Introduction to Discrete Time Signals & Systems Laboratory

ECE 2057

Course Description:
Introduction to sampled time signals and linear time invariant sampled time systems. Lab only.

Course Goals / Objectives:
Be competent with the fundamentals of discrete time linear time invariant (LTI) systems
Be competent in working in teams for laboratory experiments
Be competent in analyzing, designing and synthesizing discrete time LTI systems, including finite impulse response (FIR) and infinite impulse response (IIR) filters
Be familiar with how to implement designs in hardware using modern techniques such as FPGAs and microcontrollers
Be exposed to troubleshooting and debugging practices

Course Topics:
- Instrumentation and CAD tool review: oscilloscope, Matlab, microcontroller and FPGA programming
- FPGA implementation of discrete time filters (FIR, IIR)
- Microcontroller implementation of discrete time filters (FIR, IIR)

Grades Breakdown:

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<td>Lab Reports</td>
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Designation:
Required
**Instruction Modes:**
In Person (75-100% campus; 0-24% online)

**Representative Textbooks and Other Course Materials:**

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