Advanced Microcomputers

ECE 5465

Credit Hours:
3.00 - 3.00

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

Course Components:
Lecture

Course Description:
An investigation of current microcomputer structures with emphasis on hardware implementation of I/O, direct memory access, interrupts, memory, and microprogramming.

Prerequisites and Co-requisites:
Prereq: 5362, or 662 and 694A, or Grad standing in Engineering.

Course Goals / Objectives:
- Learn the architecture of an advanced microprocessor and microcontroller
- Learn to evaluate and use peripheral support devices such a memory, parallel ports, serial ports, real time clocks
- Learn how to design large-scale embedded microprocessor and microcontroller based systems
- Learn how to develop advanced software to control real-time embedded systems including interrupts and exception handling
Course Topics:
- Architecture, programmer's model, and application of a 16/32 bit microprocessor.
- Assembly language programming.
- Interrupt and exception handling
- I/O support devices and interfacing
- Memory types and applications: static, dynamic, DMA
- Introduction to a modern microcontroller(s)
- Design examples

Designation:
Elective