THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

# 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