MAT.O2.R0: - Introduction to Multimedia

Detailed Syllabus

1. Introduction to Multimedia: 08 Hrs.

2. Representation of Multimedia Objects: 20 Hrs.
   2.1 Representation of Analog Signals, A/D: Sampling and quantization
   2.2 Text: Font and their representation (bitmap, true type)
   2.3 Graphics: Raster & Vector representation, aliasing problems
   2.4 Image: (bit depth, resolution, color (RGB, CMYK, HSB), introduction to BMP, GIF, TIFF, PNG and JPEG formats)
   2.5 Audio (speech and wideband audio, sampling rate and aliasing, quantisation, introduction to MP3, WMA, WAV, MIDI etc.)
   2.6 Video (frame rate and resolution, interlaced and non-interlaced video, colour planes (YCBCR, YUV), Video broadcast standards (PAL, NTSC, SECAM), HD Video, 3D TV, Video representation: AVI, MPEG, Quick Time, real video (.rm)

3. Concepts of Multimedia Editing: 10Hrs.
   Digital Audio, Music Sequencing and Notation, Image/Graphics Editing, Video Editing (Linear, Non-linear), Subtitling

4. Introduction to Compression Technology 06 Hrs
   Concept of lossy and lossless compression. Concept of rate-distortion characteristics, Basics image compression (JPEG, JPEG 2000), Basics of Audio compression (MP3, MP4), Basics of Video Compression (MPEG, H.264)

5. Multimedia Application Design: 06 Hrs.
   Content design, technical design, visual design, design metaphors, example studies, interactivity
6. Multimedia Authoring and Publishing  

10 Hrs

Definition of an Authoring System, uses of an authoring system, Definition and function of Authoring Metaphor, Different Metaphors.

Offline Publishing: Flash, Power Point
Online Publishing: HTML5, Dreamweaver

Laboratory Assignments (broad areas):

Capturing & basic processing of media, Media cataloguing, Story boarding, scripting Basic animation & authoring tools.

MAIN READING

SUPPLEMENTARY READING