

ECE 4375: Microprocessor Architecture

Credit / Contact hours: 3 / 3

Course coordinator: Brian Nutter

Textbook(s) and/or other required material: N/A

Catalog description: An introduction to the architecture, organization, and design of microprocessors. Hardware design related to various microprocessors. Analysis of current microprocessors and applications.

Pre-requisite(s) or co-requisites: ECE 3362.

Designation: Selected Elective (CMPE); Elective (EE)

Course learning outcomes: Upon completion of this course, students should be able to do the following:

1. Analyze a basic microprocessor
2. Design a basic microprocessor
3. Describe the characteristics of a number of current microprocessors

Student outcomes addressed: a, b, c, e, g, j, and k.

Topics covered:

Microprogrammed control - 3 hours
A simple processor - 5 hours
Microprogramming primer - 5 hours
Computer control unit - 5 hours
Arithmetic control unit - 1 hours
Program control unit - 5 hours
Simple RISC processor - 5 hours
Current processors - 5 hour
Verilog - 4 hours
Tests and reviews - 4 hours