Purpose
Multimedia is concerned with the digital representation, manipulation and communication of various types of data – text, images, graphics, audio and video. One motivating factor in incorporating multimedia data in modern-day information services is the overall improvement in the quality of the information delivered to the user. However, the storage, transport, retrieval, integration and presentation requirements of multimedia data differ significantly from those of traditional data types. The difference is primarily due to the spatio-temporal constraints imposed by multimedia data, the need for simultaneous consideration of different media types, and the subjective nature of multimedia data.

This course will provide an introduction to the general problems posed by the use, manipulation and transport of multimedia data in traditional computing and communication platforms. At the end of the course, it is expected that students would have understood the special requirements needed in a multimedia computing environment and the various methodologies that have been used in an effort to meet these requirements.

Contents:
♦ Multimedia data storage: multimedia object storage techniques, multimedia object decomposition
♦ Multimedia communications and transport: QoS management, multimedia transport, multimedia multicast, networked multimedia presentation and synchronization, error resilience in multimedia transmission,
♦ Multimedia information systems: indexing, retrieval, and searching; multimedia databases, digital watermarking
♦ Image and video processing for multimedia: image/video analysis and techniques for multimedia systems
♦ Multimedia data compression and standards: audio, image, and video compression techniques, compression standards

References:

Others
4. Papers and other reference materials to be provided on need basis

Assessment
One Assignment 10%
Student Project 30%
Student Seminar 20% (student presentation - 10 %; written report - 10%)
Final Test 40%

Important Dates (Estimates)
Assignment-1 September 14, 2001 (Due 2 weeks after)
Student Project October 15 (Due 3 weeks after)
Student Seminars from October 23, 2001
Final Test November 27, 20001