

**Dept. of Computer Science and Engineering  
Florida Atlantic University**

**COT 6930 – Video Communications**

**Spring 2005, TR 4:30 to 5:50 PM**

**Course Description:** Advances in computing and communications technologies have made possible powerful mobile devices with significant computational power. Delivering video services to such mobile devices is a challenging problem that requires research and understanding of the fundamental video communications technologies. This course is designed to provide a comprehensive learning and experience in the area of digital video communications. The course will cover the video coding standards widely used in the industry such as MPEG-2, MPEG-4, and H.264, as well as the communication technologies used to deliver video services such as RTP, video over IP networks, video multicasting, and 3G networks.

**Instructor:** Dr. Hari Kalva

**Telephone:** (561) 297-0511

**Web:** [www.cse.fau.edu/~hari](http://www.cse.fau.edu/~hari)

**E-mail:** [hari@cse.fau.edu](mailto:hari@cse.fau.edu)

**Office Hours:** TR 6:00 to 7:30 PM

**Prerequisite:** graduate status and basic knowledge of programming and communication networks or the permission of the instructor.

**Text book:** No required text book. A selection of research papers and lectures notes will be made available.

**Goals:** This course is intended to provide a background and experience in the area of video communications relevant to the industry needs today as well as the challenges and future developments in the field.

**Topics:**

1. Introduction to digital video compression
2. Video compression – MPEG-2, MPEG-4, H.264
3. Multimedia content representation (MPEG-4 Systems, LAsER, and SMIL)
4. Error resilience
5. Video delivery over IP networks
6. Video delivery over wireless networks
7. RTP (Realtime Transport Protocol)
8. Video Multicasting
9. Video services over 3G mobile networks
10. Video adaptation and transcoding
11. MPEG-21

**Grading:**

Midterm Exam:

~40%

Homework assignments and project: ~60%