DIGITAL SYSTEMS ENGINEERING LAB (ELEE/ CMPE 2130)

ELEE/CMPE 2130 Digital System I Lab

**Syllabus**

CLASS TIME: Refer to your class schedule
CLASSROOM: ENGR 2.242

INSTRUCTOR: Staff/TBA
OFFICE: Given in the Lab
OFFICE PHONE: Given in the Lab
OFFICE HOURS: Given in the Lab

TEXT: Laboratory Manual can be downloaded from the website provided by the Lab Instructor

**Grading Policy**

- Prelab & Report* 70 %
- Functioning Project 30 % (15% designing, 15% building)

*Some of the labs will require formal lab write-up. Read the lab handouts carefully. The final grade will be based on your attendance, lab reports as well as your performance during the lab.

**Remember, before you go to classroom for LAB, you have to**

1) Download the lab handout from the website provided by your Lab Instructor
2) Read the handout carefully, and complete the prelab.

**Also remember, after each LAB, complete the LAB report according to the handout, and turn it in at the next LAB class.**

Assignments turned in late will incur a 50% penalty the first week; late assignments will not be accepted after a week. Please make prior arrangements for class absences without which no make-up will be offered for missed tests/exams.

Prelab is your PREparation before coming to the LAB. There are two general aspects of prelab. In some experiments, you will use the lab facilities to experimentally verify the theoretical concepts you learned in the class. Thus, you must determine the theoretical results before coming to the lab; otherwise, what you did in the lab would not be of any use. In other cases, you will have to design and test the system. Unless you did your design before coming to the lab, you would not be able to focus on the verification aspects of your design in the lab. Besides, the duration of the lab period may not be enough for you to do the design. Therefore, as prelab, you must come to the lab with your theoretical predictions and designs for every experiment. Your instructor/lab assistant will check the prelab at the beginning of the lab period, and you will lose 50% of the lab grade for not having a satisfactory prelab. Also, you will need to attach the signed copy of the prelab along with your final documentation to be submitted to your instructor.

In order to verify that you completed the experiment satisfactorily, you will be required to demonstrate some or all aspects of your lab to your instructor/lab assistant. Check with your instructor/lab assistant in the class.
Tentative Lab Experiments (some changes may be made by your Lab TA)-Handouts for detailed lab experiments will be provided in the lab

<table>
<thead>
<tr>
<th>No.</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Behavior of basic logic gates</td>
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<tr>
<td>2</td>
<td>SOP Implementation of Boolean expressions</td>
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<td>3</td>
<td>POS Implementation of Boolean expressions</td>
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<td>4</td>
<td>Two’s complement addition</td>
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<td>5</td>
<td>Combinatorial Design</td>
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<td>6</td>
<td>Trade-offs among Combinatorial Design Implementation</td>
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<tr>
<td>7</td>
<td>Code Converters and Multiplexers</td>
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<tr>
<td>8</td>
<td>Latches</td>
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<tr>
<td>9</td>
<td>Flip-Flops</td>
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<tr>
<td>10</td>
<td>Synchronous Sequential Circuits</td>
</tr>
<tr>
<td>11</td>
<td>Design of Finite State Machines (FSMs) with Flip-Flop Devices.</td>
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LEARNING OUTCOMES:
1) Understand the SSI implementations of digital logic circuits.
2) Understand the practical issues of digital circuits, and interpret the experimental results.
3) Use some basic instruments, such as power supplier, multi-meter, and oscilloscope.
4) Obtain information out of text books (chip datasheet from websites).

This course helps to satisfy the following outcomes for the BSEE program (B5) or the BSCE program (B2).
“(B5 of EE or B2 for CE) an understanding of the practical limitations of digital and analog circuits, familiarity with laboratory measurement techniques, and the ability to experimentally demonstrate digital and analog circuit performance.”

ATTENDANCE:
Regular attendance in all meetings of this course for which the student is registered is required.

DELINQUENT EQUIPMENT:
Students who have checked out tools or equipment from the lab technician should return the items at the time specified, and no later than the end of the semester. Students reported as having overdue equipment at the end of the semester will receive a grade of Incomplete.

**UTRGV Policy Statements**

**STUDENTS WITH DISABILITIES:**
If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus:** Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@utrgv.edu.

**MANDATORY COURSE EVALUATION PERIOD:**
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Online evaluations will be available for last 20 days of the semester. Students who complete their evaluations will have priority access to their grades.

**ATTENDANCE:**
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holydays; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**SCHOLASTIC INTEGRITY:**
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

**SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:**
In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

**COURSE DROPS:**
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.