CSE 2441: Introduction to Digital Logic
Spring 2012 - All Sections

Official Location of This Document:

http://crystal.uta.edu/~zaruba/CSE2441/CSE2441-syllabus.pdf

Short Course Description:

The analysis and design of combinational and sequential logic circuits. Topics include Boolean algebra, logic circuit minimization techniques, synchronous sequential circuit design, algorithmic state machine design, design of arithmetic/logic and control units. Computer aided design tools are utilized throughout the course. There is a lab section mandatory to sign up. The lab is closely tied to the lectures.

Prerequisites:

- CSE 1320 (Intermediate Programming)
- CSE 2315 (Discrete Structures)

Instructor: Gergely Záruba

- Office: 523 ERB
- Phone: (817) 272-3602
- Office hours: Tuesdays and Thursdays 1:00pm – 1:50pm
  (other consultations by appointment only.)
- Instructor's e-mail: zaruba@uta.edu
- GTA: Sudhamsh Reddy sudhamsh@uta.edu office hours: lab times and TBA in ERB127

Objectives:

This course focuses on combinational and sequential digital logic and circuits. Specific topics include:

- Algebraic Methods for the analysis and Synthesis of Logic Circuits (Ch .2)
- Simplification of Switching Functions (Ch. 3)
- Modular Combinational Logic (Ch 4.)
- Combinational Circuit Design with Programmable Logic Devices (Ch. 5)
- Introduction to Sequential Devices (Ch. 6)
- Modular Sequential Logic (Ch. 7)
- Analysis and Synthesis of Synchronous Sequential Circuits (Ch. 8)
- typical applications

A lab accompanies the lecture where design concepts are investigated and implemented: lab practicum experience for the analysis and design of combinational and sequential logic circuits.

Outcomes:

Students successfully completing this course will be able to design small digital circuit systems to meet desired needs using software and hardware tools and technology.

Details of Curriculum:

- Class meets Tuesdays/Thursdays 3:30pm-4:50pm (ERB131)

- Accompanying lab time: Fridays 2:00pm-4:50pm (ERB127)
- Class WWW site: http://crystal.uta.edu/~zaruba/CSE2441/
  Note: Please check WWW site for up to date information
- Class mailing list address: CSE2441-ZAR@LISTSERV.UTA.EDU
  Note: students are strongly encouraged to sign up for the mailing list of the class; ***Please either request membership via the listserv provided web interface OR send me an email within the first week of classes with the subject: CSE2441 and the body containing your email address.***
- Text Books:
  - Carroll, Irwin, Nagle, and Nelson, "**Digital Logic Circuit Analysis and Design,**" ISBN: 978-0134638942
  - Capilano Computing, "**LogicWorks 5: Interactive Circuit Design Software**," ISBN: 978-0131456587
- Lecture slides will be placed on the web..

Details of Class Policies:

Course Grades:

Tentatively, course grades will be based on the following:

- LogicWorks and homework assignments (25%)
  - There will be no make up for assignments/homework. The maximum grade given for assignments/homework will decline by 20% of the total grade each calendar day the assignment/homework is overdue starting razor sharp after the deadline.
- Two Midterms: (40% total; 20% each)
  - There will two midterm exams during the semester, tentatively on March 6th, 2012 and April 26th, 2012.
  - There will be no make up exams!
- Lab practicum tasks (25%)
  - There will be no make up for assignments. The maximum grade given for assignment will decline by 20% of the total grade each calendar day the assignment/homework is overdue starting razor sharp after the deadline. All practicum tasks are individual effort only unless explicitly specified otherwise by the class instructor.
  - At least 75% of the required lab practicum tasks must be submitted in order for a student to pass CSE 2441 with a C or better. All required tasks must be submitted in order to have the possibility of making a grade of A.
  - Any missing step of the lab practicum may result in a grade of zero (0) for that lab practicum. Each practicum task will be graded on a number of factors. Additional procedural information on lab practicum tasks may be handed out or made available on the website as required. Every lab practicum task has a given due date.
- ABET outcome task – experimentation (Final Lab) (10%)
  - Material covered in this project/exam will be based on the practical class experiences and required preparatory work for the lab practicum tasks. This project/exam will assess the student's ability to perform an experiment using the understanding gained from the lab class. Undergraduate students achieving a semester grade of C or better, but failing this experimentation assessment (below 60%) and will receive a **failing grade** for the entire class. The

description of this task will include detailed grading criteria and policies. Students will have to present their designs during class periods in the final week of classes.

