

Course Code	Course Name	Teaching Scheme Hrs./Week			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical/ Oral	Tutorial	Total
BEITC7054	Multimedia Systems	04	02	---	04	01	---	05

Course Code	Course Name	Examination Scheme							
		Theory Marks				Term Work	Practical	Oral	Total
		Internal assessment			End Sem. Exam				
		Test 1	Test 2	Avg. of 2 Tests					
BEITC7054	Multimedia Systems	20	20	20	80	25	---	25	150

### Course Objectives:

- To understand technical aspect of Multimedia Systems
- To understand and evaluate the process of development of Multimedia Systems
- To understand the framework and standards available for different Multimedia applications

### Course Outcomes:

Students will be able to understand the relevance and underlying infrastructure of multimedia systems. The purpose of this course is to make the students capable to apply their multimedia knowledge to understand the current requirements of multimedia products. The standards and frameworks introduced will help the students develop the multimedia systems as per industry standards

### Pre requisites:

Interactive I/O devices, Networking, basic concepts communication devices, Standards & frameworks

**DETAILED SYLLABUS:**

<b>Sr. No.</b>	<b>Module</b>	<b>Detailed Content</b>	<b>Hours</b>
1	Introduction to Multimedia	What is multimedia, Hypermedia, Multimedia tools, Multimedia Authoring & its Tools, VERML, File Formats.	2
2	Color in Images & Video	Colour Models for Images & Videos, Video Signals, Digital Video, MIDI, Quantization, Transmission of Audio	4
3	Compression Algorithms	Lossless Compression , Introduction, Basics, RLC , VLC, lossless Image Compression, Lossy Compression, introduction, Distortion, Rate Distortion Theory, Quantization	4
4	Image Compression Standards	JPEG standards, JPEG 2000 standards, JPEG –LS standards, Bi-Level Image Compression Standards	4
5	Video Compression Techniques	Introduction, Motion Compensation ,Motion vectors, H.261 & H.263, MPEG-1 & MPEG-2, MPEG-4, MPEG-7, MPEG-21	5
6	Audio Compression	ADPCM, Vocoders, Psychoacoustics, MPEG audio.	3
7	Multimedia Network Applications	Quality of Multimedia Data transmission, Multimedia over IP, Multimedia over ATM, Media on Demand, Multimedia over Wireless Network	6
8	Multimedia Data bases	Design and Architecture of Multimedia Data base, Types, Organization, Medias Abstraction, Query Language.	7
9	Frame Work for Multimedia Standards	Introduction, Standard Activates, Standard to build a news Global Information Infrastructure, Standardization process on Multimedia Communication, ITU-I Mediacom 2004 Framework, ISO/MPEG -21 Framework, IETF Multimedia Internet Standards.	6

10	Application layer:	Introduction, ITU applications, MPEG Application , Digital Broadcasting Applications, Universal multimedia access.	7
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**Text Books:**

- 1) Fundamentals of Multimedia by Ze-Nian Li & Mark.S.Drew
- 2) Introduction to Multimedia Communication, Application, Middleware, Networking by K.R.Roa, Zoran S,Bojkovic & Dragorad A. Milovanovic.

**References:**

Multimedia systems by Thakker

**Term work:**

Term work should include at least 8 experiments.

Journal must include at least 2 assignments.

Term work :- 25 marks (total) = 15 marks ( experiments) + 5 marks ( Assignments ) + 5 marks (attendance – theory + Practical).

**Oral exam will be based on the above syllabus.**

**Suggested Practical List (if any):**

- 1) Creating sample movies/ animations in flash.
- 2) Designing a multimedia application / multimedia authoring system.
- 3) Design a web application using dream viewer & fireworks
- 4) Construction of website using pictures, video, audio
- 5) Design a game application in flash
- 6) Record speech & perform compression & decompression
- 7) Case study on all file formats related to multimedia system
- 8) Case study on different authoring tools
- 9) Different levels of control in slide show presentation

**Theory Examination:**

1. Question paper will comprise of 6 questions, each carrying 20 marks.
2. Total 4 questions need to be solved.
3. Q.1 will be compulsory, based on entire syllabus wherein sub questions of 2 to 3 marks will be asked.
4. Remaining question will be randomly selected from all the modules.

Weightage of marks should be proportional to number of hours assigned to each module.