Course Title :     **Multimedia Computing**
Course Code :     COM 733.3
Credit :          3
Class Load :      3 hours
Evaluation :

|  | Theory | Practical | Total |
|---|---|---|---|
| Sessional | 50 | - | 50 |
| Final | 50 | - | 50 |
| Total | 100 | - | 100 |

**Course Objective:**
The main objective of this course covering three main domains of Multimedia
Systems : Devices, Systems and applications

**1. Introduction**                                                    **(4 Hrs)**
Multimedia and Personalized Computing, Multimedia on the MAP, Medium,
Multimedia system and properties, Data Streams Characteristics, Data Stream
Characteristics for Continuous Media, Information Units

**2. Sound / Audio System**                                            **(3 Hrs)**
Concepts of sound system, Music and speech, Speech Generation, Speech Analysis,
Speech Transmission

**3. Images and Graphics**                                             **(4 Hrs)**
Digital Image Representation, Image and graphics Format, Image Synthesis, analysis
and Transmission

**4. Video and Animation**                                             **(4 Hrs)**
Video signal representation, Computer Video Format, Television, Computer- Based
animation, Animation Language, Methods of controlling Animation, Display of
Animation, Transmission of Animation

**5. Data Compression**                                                **(4 Hrs)**
Storage Space, Coding Requirements, Source, Entropy and Hybrid Coding, JPEG,
Lossy Sequential DCT- based Mode, Expanded Lossy DCT-based Mode, Hierarchical
mode, MPEG, Video and Audio Encoding, DVI, Audio and still Image Encoding

**6. Communication Systems in Multimedia**                             **(4 Hrs)**
Application Subsystem, Transport subsystem, Quality of service and resource
management, Trends in collaborative Computing, Trends in Transport Systems,
Multimedia Database Management System

**7. Documents, Hypertext and MHEG (Multimedia and Hypermedia Information
Coding Expert Group)**                                                 **(5 Hrs)**
Documents, Hypertext and Hypermedia, Document Architecture SGML (standard
generalized markup language), Document Architecture ODA, MHEG

**8. User Interfaces**                                                 **(4 Hrs)**
Basic Design Issues, Video and Audio at the User Interface, User- friendliness as the
Primary Goal

**9. Synchronization**                                                 **(4 Hrs)**

## References

1. J. L. Henessy and D.A. Patterson, *Computer Architecture – A Quantitative Approach*, Third Edition, Morgan Kaufmann Publishers.
2. V. C. Hammacher, Z. G. Vranesic, and S. G. Zaky, *Computer Organization*, McGraw Hills
3. K. Hawang, Advanced Computer Architecture, McGraw Hills
4. J. L. Hennessy and D.A. Patterson, *Computer Organization and Design*, Second Edition, Morgan Kaufmann Publishers.
5. D. Sima, T. Fountain, and P. Kacsak, Advanced Computer Architecture – A Design Space Approach, Addison Wesley