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| **Subject Code**  **(20CST-334/20ITT-334)** | **MULTIMEDIA TECHNOLOGIES** | **L** | **T** | **P** | **S** | **C** |
|  | **Total Contact Hours: 30 Hours** | **2** | **0** | **0** | **0** | **2** |
|  | **CSE 3rd year** | | | | | |
| **Pre-requisites: Basic knowledge of elements of Multimedia.** | | | | | |
| **Marks -100** | | | | | | |
| **Internal - 60** | **External -40** | | | | | |
| **Course Objectives:** | | | | | | |
| 1. The aim of the syllabus is to provide orientation as regard to uses of Multimedia. 2. This course will explain the technologies underlying digital images, videos and audio contents, including various compression techniques and standards, and the issues to deliver multimedia content over the Internet. | | | | | | |
| Unit | Course Outcomes | | | | | |
| I | To identify the essential features of graphics/image data types, file formats, and color models in images and video | | | | | |
| II | To explain the technical details of multimedia data representations. | | | | | |
| III | To perform a comparative analysis of the major methods and algorithms for multimedia data compression. | | | | | |
| IV | To explain the technical details of popular multimedia compression standards. | | | | | |
| V | To perform different operations on videos. | | | | | |

Course Outcomes

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| --- | --- |
| CO1 | To identify the essential features of graphics/image data types, file formats, and color models in images and video. |
| CO2 | To explain the technical details of multimedia data representations. |
| CO3 | To perform a comparative analysis of the major methods and algorithms for multimedia data compression. |
| CO4 | To explain the technical details of popular multimedia compression standards. |
| CO5 | To perform different operations on videos. |

# Contents of the Syllabus:

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| --- | --- | --- |
| **Unit-1** | **INTRODUCTION** | **Contact Hours: 10** |
| **Chapter- 1(Introduction)** | What is multimedia, Components of multimedia, Web and Internet multimedia applications, Transition from conventional media to digital media. | |
| **Chapter-2(Computer**  **Fonts and Hypertext)** | Usage of text in Multimedia, Families and faces of fonts, outline fonts, bitmap fonts  International character sets and hypertext, Digital fonts techniques. | |
| **Unit-2** |  | **Contact Hours: 10** |
| **Chapter-3(Audio fundamental and**  **representations)** | 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. | |

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| **Chapter -4(Image fundamentals and representations)** | Colour Science, 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. | |
| **Unit-3** |  | **Contact Hours: 10** |
| **Chapter -5 (Video and Animation)** | 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. | |
| **Chapter-6 (Multimedia**  **Authoring)** | Multimedia Authoring Basics, Some Authoring Tools, Macromedia Director & Flash. | |

**TEXT BOOKS**

1. Tay Vaughan, “Multimedia making it work”, Tata McGraw-Hill, 2008.
2. Rajneesh Aggarwal & B. B Tiwari, “Multimedia Systems”, Excel Publication, New Delhi, 2007.
3. Li & Drew, “Fundamentals of Multimedia”, Pearson Education, 2009.

# REFERENCE BOOKS

1. Parekh Ranjan, “Principles of Multimedia”, Tata McGraw-Hill, 2007
2. Anirban Mukhopadhyay and Arup Chattopadhyay, “Introduction to Computer Graphics and Multimedia”, Second Edition, Vikas

Publishing House.

# Mode of Evaluation: The performance of students is evaluated as follows:

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|  | **Theory** | |
| **Components** | **Continuous Internal Assessment**  **(CAE)** | **Semester End Examination**  **(SEE)** |
| **Marks** | 40 | 60 |
| **Total Marks** | 100 | |
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**CO-PO Mapping**

