

## **COT 6930 – Multimedia Programming**

**Course Description:** This is a graduate level course focusing on issues in developing efficient Multimedia software and systems. The course will use a video coding algorithm and analyze complexity and architecture dependencies. The course will introduce efficient programming techniques including software optimization, MMX programming, DirectShow architecture, and Intel performance tools. The course is expected to include hands-on development and will also have a few class room presentations by each student.

**Prerequisite:** COP 3530 Data Structures, otherwise, permission of the instructor.

**Text book:** List of relevant papers and reference material will be provided later.

**Instructor:** Dr. Hari Kalva

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

**Studio Time:** M W F 9:15 to 11:30 AM

**Office Hours:** M-W 2:00 to 3:30 PM

**Goals:** This course is intended to provide a background and experience in the area efficient multimedia software development in general. Students will be able to develop multimedia applications such as media players by the end of the course.

### **Topics:**

1. Introduction to digital video compression
2. Video compression –MPEG-4 and H.264
3. Video transcoding
4. Complexity estimation
5. Quality Vs complexity tradeoffs
6. Software optimization techniques
7. MMX programming
8. Microsoft DirectShow architecture
9. Intel multimedia programming tools and SDKs
10. Real's Helix DNA platform

### **Grading:**

About 5 assignments	50%
Term project	50%
No exam	