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|  | Course | CS4341 Section HON Digital Logic & Computer Design |
| | Professor | Dr. Ebru Çankaya |
| | Term | Spring 2025 |
| | Meetings | MW 10:00am-11:15am @ PHY 1.103 |

Professor's Contact Information

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| Web page | http://www.utdallas.edu/~exc067000 |
| Office Location | ECSS 3.604 |
| Email Address | exc067000@utdallas.edu (Please type 4341.HON in the subject field) |
| Office Hours | Monday 3:45pm – 5:15pm |

TA Contact Information

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| TA | TBA |
| TA Office Location | TBA |
| TA Email Address | TBA |
| TA Office Hours | TBA |

General Course Information

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| Pre-requisites, Co-requisites, & other restrictions | Prerequisite: (CE 2310 or EE 2310) or (CS 3340 or SE 3340 or TE 3340) and PHYS 2326. Corequisite: (CS 4141 or TE 4141). (Same as TE 4341) (3-0) S |
| Course Description | Boolean algebra and logic circuits; synchronous sequential circuits; gate level design of ALSU, registers, and memory unit; register transfer operations; design of data path and control unit for a small computer; Input-Output interface. Students cannot receive credit for both (CS 4341 or TE 4341) and (CE 3320 or EE 3320). |
| Learning Outcomes | <p>After successful completion of this course, the students are expected to gain these:</p> <ul style="list-style-type: none"> • Ability to analyze, minimize, and design gate-level combinational logic circuits using Boolean algebra and 3 and 4 variable Karnaugh Maps. • Ability to analyze and design simple synchronous sequential circuits • Ability to analyze, design and utilize digital logic components such as adders, multiplexers, decoders, registers, and counters. • Ability to understand RAM and ROM memory components, and utilize these in digital logic design. • Ability to design computer components such as Arithmetic-Logic-Unit (ALU) and data path. • Ability to understand the basics of hardware description languages such as Verilog or VHDL. |
| Required Texts & Materials | David M. Harris and Sarah L. Harris, "Digital Design and Computer Architecture", 2 nd ed., Morgan Kaufmann, ISBN: 978-0123944245. |

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| Suggested Texts, Readings, & Materials | M. Morris Mano, Charles Kime, "Logic and Computer Design Fundamentals, 4th ed", Prentice Hall, 2007, ISBN: 978-0131989269. |
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Assignments & Academic Calendar (Tentative)

| Week | Dates | Course Content | Assignments |
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| 1 | 01/22 | Syllabus discussion, Ch 1: Logic Levels | Read Ch 1 |
| 2 | 01/27 – 01/29 | Ch 2: Combinational Logic Design | Read Ch 2, Assignment 1 issued |
| 3 | 02/03 – 02/05 | Ch 2 | Assignment 1 due, Assignment 2 issued |
| 4 | 02/10 – 02/12 | Ch 2 | Assignment 2 due |
| 5 | 02/17 – 02/19 | Ch 3: Sequential Logic Design | Read Ch 3, Assignment 3 issued |
| 6 | 02/24 – 02/26 | Ch 3 | Assignment 3 due, Assignment 4 issued |
| 7 | 03/03 – 03/05 | Ch 5: Digital Building Blocks | Read Ch 5, Assignment 4 due, Assignment 5 issued |
| 8 | 03/10 – 03/12 | Ch 5 03/12 Exam 1: Ch 1, 2, 3, 5 | Assignment 5 due |
| 9 | 03/17 – 03/19 | Spring break | |
| 10 | 03/24 – 03/26 | Ch 6: Architecture | Read Ch 6 |
| 11 | 03/31 – 04/02 | Ch 7: Microarchitecture | Read Ch 7, Assignment 6 issued |
| 12 | 04/07 – 04/09 | Ch 7 04/09 Exam 2: Ch 1, 2, 3, 5, 6, 7 | Assignment 6 due |
| 13 | 04/14 – 04/16 | Ch 8: Memory Systems & I/O Systems | Read Ch 8, Assignment 7 issued |
| 14 | 04/21 - 04/23 | Ch 4: Hardware Description Languages | Read Ch 4, Assignment 7 due, Assignment 8 issued |
| 15 | 04/28 – 04/30 | Ch 4, more Verilog | Assignment 8 due |
| 16 | 05/05 – 05/07 | 05/05 Exam 3: Ch 1, 2, 3, 4, 5, 6, 7, 8 Discussion session | |

