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|---|---|---|---|---|
| **Multimedia System Design** | **L** | **T** | **P** | Basic of Linear Algebra and Programming |
| | **3** | **1** | **0** | |

**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 inbusiness and work. Convergence of Computer, Communication and EntertainmentProducts ,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 basedCompression, 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 fileformats, animations, Images standards, JPEG Compression, Zigzag Coding | **8** |
| **UNIT6** | MultimediaDatabase. Content based retrieval for text and images, Video: Video representation, Colors,Video Compression, MPEG standards, MHEG Standard Video Streaming on net, VideoConferencing, Multimedia Broadcast Services, Indexing and retrieval of Video Database,recent developments in Multimedia. | **6** |
| | **TOTAL** | **42** |

**REFERENCES**

| **S.No.** | **Name of Books/Authors/Publishers** | **Year of Publication / Reprint** |
|---|---|---|
| **1** | Tay Vaughan “Multimedia, Making IT Work” Osborne McGraw Hill. (ISBN-10: 0072264527), 2014, 2010 | 2010 |
| **2** | Buford “Multimedia Systems” Addison Wesley (ISBN-13: 9780201532586), 2000 | 2000 |
| **3** | Agarwal & Tiwari “Multimedia Systems” Excel, 2002 | 2002 |