

M4.2-R4: INTRODUCTION TO MULTIMEDIA

Objective of the Course

This course aims to introduce the fundamental elements of multimedia. It will provide an understanding of the fundamental elements in multimedia. The emphasis will be on learning the representations, perceptions and applications of multimedia. Software skills and hands on work on digital media will also be emphasized. On completion of the subject, the students will understand the technologies behind multimedia applications and master the skills for developing multimedia projects. After successfully completing the module student should be able to:

- Summarize the key concepts in current multimedia technology.
- Create quality multimedia software titles.

Outline of Course

S. No.	Topic	Minimum number of hours
1.	Introduction to Multimedia	08
2.	Computer Fonts and Hypertext	10
3.	Audio fundamentals and representations	10
4.	Image Fundamentals and representations	10
5.	Video and Animation	10
6.	Multimedia Authoring	12
	Lectures	= 60
	Practical/tutorials	= 60
	Total	= 120

Detailed Syllabus

1. Introduction to Multimedia 08Hrs.

What is multimedia, Components of multimedia, Web and Internet multimedia applications, Transition from conventional media to digital media

2. Computer Fonts and Hypertext 10 Hrs.

Usage of text in Multimedia, Families and faces of fonts, outline fonts, bitmap fonts International character sets and hypertext, Digital fonts techniques.

3. Audio fundamentals and representations 10 Hrs.

Digitization of sound, frequency and bandwidth, decibel system, data rate, audio file format, Sound synthesis, MIDI, wavetable, Compression and transmission of audio on Internet, Adding sound to your multimedia project, Audio software and hardware.

4. Image fundamentals and representations 10 Hrs.

Colour Science , Colour, Colour Models, Colour palettes, Dithering, 2D Graphics, Image Compression and File Formats :GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS, PDF, Basic Image Processing [Can Use Photoshop], Use of image editing software, White balance correction, Dynamic range correction, Gamma correction, Photo Retouching.

5. Video and Animation 10 Hrs.

Video Basics , How Video Works, Broadcast Video Standards, Analog video, Digital video, Video Recording and Tape formats, Shooting and Editing Video (Use Adobe Premier for editing), Video Compression and File Formats. Video compression based on motion

compensation, MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21, Animation :Cell
Animation, Computer Animation, Morphing

6. Multimedia Authoring

12 Hrs.

Multimedia Authoring Basics, Some Authoring Tools, Macromedia Director & Flash

RECOMMENDED BOOKS

MAIN READING

1. Tay Vaughan, "Multimedia making it work" 6th Edition, Tata McGraw-Hill, 2004 Edition.
2. Rajneesh Agarwal & BB Tiwari, "Multimedia Systems", Excel Publication New Delhi.
3. Ze-Nian Li and mark S Drew, "Fundamentals of Multimedia" Pearson Education, 2004