Course code: Course Title	Course Structure			Pre-Requisite
SE308: Multimedia Systems	L	T	P	NIL
	3	1	0	

Course Objective: To study the concepts of multimedia data, algorithms and compression

S. NO	Course Outcomes (CO)
CO1	Understand the basic concepts of multimedia, stages of multimedia projects, tools, and techniques.
CO2	Apply multimedia building blocks in order to create multimedia digital content.
CO3	Understand and apply data compression algorithms and evaluate compression ratio
CO4	Analyze, understand, and evaluate speech compression techniques, synthesis techniques, and image processing methods.
CO5	Apply multimedia database techniques, video compression standards, and streaming technologies

S.No.	Contents	Contact Hours
UNIT 1	**Introduction:** 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 software's, presentation tools, tools for object generations, video, sound, image capturing, authoring tools, card and page-based authoring tools.	9
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 Modelling. Finite Context Modelling, Dictionary based Compression, Sliding Window Compression, LZ77, LZW compression, Compression, Compression ratio loss less & lossy compression.	9
UNIT 4	**Speech Compression & Synthesis:** Digital Audio concepts, Sampling Variables, Loss less compression of sound, loss compression & silence compression.	6
UNIT 5	**Images:** Multiple monitors, bitmaps, Vector drawing, lossy graphic compression, image file formats, animations, Images standards, JPEG Compression, Zigzag Coding	5
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.	7
	TOTAL	42

REFERENCES

S.No.	Name of Books/Authors/Publishers	Year of Publication / Reprint
1.	Tay Vaughan, "Multimedia, Making IT Work" Osborne McGraw Hill, 9th	2014