

CAP 6010 - Multimedia Systems

Prerequisites: COP 4610 Operating Systems or permission of instructor

Course Description: Multimedia systems concepts and characteristics. Multimedia compression techniques. Systems architectures for multimedia. Multimedia networking, communications, and synchronization. Multimedia operating systems. Video partitioning and retrieval. Multimedia systems and tools. Wireless multimedia. Multimedia applications. Student projects.

Textbook:

B. Furht, *Handbook of Multimedia Computing*, CRC Press, 1999.

Instructor: Dr. Borko Furht, Professor of CSE

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Goals: To provide an in-depth survey of the state-of-the-art in multimedia system design and applications. The student shall learn the basic techniques and standards for image and video compression (such as JPEG and MPEG), multimedia synchronization techniques, and operating system support for multimedia. In addition, the student will understand requirements of multimedia networks, both wireless and wireline, and protocols to support multimedia transmission.

Topics:

1. Introduction to multimedia systems
2. Image compression techniques and standards
3. Video compression techniques and standards
4. Motion estimation algorithms
5. Multimedia processor architectures
6. Image and video indexing and retrieval
7. Multimedia networks and communications
8. Multimedia integration and synchronization
9. Multimedia operating systems
10. Multimedia and the Internet
11. Wireless multimedia
12. Multimedia applications

Grading format:	Programming Assignments (20% and 30%)	50%
	Tests (20% and 30%)	50%

	TOTAL	100%