***: Exam 1, Exam 2, and Exam 3 will be closed book and open notes.**

Course Policies

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| Class Materials | Class materials including syllabus, weekly course slides, assignments, and be made available in eLearning to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct . |
| Class Attendance | To accommodate different needs of students, attendance will not be taken for this course. Though attendance will not be taken , as per University requirements, regular class participation is expected. It is student's responsibility to attend the lectures in person. Students who fail to participate in class regularly are inviting scholastic difficulty. To benefit the most from this class, please attend classes, engage in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures. Successful participation is defined as |

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| | consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct . |
| Class Participation | Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct . |
| Class Recordings | <p>Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.</p> <p>The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.</p> |
| Grading (credit) Criteria | <p>Assignments: 20% (2.5% each) Exam 1 : 25% Exam 2 : 25% Exam 3 : 30%</p> <p>Letter grades will be assigned as follows: 98.00-100+ A+ 92.00-97.99 A 90.00-91.99 A- 88.00-89.99 B+ 82.00-87.99 B 80.00-81.99 B- 78.00-79.99 C+ 72.00-77.99 C 70.00-71.99 C- 68.00-69.99 D+ 62.00-67.99 D 60.00-61.99 D- Below 60.00 F</p> <p>All assignments and exams (other than the term project) are to be individual efforts.</p> |

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| | Please do not collaborate with other students. Copying of assignments or exams, in whole or in part, from other sources will be considered an act of scholastic dishonesty. This policy includes copying from other students, from assignments from previous semesters or from the Internet. |
| Assignments | <p>There will be 8 homework assignments during the semester. Homeworks will be posted in eLearning and should be turned in via eLearning ONLY. No e-mail submissions are accepted. No late submissions are accepted. So, please plan accordingly, do not leave your submissions to the last minute. Everybody submits his/her work very easily via eLearning, you can do it, too. If you encounter a problem during elearning submission, please contact 24/7 elearning Help IMMEDIATELY. This help is available 24/7 at:</p> <p>eLearning Help URL: http://www.utdallas.edu/elearning/eLearningHelpdesk.html eLearning Help Phone: 1 866 588 3192</p> <p>Any submission that is missed will be graded with a zero. Please do not insist for exceptions.</p> |
| Make-up Exams | To ensure fair treatment of each student, a make-up exam can only be offered in case of an emergency such as health, University approved travel, birth, death and should be accompanied by an official document (doctor's note, birth/death certificate, University approved travel authorization) with the condition that the arrangements are made BEFOREHAND. |
| Extra Credit | No extra credit is offered. |
| Late Work | No late submission is accepted. |
| Special Assignments | No special assignments offered. |
| Classroom Citizenship | <p>The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, <i>A to Z Guide</i>, which is provided to all registered students each academic year.</p> <p>The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the <i>Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3</i>, and in Title V, Rules on Student Services and Activities of the university's <i>Handbook of Operating Procedures</i>. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).</p> <p>A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.</p> |

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| Comet Creed | <p><i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i></p> <p>“As a Comet, I pledge honesty, integrity, and service in all that I do.”</p> |
| Academic Integrity | <p>The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.</p> <p>Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.</p> <p>Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.</p> <p>Students are expected to always turn in authentic work for this course. Any form of cheating is not allowed and will be referred to the Academic Dishonesty Office as per University rules.</p> |
| Email Use | <p>To protect privacy of students, e-mail communication will not involve discussions of specific grade information. If you would like to discuss your grades, you can do so either in class, or during office hours.</p> <p>The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.</p> |
| Withdrawal from Class | <p>The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.</p> |
| Student Grievance | <p>Procedures for student grievances are found in Title V, Rules on Student Services and</p> |

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| Procedures | <p>Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.</p> <p>Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.</p> |
| Incomplete Grades | <p>As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of <u>F</u>.</p> |
| Student AccessAbility Services | <p>The contact information for the Student AccessAbility Office is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688 (972) 883-2098 (voice or TTY)</p> <p>It is the student's responsibility to notify his or her professors of the need for such an accommodation. Student AccessAbility Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.</p> |
| Religious Holy Days | <p>The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.</p> <p>The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a</p> |

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| | <p>failing grade for that exam or assignment.</p> <p>If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.</p> |
| <p>UT Dallas Syllabus Policies and Procedures</p> | <p>The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.</p> <p>Please go to http://go.utdallas.edu/syllabus-policies for these policies.</p> |

These descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.