



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

Objective : The aim of the course is to give the students a thorough idea about the basics of multimedia like Text, Images, Sound, Animation, Video and the various formats of media, their file types, Compression techniques, Equipments used and usage in different forms in the IT field.

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 its 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.
3. **Principles of Multimedia** – Ranjan Parekh, Tata McGraw-Hill Education, 2006
4. **An Introduction to Digital Multimedia** – T.M. Savage, Karla E. Vogel, Jones & Bartlett, 2009
5. **The Ultimate Multimedia Handbook** – Jessica Keyes, McGraw Hill, 1997
6. **The Science of Digital Media** – Jennifer Burg, Prentice Hall, 2008
7. **Multimedia Demystified** – Apple Computer, Inc, Random House, 1994
8. **The Way Multimedia Works** – S.M.H. Collin, Microsoft Press, 1994
9. **Digital Multimedia** – Nigel P. Chapman, Jenny Chapman, Wiley, 2004
10. **Multimedia : A Management Perspective** – Antone F. Alber, Integrated Media Group, 1996