



SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Bachelor of Technology



B. Tech. Semester VI

Subject Name: Multimedia Systems

Subject Code: BTEC15601

Type of course: OE

Prerequisite: Knowledge of social networking

Rationale: This subject provides a practical introduction to various audio and video formats and how to combine different media on a web application. Subject explores multimedia software tools that help in developing multimedia applications.

Teaching and Examination Scheme:

Teaching Scheme				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	100
3	0	0	3	60	25	15	-	-	

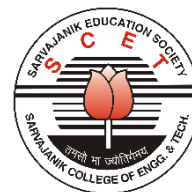
CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CA3:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Content:

Sr. no.	Topics	Teaching Hrs.	Module % Weightage
1.	Introduction To Multimedia: Components of Multimedia, History of Multimedia, Multimedia in the New Millennium, Multimedia Software Tools	4	10
2.	Multimedia data representation: Multimedia Presentation, Text file formats, Graphics/Image Data Types and File Formats, Color Science in image and video, Color Models in Images, Color Models in Video	6	10
3.	Concepts in Video: Analog Video, Digital Video, Video Display Interfaces, 3D Video and TV, Video Display Systems, Liquid crystal display (LCD), Plasma display panel (PDP)	5	10
4.	Basics of Digital Audio: Digitization of Sound, MIDI: Musical Instrument Digital Interface, Transmission of Audio	5	10
5.	Data Compression: Codec, Types of compression, Lossless Compression Algorithms, Lossless Image Compression, Lossy Compression Algorithms,	5	10
6.	Compression Standards: JPEG Image coding MPEG standard overview, MPEG Audio standard, MPEG Video Standard, Overview of H.264 / H.265 standard, Audio Compression Techniques	6	15
7.	Multimedia Communications: Internet Technologies and	8	20



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	Protocols – IP, TCP and UDP, Quality-of-Service for Multimedia Communications, Protocols for Multimedia Transmission – HTTP, Real-Time Transport Protocol, Real-Time Control Protocol, Real-Time Streaming Protocol, Content Distribution Networks, Broadcast/Multicast Video-on-Demand, HTTP-Based Media Streaming		
8.	Multimedia Information Sharing: Social Media Sharing, Online Social Networking, YouTube Video Format and Meta-data, Characteristics of YouTube Video, Media Propagation in Online Social Networks, Cloud Computing for Multimedia Services, Cloud Computing Overview, Multimedia Cloud Computing	6	15

Suggested Specification table with Marks (Theory/Practical):

% Distribution of Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	10	25	15	15	25

Legends: R: Remembrance, **U:** Understanding; **A:** Application, **N:** Analyze, **E:** Evaluate **C:** Create and above Levels (**Revised Bloom’s Taxonomy**)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Text Books:

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	Fundamentals of Multimedia	Ze-Nian Li, Mark S. Drew, Jiangchuan Liu	Springer	2014	2 nd
2	Principals of Multimedia	Ranjan Parekh	Tata McGraw Hill	2008	5 th

Course Outcome:

Sr. No.	CO Statement After learning this subject students will be able to	Marks % weightage
CO-1	Explain data representation for text, graphics, image, sound and video.	10
CO-2	Discuss concepts of analog and digital video and display systems.	15
CO-3	Describe digitization of sound and its transmission.	15
CO-4	Explain need of codecs and lossy as well as lossless compression techniques.	20
CO-5	Discuss image, audio and video compression standards.	20
CO-6	Describe protocols for multimedia communication.	20



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Mapping with POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1	3	-	-	-	-	-	-	-	2	2	3	2
CO-2	3	-	-	-	-	-	-	-	2	2	2	2
CO-3	3	2	2	-	-	-	-	-	2	2	2	2
CO-4	3	2	2	-	-	-	-	-	3	2	3	3
CO-5	3	-	2	-	-	-	-	-	3	2	3	3