COURSE SYLLABUS

Spring 2013

Digital Logic circuits
ELTR 240
M 6:30 p.m.-8:30 p.m. 1307
W 6:30 p.m.-9:50 p.m. 1307

Instructor: **Francisco Mayoral**   Room: 1307
Industrial Electronic Engineer
Master of Information Systems
E-mail: Francisco.mayoral@imperial.edu   Message phone:760 554 9673

Course Overview:

Objectives :
Learn the principles and use of basic digital devices. Use logic elements to create and evaluate truth tables. Evaluate the design and electronic organization of small computer system.

Course Outline:
1 .- An overview of digital technology.
2.- Logic circuits AND, OR, Not logic and truth tables for switching theory .
3.- Advance logic circuits NAND, NOR, XOR elements Boolean expressions and DeMorgan's Theorem.
4.- Design of logic circuits using truth tables and Karnaugh maps. Sequential logic.
5.- Flip-flops.
6.- Coding systems Binary, Octal and Hexadecimal.
7.- Computer systems architecture.
8.- Other logic systems TTL, Microcontrollers and PLCs.

Student Learning Outcomes:

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Familiarize with Number Systems and Conversion Methods. ILO2, ILO4, ILO5.
2. Describe the functions of Logic Gates and reduction techniques using Boolean Algebra and Karnaugh Maps. ILO2, ILO4, ILO5.
3. Analyze Truth tables and obtain their respective logic equation and digital circuit. ILO2, ILO4, ILO5.
4. Construct, test and troubleshoot various sequential circuits using Flip-Flops, counters, PLDs, and microcontrollers. ILO2, ILO4, ILO5.
5. Write software programs for embedded processors, and test them using proto boards. ILO2, ILO4, ILO5.

Text book Required:
Book: Digital Principles Third Edition, by Roger L. Tokheim.
Schaum's Outlines, McGraw Hill

Attendance Policy:
Regular attendance in this course is expected for all students enrolled. Students must have an explanation for everyday they are absent. The only justifiable absences are injury or serious illness of the student or family member.

A student can be suspended if he/she is disturbing and/or is disrespectful in class.
Profane language is no permitted in the classroom.
Please address your instructor as Mr. Mayoral.

Grading Policies and procedures:
Assignments and reviews must be completed by their due date or they will receive no credit.
You will receive notification of points earned on each assignment or reviews.
Assignments they are reading like homework or investigation for to get extra credits. Reviews, individual test, for support or help in the Mid Term and Final Examinations.
Shop practices must to be observed basic safety rules by teacher instructions.

Lab practices 70%
Exams   30%
Total score 100%

Interaction with the instructor and other students is an integral part of the learning process. However, all work submitted for grading must be your own. School policy states a student may be dropped from a course for cheating or plagiarizing.

Additional information: Please turn off or silence your cell phones, no texting or internet while in class. No music, no horseplay while in shop practices.

Grade scale
90 - 100 = A
80 - 89 = B
70 - 79 = C
60 – 69 = D

A total of 100 points grade is possible for this course if you are taking the course pass/no pass you will need the equivalent 70 % minimum to pass.

NEED FOR ASSISTANCE:

If you have any condition, such as a physical or learning disability, for which you need extra assistance, please provide your instructor with information regarding your special needs so that appropriate accommodations can be made. You should meet with the DSP&S support staff and counselors.

NOTICE:

The instructor reserves the right to modify, change or add the number of assignments or exams.