Course Number: CSC 690  
Course Title: Interactive Multimedia Application Development  
Number of Credits: 3  
Schedule: Three hours of lecture/discussion per week.  
Prerequisite: C or better in Programming Methodology (CS 340), or consent of instructor  

Brief Description  

This is a hands-on, project-based course. Students will learn the basics of multimedia data formats and algorithms, and build applications that work with multimedia data using non-standard interfaces such as game controllers and multi-touch surfaces. Emphasis is on using open-source libraries and affordable and easily available devices.  

Topics  

Digital data formats: audio, images, and video  
Sampling and quantization  
Color spaces and digital image filtering  
Analysis and feature extraction  
Use of non-traditional controllers/interfaces (multi-touch surfaces, video camera, Kinect, Wii, and other game controllers)  
Applications: content-based retrieval, multimedia annotation, audio/music visualization, interactive environments  

Course Objectives and Role in Program  
This is a hands-on, project-based course. The objectives include:  

• Overview of basic topics in multimedia  
• Overview of software technologies of non-traditional interfaces  
• Development of interactive multimedia applications  

Learning Outcomes  
At the end of this course students will  

• understand basic concepts related to MM including data standards, algorithms and software  
• experience development of multimedia software by utilizing existing libraries and descriptions of algorithms
• learn about cutting-edge multimedia topics through independent study and presentations in class

**Method of Evaluation**
Student learning will be evaluated on the basis of
• Completeness and quality of programming assignments.
• Grade on midterm examination.
• In-class presentations
• Evaluation of projects

**References**