THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Real-Time Digital Signal Processing Laboratory

ECE 5207

Credit Hours:
0.50

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lab

Course Description:
Real-time signal processing of acoustic signals and video images; finite impulse response filters; adaptive filtering; array processing; fast Fourier transform.

Prerequisites and Co-requisites:
Prereq or concur: 5200, and enrollment in ECE major or Grad standing in ECE.

Course Goals / Objectives:
- Students learn to use a software tool chain for implementing signal processing algorithms on real-time hardware.
- Students apply signals and systems concepts for real-time processing of both acoustic and image signals.
- Students learn to design, simulate, and deploy a real-time application of adaptive signal processing.

Course Topics:
- Introduction: familiarity with tool chain
- Image processing: real-time processing with camera
- Angle of arrival: array processing with sound card
- Sound effects processing
- Vocoder
- Adaptive filtering for system identification
- Adaptive filtering for interference cancellation

Designation:
Elective