesis : Digital Audio concepts, Sampling Variables, Loss less compression of sound, lossy compression & silence compression.	8
UNIT 5	Images: Multiple monitors, bitmaps, Vector drawing, lossy graphic compression, image file formats, animations, Images standards, JPEG Compression, Zigzag Coding	8
UNIT 6	Multimedia Database. Content based retrieval for text and images, Video: Video representation, Colors, Video Compression, MPEG standards, MHEG Standard Video Streaming on net, Video Conferencing, Multimedia Broadcast Services, Indexing and retrieval of Video Database, recent developments in Multimedia.	6
	TOTAL	42