# Syllabus

Welcome to Digital Systems. I look forward to working with you over the next 15 weeks. My goals for this class are to: 1) lay a solid foundation for your digital circuits class (CE/EE 3320) and 2) introduce you to computer architecture and how we "talk" to computers. When you have questions about the material we are covering, please come talk to me right away so you do not fall behind. I am here to help you succeed!

By the end of this course you should:

- ✓ be able to demonstrate fluency with binary numbers and base conversion,
- ✓ be able to demonstrate fluency with Boolean algebra and computational techniques,
- ✓ be able to read and write simple assembly language programs, and
- ✓ be able to demonstrate an introductory understanding of computer organization and design.

- **Prerequisites:**
  A working knowledge of basic algebra. Knowledge of programming fundamentals is helpful but not required.
- **Instructor:** Diana Cogan
  - Email: diana.cogan@utdallas.edu Course Website: http://elearning.utdallas.edu/
  - Office hours: Mon. & Wed. 2 – 4 pm in ECSN 3.312 OR by appointment.
- **Teaching Assistants:** on Lab syllabus
- **Meeting Times & Locations:**
  - Lecture section 001: Tuesday & Thursdays 10:00 – 11:15 am in JO 3.601.
  - Lecture section 002: Tuesday & Thursdays 11:30 – 12:45 am in JO 3.601
    * Attendance will be taken at each class meeting.
  - Lab sections (2310.301, 302, 303 & 304): Fridays in ECSN check your schedule for your time slot & room number.
- **Required Materials:**
  - zyBooks CE 2310/EE 2310: Introduction to Digital Systems. To acquire access to this online text:
    1. Sign in or create an account at learn.zybooks.com
    2. Enter zyBook code: UTDALLASCE2310EE2310CoganFall2023
    3. Subscribe
  - Personal computer (NOT a tablet, Ipad or phone); minimum operating system: Windows 10, MacOSX 10.13+ or Chrome OS. Webcam & audio capability and a reliable internet connection. If you need assistance acquiring this equipment, please go to OIT Tech Support: https://www.utdallas.edu/oit/helpdesk/.
- **Additional Resources (not required):**
  - Fundamentals of Logic Design, 7th ed. by Charles H. Roth, Jr. & Larry L. Kinney
  - Computer Organization and Design, 2nd ed. by Davis A. Patterson & John L. Hennessy
- **Course Evaluation:**
  - Exams 1 & 2: 15% each
  - Cumulative Final Exam 20%
  - Lab: 25%
  - Reading and homework 25%

  **Notes: 1. Lab participation is mandatory.** *If you do not attend at least 7 out of the 10 lab sessions, you will receive a failing grade in this course.* **2. Exams will be at the Testing Center.** *You must reserve a time slot during pre-specified testing time at least 3 days in advance of the test. Failure to make or keep your reservation will NOT qualify you for a make-up exam.*

Grading scale:

| | | |
|---|---|---|
| 90 ≤ A− < 93 | 93 ≤ A < 97 | 97 ≤ A+ ≤ 100 |
| 80 ≤ B− < 83 | 83 ≤ B < 87 | 87 ≤ B+ < 90 |
| 70 ≤ C− < 73 | 73 ≤ C < 77 | 77 ≤ C+ < 80 |
| 60 ≤ D− < 63 | 63 ≤ D < 67 | 67 ≤ D+ < 70 |
| 0 ≤ F < 60 | | |

- **Important Class Dates:**
  - *First Lecture:* August 22
  - *Test 1*: review in class, September 21; test at Testing Center, Friday & Saturday, September 22 & 23.
  - *Test 2*: review in class, October 26; test at Testing Center, Friday & Saturday, October 30 – November 1.
  - *Final:* review in class, December 7; test at Testing Center, Saturday, Monday & Tuesday, December 9, 11 & 12.

- **How to Succeed in this Class:**
  - **Attend lectures;** take notes; practice **recalling** the material we cover - frequently.
  - Attend all lab sessions and complete reading and homework assignments in a timely fashion. Rework reading activities and homework problems several times. Study with a friend and practice explaining concepts and problems to each other.
  - See or email me when you have questions about lecture or homework. (*PLEASE include EE/CE 2310 in the subject line; email from your UTD address.)* If you have questions about lab, see or email one of the TAs assigned to your section.
- **Course Policies:**
  - Weekly reading assignments will be in zyBooks. Weekly homework assignments will be on eLearning. Prelabs will be turned in during lab.
  - I will allow makeup work only for university sanctioned activities and extraordinary circumstances - such as a death in your family. You must provide documentation to verify all such activities and circumstances.
  - You may dispute any graded work within one week of the return of that work.
  - Copying on examinations is cheating and is prohibited. Any instances of cheating or plagiarism will be subject to disciplinary penalties according to the UT Dallas policy on scholastic dishonesty. The penalties include the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students and the integrity of the University, I will strictly enforce the policies on scholastic dishonesty. Read the policy at **http://www.utdallas.edu/deanofstudents/dishonesty/.**
  - I will post announcements, homework assignments, lab assignments and complementary materials on eLearning. Check regularly so you do not miss anything!
- **Class Plan:**