Tentatively, course grades are determined from the total points (100) earned as follows, (but the instructor reserves the right to "grade over the curve," or even to give everyone the best grade):

90-100: A ; 75-89: B ; 60-74: C ; <60: F

Make-ups:

Make-ups for (non-exam) graded activities may be arranged if your absence is caused by illness or work/personal emergency. A written explanation (including supporting documentation) must be submitted to your Instructor. If the explanation is acceptable, an alternative to the graded activity will be arranged. Make-up arrangements must be arranged prior to the scheduled due date.

Attendance:

Students are not required but encouraged to attend all class sessions, however they are required to attend labs to finish assigned lab work. No cell phones, loud talking, and sleeping in the classroom please.

Notes:

- The Instructor reserves the right to modify course policies, the course calendar, and assignment or project point values and due dates.
- All students are expected to be responsible users of the computer systems used for this course.

Accepted file formats for papers/reports:

The Instructor requires the students to turn in their papers and reports either in *.pdf* (Adobe's portable document format – can be generated, e.g., either by *Adobe Distiller* or later versions of *ghostscript*) or in *.ps* (Adobe's Postscript – can be generated, e.g., from Latex source files by *latex* and *dvips* or from the Windows operating systems by installing a virtual postscript printer device and printing the document to a file) formats. Source files (!) must be turned in along with the paper in a zip or a gzip (or tgz, .tar.zip) archive. Students are encouraged to use the Latex language and its appropriate compilers or the Microsoft Office program family (please see the Instructor if you intend to use anything else). If viruses are submitted along with the files a student turns in, the Instructor may degrade the grade of the assignment.

Drop policy:

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more

information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/ses/fao).

Academic honesty:

All students are expected to pursue their academic careers with honesty and integrity. "Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the 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" *(Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22.)* Students found guilty of dishonesty in their academic pursuits are subject to penalties that may include suspension from the university. Any student found guilty of academic dishonesty will receive a -100% for that work (project, exam, homework, etc.) as well as having the course grade lowered one full letter grade - in addition to any other penalties assessed (suspension, expulsion, probation). These and other applying UTA rules, will be strictly enforced. Any case of academic dishonesty will be treated in accordance with the UTA ***Handbook of Operating Procedures*** or the Judicial Affairs website at http://www2.uta.edu/discipline. If you do not understand this policy, it is your responsibility to obtain clarification or any additional information you may require

Students are allowed to discuss homework with classmates, but are **not** allowed to copy the solutions of others or share solutions with others. All work turned in for grading must be the student's own work.

Students will be required to sign an academic honesty letter to be kept with the instructor. Failing to provide with such a letter by census day will result in the respective students' withdrawal from the class.

In addition to the punishment from the University, the instructor will give a "minus 100%" grade on the given assignment/exam in question.

Disabilities:

If you require any accommodation based on disability, please meet with the Instructor (with your supporting papers) in the privacy of his office the first week of the semester to be sure you are appropriately accommodated.

Grievance Procedure

Anyone feeling that a dispute exists after the grading of any assignment or exam may submit a written grievance. This grievance should identify the item in dispute and arguments supporting the student's position. Grievances must be submitted in writing within two class periods following the return of the assignment. The instructor or GTA agrees to return a written response to the student's grievance within two class periods from receipt of the grievance. If the error is due to wrongful calculation of points, then no grievance needs to be submitted. If a written grievance is received, the instructor and GTA reserve the right to re-grade the entire exam (not just the specific point in question).

Student Support Services Available

The University of Texas at Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized

referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Electronic Communication Policy

The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system.

All students are assigned a MavMail account. Students are responsible for checking their MavMail regularly. Information about activating and using MavMail is available at http://www.uta.edu/oit/email/.

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Student Feedback Survey:

At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory will be asked to complete an online Student Feedback Survey (SFS) about the course and how it was taught. Instructions on how to access the SFS system will be sent directly to students through MavMail approximately 10 days before the end of the term. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback data is required by state law; student participation in the SFS program is voluntary.