



K. S. INSTITUTE OF TECHNOLOGY

An Autonomous Institution under VTU, Approved by AICTE
Department of Computer Science & Engineering
M.Tech SECOND SEMESTER SYLLABUS

Course: Multimedia Communications		Semester	II
Course Code	25MSCS215D	CIE Marks	50
Teaching Hours/Week (L:P:SDA)	3:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Examination type (SEE)	Theory		
Course Objectives (Course Skill Set)			
<ul style="list-style-type: none">• Discuss the multimedia communications systems, application and basic principles.• Able to analyze multimedia streaming.• Performing and establishing multimedia communication terminals.			
Module-1			
Introduction, multimedia information representation, multimedia networks, multimedia applications, Application and networking terminology, network QoS and application QoS, Digitization principles,.Text, images, audio and video.			
Module-2			
Text and image compression, compression principles, text compression- Runlength, Huffman, LZW, Document Image compression using T2 and T3 coding, image compression- GIF, TIFF and JPEG.			
Module-3			
Audio and video compression, audio compression – principles, DPCM, ADPCM, Adaptive and Linear predictive coding, Code-Excited LPC, Perceptual coding, MPEG and Dolby coders video compression, video compression principles.			
Module-4			
Video compression standards: H.261, H.263, MPEG, MPEG 1, MPEG 2, MPEG-4 and Reversible VLCs, Standards for multimedia communications: Reference models, standards relating to interpersonal communications.			
Module-5			
Notion of synchronization, presentation requirements, reference model for synchronization, Introduction to SMIL, Multimedia operating systems, Resource management, process management techniques.			

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

1. Three Unit Tests each of **25 Marks**
2. Two assignments each of **25 Marks** or **one Skill Development Activity of 25 marks** to attain the COs and Pos.
3. The sum of two tests, two assignments/skill Development Activities, will be scaled down to **50 marks**.

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

1. The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
2. The question paper consists of Part A and Part B. Part A consists of 10 questions from 5 modules, each carrying 2 marks.
3. Part B consists of 10 questions. Each full question is for 16 marks. There will be two full questions (with a maximum of three sub-questions) from each module.
4. Each full question will have a sub-question covering all the topics under a module.
5. The students will have to answer five full questions, selecting one full question from each module.

Suggested Learning Resources:

Text Books:

1. Multimedia Communications, Fred Halsall, Pearson education, 2001.
2. Multimedia: Computing, Communications and Applications, Raif Steinmetz, KlaraNahrstedt, Pearson education, 2002.
3. Multimedia Communication Systems, K. R. Rao, Zoran S. Bojkovic, Dragorad A. Milovanovic, Pearson education, 2004.

Web links and Video Lectures (e-Resources):

- <https://www.tutorialspoint.com/multimedia/index.htm>
- https://www.youtube.com/watch?v=NPQWUwR6vQ&list=PL6wr_B29b3UR5weQ80W8aYMkxEAz92IIC

Skill Development Activities Suggested:

The students with the help of the course teacher can take up relevant technical activities which will enhance their skill. The prepared report shall be evaluated for CIE marks.

Course outcome (Course Skill Set):

At the end of the course the student will be able to :

Sl. No.	Description	Blooms Level
CO1	Deploy the right multimedia communication models.	L3
CO2	Apply QoS to multimedia network applications with efficient routing techniques.	L3
CO3	Communicate clearly and concisely, visually, verbally and in writing, using techniques appropriate for the intended audience.	L2
CO4	Identify the basic components of a multimedia project.	L2

Program Outcome of this course:

Sl. No.	Description	POs
1	Engineering Knowledge: Apply knowledge of mathematics, science, engineering fundamentals, and a specialization to the solution of complex engineering problems.	PO1
2	Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles.	PO2
3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components that meet specified needs with consideration for public health and safety, cultural, societal, and environmental concerns.	PO3
4	Conduct Investigations of Complex Problems: Use research-based knowledge and methods including design of experiments, analysis, and interpretation of data, and synthesis of information to provide valid conclusions.	PO4
5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools to complex engineering activities with an understanding of limitations.	PO5
6	Engineer and Society / Project Management & Finance: Demonstrate knowledge and understanding of engineering and management principles to manage projects, as well as societal, health, safety, legal, and cultural issues.	PO6

Mapping of COs and POs

	PO1	PO2	PO3	PO4	PO5	PO6
CO1					X	
CO2	X					X
CO3						X
CO4		X		X		