



Microcontroller Lab

ECE 3567

Credit Hours:

1.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lab

Course Description:

Laboratory in which a microcontroller is used to interface real-world hardware to make a functioning system.

Prerequisites and Co-requisites:

Prereq: 2560 or CSE 2421, and enrollment in ECE, CSE, or EngPhysics major.

Course Goals / Objectives:

- Mastery of software development platforms such as Code Composer Studio
 - Competency with microcontroller architecture configuration with emphasis on the user's manual.
 - Mastery writing C Programming Language using the embedded code style. Familiarity with the unique features of embedded code and understanding how this is a departure from higher level applications
 - Be competent in using the microcontroller peripherals for applications such as Pulse Wave Modulated wave Generation, Arbitrary Wave Generation, Frequency Measurement, Analog to Digital Conversion and RC measurements.
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Course Topics:

- Software tools for programming in C Language such as editors, compilers and debuggers
 - Clock Module of a microcontroller
 - Timing Module of a microcontroller
 - PWM generation using the peripherals of a microcontroller
 - Arbitrary Signal generation using the peripherals of a microcontroller
 - Frequency measurements using the peripherals of a microcontroller
 - Handling Interrupts
 - Analog to Digital Conversion
 - Resistance and capacitance measurement using the peripherals of a microcontroller
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Designation:

Required

Elective