

ECET 4610L: Control Systems Lab

1 Credit Hours

Concurrent:

ECET 4610

This lab course complements the ECET 4610 lectures. Students investigate feedback control systems including practical applications of compensation and PID concepts. Control system modeling, transient and steady state characteristics, stability and frequency response are analyzed. Compensation and controller design using Root locus methods are covered. The use of MATLAB in the analysis and design of control systems is emphasized. MATLAB is used in conjunction with all the laboratories.

ECET 4630: Digital Signal Processing

3 Credit Hours

Prerequisite: ECET 2210, ECET 2310, and ENGT 2000

An introduction to the concept of discrete and digital signals and systems. Difference equations, Discrete Fourier Transforms (DFTs), Fast Fourier Transforms (FFT), Z-Transform techniques, IIR filter design, and FIR filter design are covered. An introduction to the architecture, assembly language and application examples of general and special purpose microprocessors such as the TMS 320 and DSP56000 families is included.

ECET 4730: VHDL and Field Programmable Gate Arrays

3 Credit Hours

Prerequisite: ECET 2111 and ECET 2210

This course provides a thorough introduction to the Virtual Hardware Description Language (VHDL) and apply this knowledge to Field Programmable Gate Arrays (FPGA's). Current applications are presented and students design, develop, test and document complete FPGA based designs. The use of schematic capture tools for configuring FPGA's will also be covered.