

IT6003 MULTIMEDIA COMPRESSION TECHNIQUES

DETAILED SYLLABUS

OBJECTIVES:

The student should be made to:

- Understand error–control coding.
- Understand encoding and decoding of digital data streams.
- Be familiar with the methods for the generation of these codes and their decoding techniques.
- Be aware of compression and decompression techniques.
- Learn the concepts of multimedia communication.

UNIT I MULTIMEDIA COMPONENTS

Introduction - Multimedia skills - Multimedia components and their characteristics - Text, sound, images, graphics, animation, video, hardware.

UNIT II AUDIO AND VIDEO COMPRESSION

Audio compression–DPCM-Adaptive PCM –adaptive predictive coding-linear Predictive coding-code excited LPC-perpetual coding Video compression –principles-H.261-H.263-MPEG 1, 2, and 4.

UNIT III TEXT AND IMAGE COMPRESSION

Compression principles-source encoders and destination encoders-lossless and lossy compression entropy encoding –source encoding -text compression – static Huffman coding dynamic coding – arithmetic coding –Lempel Ziv-Welsh Compression-image compression.

UNIT IV VOIP TECHNOLOGY

Basics of IP transport, VoIP challenges, H.323/ SIP –Network Architecture, Protocols, Call establishment and release, VoIP and SS7, Quality of Service- CODEC Methods- VOIP applicability.

UNIT V MULTIMEDIA NETWORKING

Multimedia networking -Applications-streamed stored and audio-making the best Effort service protocols for real time interactive Applications-distributing multimedia-beyond best effort service esecuding and policing Mechanisms-integrated services-differentiated Services-RSVP.

TEXT BOOKS:

1. Fred Halshall “Multimedia Communication - Applications, Networks, Protocols and Standards”, Pearson Education, 2007.
2. Tay Vaughan, “Multideai: Making it Work”, 7th Edition, TMH 2008 98.
3. Kurose and W.Ross” Computer Networking “a Top down Approach, Pearson Education 2005.

REFERENCES:

1. Marcus Goncalves "Voice over IP Networks", Mc Graw Hill 1999.
2. KR. Rao, Z S Bojkovic, D A Milovanovic, "Multimedia Communication Systems: Techniques, Standards, and Networks", Pearson Education 2007.
3. R. Steimnetz, K. Nahrstedt, "Multimedia Computing, Communications and Applications", Pearson Education Ranjan Parekh, "Principles of Multimedia", TMH 2007.