| *Lecture* | | *Topics Covered* | *Due this week* | *Laboratory/Recitation* |
|---|---|---|---|---|
| *#* | *Date* | | *Check dates* | *Friday* |
| 1 | Aug. 22 & 24 | Intro. to CE/EE 2310 & Combinational logic | Nothing due | No lab meeting |
| 2 | Aug. 29 & 31 | Boolean algebra, equations, truth tables, timing | Reading1, HW 1 | Prelab 1, Lab 1 |
| 3 | Sept. 5 & 7 | Base conversion, binary addition & subtraction | Reading 2, HW 2 | Prelab 2, Lab 2 |
| 4 | Sept. 12 & 14 | K-maps, deMorgan and more Gates | Reading 3, HW 3 | Lab 3 |
| 5 | Sept. 19 & 21 | Test Review;<br>**Exam 1 at Testing Center, 9/22&23** | Reading 4, HW 4 | Prelab 4, Lab 4 |
| 6 | Sept. 26 & 28 | Muxes, Decoders, Encoders, Adders, Subtractors | | Prelab 5, Lab 5 |
| 7 | Oct. 3 & 5 | Comparators, Registers, Memory | Reading 5, HW 5 | Prelab 6a, Lab 6a |
| 8 | Oct. 10 & 12 | Information as Bits | Reading 6, HW 6 | Prelab 6b, Lab 6b |
| 9 | Oct. 17 & 19 | Floating & fixed-point arithmetic | Reading 7, HW 7 | Make-up week |
| 10 | Oct. 24 & 26 | Test Review;<br>**Exam 2 at Testing Center, 10/30-11/01** | Reading 8, HW 8 | Lab 7 |
| 11 | Oct. 31 & Nov. 2 | Shifters & binary multiplication | | Lab 8 |
| 12 | Nov. 7 & 9 | MIPS – assembly language programming | Reading 9, HW 9 | Lab 9 |
| 13 | Nov. 14 & 16 | Processor design | Reading 10, HW 10 | Lab 10 |
| | Nov. 21 & 23 | Fall Break / Thanksgiving; no class meetings | Reading 11, HW 11 | No meeting |
| 14 | Nov. 28 & 30 | Processor design | Reading 12, HW 12 | Lab 11 |
| 15 | Dec. 5 & 7 | Test review | Reading 13, HW 13 | --- |
| | | **Final Exam at Testing Center, 12/9, 11&12** | | |

**These descriptions and timelines are subject to change at my discretion (i.e. as necessary).**

- **Steps for turning in assignments on eLearning:**
  1. Install a scanning app on your phone and use it to convert your assignment to a pdf.
  2. Do not use Safari (browser) to submit your Turnitin assignment. Firefox or Chrome are recommended.
  3. Submitting your assignment is a two-step process:
     a. Upload your file.
     b. Review the preview image of your document to make sure it is correct. If it is not, resubmit it.
     c. Click the *Confirm* button. If you do not click *Confirm*, your assignment will not be submitted.
  4. Make sure you get the email confirmation. If you do not receive an email confirmation, your assignment WAS NOT submitted successfully. Try again, making sure you are following steps 2 and 3 properly.
  5. For additional assistance, contact elearning@utdallas.edu.

- **Assessibility (OSA/ARC):**

  The University of Texas at Dallas is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you are seeking classroom accommodations under the Americans with Disabilities Act (2008), you are required to register with the AccessAbility Resource Center, located in the Administration Building (AD), Suite 2.224. Their phone number is 972-883-2098, email: accessability@utdallas.edu and website is https://accessability.utdallas.edu(opens in a new tab) . To receive academic accommodations for this class, please obtain the proper AccessAbility Resource Center letter of accommodation and meet with me at the beginning of the semester.

**Class Materials**

The instructor may provide class materials that will be made available 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 AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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**Classroom Conduct Requirements Related to Public Health Measures**

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. Texas Governor Greg Abbott's Executive Order GA-38 prohibits us from mandating vaccines and face coverings for UT Dallas employees, students, and members of the public on campus. However, we strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Unvaccinated Comets will be expected to complete the Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003.

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***Class Attendance***

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes. Faculty have the discretion to set an attendance policy for their in-person meetings, but the absences due to COVID-19 cannot be counted against a quarantined student.

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***Class Participation***

*Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. 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 (and/or labs). Class participation is documented by faculty. 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.*

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***Comet Creed***

*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:*

"As a Comet, I pledge honesty, integrity, and service in all that I do."

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***Academic Support Resources***

The information contained in the following link lists the University's academic support resources for all students.

Please see http://go.utdallas.edu/academic-support-resources.

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***UT Dallas Syllabus Policies and Procedures***

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.