Course Syllabus
ELEG 4393
Computer Architecture and Organization
Spring 2010

Instructor: Dr. Kelvin K. Kirby
Office: Room 352, Electrical Computer Engineering Building
Hours: 9:30 - 12:00 noon, Monday, Wednesday and Friday
        Appointments accepted Monday through Friday

Phone: (936) 261-9781 for Appointments

Course Coordinator: Dr. John O. Attia, Room 315, Electrical Engineering

Course: ELEG 4393
Title: Computer Architecture and Organization

Credit: 3 Semester Hours
Prerequisite: ELEG 3063, Logic Circuits

Textbook: Computer Organization and Design – The Hardware / Software Interface, by David A. Patterson


Catalog Description: Computer Architecture and Organization. (3-0) Credit 3 semester hours. An introduction to computer organization using assembly and machine language. Number representation, computer arithmetic, instruction sets, I/O interrupts, and programming interrupts. Projects involve detailed study and use of a specific computer hardware and software system. Prerequisite: ELEG 3063

Course Objectives: To continue student development in the basic concepts of computer organization, hardware interconnection structures and computer software systems. To provide experience in assembly language programming and interfacing. To design data path and control logic for digital systems, evaluate system performance for pipelined and non-pipelined architectures. Students will be exposed to the design, analysis, programming and demonstration of functional digital systems, using VHDL.

Content: Chapter 1: Computer Abstractions and Technology
Chapter 2: Instructions: Language of the Computer
Chapter 3: Arithmetic for Computers
Course Syllabus
ELEG 4393: Computer Architecture and Organization
Spring 2010

Course Assessment: The ABET Criteria and Outcomes to be assessed are:

a - ability to apply knowledge of mathematics, science and engineering
b – ability to design and conduct experiments as well as to analyze and interpret data
c - ability to design a system, component or process to meet desired needs
j – a knowledge of contemporary issues

Attendance: See University Class Attendance Policy.

Assignments: Homework and design problems will be assigned to complement each unit of instruction. Students will be required to turn in or demonstrate each assignment. Most assignments will be made, as a minimum, one week before the due date. Late assignments will only be accepted in the event of an excused absence, as defined by university attendance policy.

Examination Policy: Quizzes (15 - 20 minutes) will be administered on announced basis.

Ethics: Cheating or plagiarism on assignments or exams will not be tolerated. Proven cases of ethical violations will result in a zero for the assignment/exam and the possibility of further disciplinary actions in accordance with university policies.

Grading Policy: The following grading policy will be used as a guide to determine academic performance:

Homework and Quizzes ........................................ 20 %
Exam I .......................................................... 15 %
Exam II .......................................................... 15 %
Final Exam ..................................................... 20 %
Design Project I .............................................. 15 %
Design Project II ............................................. 15%

Total ........................................ 100%

Any deviation from the above grading policy will be discussed in advance with the class. Such deviations will be considered only in situations to provide learning enrichment opportunities for the entire class.

Note:  Students with disabilities who believe that they may need and academic adjustment in this class, are encouraged to contact the Office for Students with Disabilities at (936) 261-3585 as soon as possible to better ensure receipt of timely adjustments. Once you receive a letter from the Office for Disability Services, kindly make an appointment with me to discuss appropriate adjustments for this class.