MULTIMEDIA AND APPLICATION DEVELOPMENT
(ELECTIVE I)

Course Code: 15IT2107

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Course Outcomes:
At the end of the course, a student will be able to
CO1: Identify the basic multimedia content types.
CO2: Write basic programs using Action Script language.
CO3: Explain data compression algorithms.
CO4: Discuss basics of video compression.
CO5: Identify different multimedia networks.

UNIT- I (10-Lectures)
Fundamental concepts in Text and Image: Multimedia and hypermedia, world wide web, overview of multimedia software tools. Graphics and image data representation graphics/image data types, file formats, Color in image and video: color science, color models in images, color models in video.
Fundamental concepts in video and digital audio: Types of video signals, analog video, digital video, digitization of sound, MIDI, quantization and transmission of audio.

UNIT- II (10-Lectures)
Action Script I: ActionScript Features, Object-Oriented ActionScript, Datatypes and Type Checking, Classes, Authoring an ActionScript Class.
Action Script II: Inheritance, Authoring an ActionScript 2.0 Subclass, Interfaces, Packages, Exceptions.

UNIT- III (10-Lectures)
Application Development: An OOP Application Frame work, Using Components with ActionScript, MovieClip Subclasses.

Multimedia data compression: Lossless compression algorithm: Run-Length Coding, Variable Length Coding, Dictionary Based Coding, Arithmetic Coding, Lossless Image Compression.

UNIT- IV (10-Lectures)

Lossy compression algorithm: Quantization, Transform Coding, Wavelet-Based Coding, Embedded Zerotree of Wavelet Coefficients Set Partitioning in Hierarchical Trees (SPIHT).

Basic Video Compression Techniques: Introduction to video compression, video compression based on motion compensation, search for motion vectors, MPEG, Basic Audio Compression Techniques.

UNIT- V (10-Lectures)

Multimedia Networks: Basics of Multimedia Networks, Multimedia Network Communications and Applications: Quality of Multimedia Data Transmission, Multimedia over IP, Multimedia over ATM Networks, Transport of MPEG-4, Media-on-Demand (MOD).

TEXT BOOKS:

1. Ze-Nian Li and Mark S.Drew, *Fundamentals of Multimedia*, 1st Edition, PHI/Pearson Education, 2004.
2. Colin Moock, *Essential ActionScript 3.0*, 1st Edition, SPD O'Reilly, 2007.

REFERENCES:

1. Nigel Chapman and Jenny Chapman: *Digital Multimedia*, 3 rd Edition, Wiley Dreamtech, 2009.
2. Steve Heath: *Multimedia and communications technology*, 2nd Edition, Elsevier (Focal Press), 1999.
3. Steinmetz, Ralf, Nahrstedt: *Multimedia Applications*, 1st Edition, Springer, 2004.
4. Weixel , *Multimedia Basics*, 2nd Edition, Thomson Press, 2006.

WEB REFERENCES:

http://livedocs.adobe.com/flash/9.0/main/flash_as3_programming.pdf