

**ECE 6614 – Multimedia Communications:
Signal Processing, Networking, Applications, and Standards**

Topical Outline

Overview of Signal Compression

Speech Compression: Waveform coders and Analysis-synthesis coders

Audio Compression: Perceptual Transform Coding

Image Compression: Perceptual Transform Coding

Video Compression: Rate-distortion optimization of mode selection and motion compensation

Models of Channels and Networks

Standards for Wired and Wireless Networks

Media Communications over Imperfect Networks: Error resiliency and concealment

The Voice-User Interface: Speech synthesis and automatic speech recognition

The Visual-User Interface: Graphics and image recognition

Multimedia Information Retrieval: Indexing, databases, and semantics

Research Directions