

Department of Electrical & Computer Engineering
LOUISIANA STATE UNIVERSITY

EE 4750: Microprocessor Interfacing Techniques

Instructor: A. El-Amawy, Professor of Electrical & Computer Engineering,
237 EE Building., Phone: 578-5249, e-mail: amawy@ee.lsu.edu

Textbook: None. Intel manuals and class reference material constitute the reference material for this course.

Catalog: 4750 Microprocessor Interfacing Techniques (4) *Prereq.: EE 3750 and 3751. 2 hrs. lecture; 6 hrs. lab. ABET category: 2 hrs. design; 2 hrs. engineering science.* Theory and design techniques of microprocessor interfaces to memory and input/output devices.

Goals: To familiarize the student with the basic design principles for different types of interfaces between the microprocessor and other system components.

Topics:

1. Introduction.
2. Bus Functions: Bus types, signal classification, bus timing, arbitration schemes, examples of existing buses.
3. Memory Interfacing: Basic timing requirements, memory types (SRAM, DRAM, FLASH, etc.), DRAM interfacing, FLASH interfacing, memory systems for multiprocessors, DMA controllers.
4. Serial Interfacing: Asynchronous protocols, RS-232, RS-422, RS-449, RS-423, synchronous protocols, SDLC vs. BISYNC, modem functions.
5. Mass Storage: Magnetic disk recording techniques, controller structure and commands, disk interfacing, optical recording techniques, optical disk interfacing.
6. CRT Interfacing: Basic CRT operation, controller structure, controller design, bit mapped displays, color displays.
7. Topics of current interest.

Grading:

MidTerm	25%
Final	25%
Lab	25%
Project	25%

No make-up tests will be given unless instructed to do so by the Dean's office.