**Paper Code : FMM 504**
**Paper Name : Fundamentals of Multimedia**

| Teaching Hours (Per Week) | | Examination Scheme | | |
|---|---|---|---|---|
| TH. (hours) | Pr. (hours) | Internal | External | Total |
| | | Th. (marks) | Th. (marks) | 100 (marks) |
| 4 | | 30 | 70 | |

**Lectures = 68 Hours**

**UNIT–I** **15 Hours**

**Multimedia:** Needs and areas of use, Development platforms for multimedia – DOS, Windows, Linux. Identifying Multimedia elements – Text, Images, Sound, Animation and Video.

**Text –** Concepts of plain & formatted text, RTF & HTML texts, Conversion to and from of various text formats, Text compression principles, Source Encoder and Destination Decoder.

**Images –** Importance of graphics in multimedia, Vector and Raster graphics, image capturing methods – scanner, digital camera etc. various attributes of Images – size, color, depth etc, Various Image file format – BMP, DIB, EPS, CIF, PEX, PIC, JPG, TGA, PNG and TIF format – their features and limitations.

**UNIT-II** **14 Hours**

**Sound:** Sound and it Attributes, Mono V/s Stereo sound, Sound channels, Sound and its effect in multimedia, Analog V/s Digital sound, Basics of digital sound - Sampling, Frequency, Sound Depth, Channels, Sound on PC, Sound standards on PC, Capturing and Editing sound on PC. Overview of various sound file formats on PC – WAV, MP3, MP4, Ogg etc., Differential Pulse Coded Modulation (DPCM), Adaptive Differential PCM (ADPCM), MPEG Audio Coding.

**UNIT–III** **12 Hours**

**Animation:** Basics of animation, Principle and use of animation in multimedia, Effect of resolutions, pixel depth, Images size on quality and storage. Overview of 2-D and 3-D animation techniques and software. Animation on the Web – features and limitations, Software for animation.

**UNIT–IV** **15 Hours**

**Video:** Basics of Video – Analog and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, DirectX, Introduction to AV/DV and IEEE 1394 cards , Digitization of analog video to digital video, Interlacing and non-interlacing, Brief note on various video standards – NTSC, PAL, SECAM, HDTV, Introduction to video capturing Media & instrument – Videodisk, DVCAM, Camcorder, Introduction to digital video compression techniques and various file formats – AVI, MPEG, MOV Real Video.

**UNIT – V** **12 Hours**

**Multimedia on the Web:** Bandwidth relationship, broadband technologies, Text in the web – Dynamic and embedded font technology, Audio on the Web – Real Audio and MP3/MP4, Audio support in HTML, Graphics – HTML safe color palate, Interlaced V/s Non interlaced model, Graphics support in HTML, Video on the Web – Streaming video, Real Video, MPEG and SMIL.

**TEXT BOOKS**

1. ***Multimedia: Making It Work*** *(4th Edition) – by Tay Vaughan, Tata Mcgraw Hills.*
2. ***Fundamentals of Multimedia*** *– Ze-Nian Li and Mark S. Drew, Pearson Prentice Hall.*

**REFERENCE BOOKS**

1. ***Multimedia In Action –*** *James E Shuman – Vikas Publishing House.*
2. ***Multimedia Basics –*** *Volume – 1 Technology, Andreas Holzinger, Firewall Media(Laxmi Publications Pvt. Ltd) New Delhi.*