

COVID 19 Pandemic

Classroom Safety and COVID-19^[SEP]To help preserve the University's in-person learning environment, UT Dallas recommends the following:

Adhere to the University's [CDC Updated Guidelines](#) issued on July 30, 2021. All Comets are strongly encouraged to wear face coverings indoors regardless of vaccination status. Please note this represents a change in the [campus guidance](#) issued on May 20, 2021.

Accommodations for Students Who Miss Class for Reasons Unrelated to COVID-19

Individual faculty maintain their discretion on whether and how to accommodate student absences unrelated to COVID-19.

Accommodations for Students Who Must Isolate or Quarantine Due to COVID-19

To keep the UT Dallas community as safe as possible, the University requires students who test positive for COVID-19 or who are close contacts as determined by the campus contact tracing program to isolate or quarantine as applicable. Faculty will be notified by the Dean of Students' Office if a student in their class has been required to isolate (positive case) or quarantine (exposed). Faculty must make lectures available for those students during the period the students must isolate or quarantine. Faculty who need assistance with providing these students access to course content can contact the eLearning Team at elarning@utdallas.edu. 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 an isolated or quarantined student.

Verifying COVID-19 Isolations or Quarantines

Students need to self-report COVID-19 positive results or exposures via an [online form](#) so that university campus tracers can verify, record, and take necessary campus precautions. When faculty are notified by students rather than by the Dean of Students' Office that the students are isolating or quarantining, the faculty should remind students to self-report via the form; students should not attend class until cleared by campus tracers.

Vaccinations are widely available, free and not billed to health insurance. The vaccine will help protect against the transmission of the virus to others and reduce serious symptoms in those who are vaccinated. You are encouraged to [get a COVID-19 vaccine](#) and register your vaccination status through the [voluntary vaccine report form](#).

Proactive Community Testing remains an important part of the university's efforts to protect our community. Tests are fast and free. Please check the [Comets United](#) webpage for additional information.

[Student Safety](#) remains an important part of the UT Dallas' efforts to protect our community. All students will adhere to the Comet Commitment. Unvaccinated Comets will be expected to complete the mandatory [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](#). All students are encouraged to read the [Recommendations for Students Returning to Campus](#) issued on August 2, 2021.

Visit [Comets United webpage](#) to obtain the latest information on the University's guidance and resources for campus health and safety.

[Previous Campus Communications](#): a list of university announcements made in 2020-2021.

[Registrar's Intranet](#): please log in with your UTD NetID and password to access this site. Information that faculty need about grading, scheduling, and other essential aspects of our responsibilities related to teaching are made available and updated regularly in the Registrar's Intranet. This source of information can only be accessed by logging in with your UTD NetID and password. Many important faculty questions are answered here, and this is information that faculty members are expected to know and understand.

[FERPA Guidelines](#): you will be asked to log in before you access the FERPA Guidelines webpage on the Registrar's Intranet. If faculty have additional questions about FERPA guidance, please contact the Office of the Registrar at records@utdallas.edu for the proper student consent forms and further instructions.

[Honorlock](#): Online proctoring tool will be available for fully online courses and for classes with enrolled international students who are not yet in the United States.

[UT System Resources for Creating Accessible Course Content](#): designed to assist faculty with developing course content

Student Resources

Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "[What should I do if I become sick?](#)")

COVID-19 Resources

[Comets United webpage](#): check frequently

[FAQ](#): check out the FAQs and reach out to your instructor or academic advisor if answers are not included

[Student Resources](#): a variety of resources are available to help students to obtain counseling, health care, and academic support.

But, Dr. Becker, what do *you* plan to do about the COVID-19?

- 1. I have already been vaccinated back in the spring. If a booster is needed, I will get the booster. I will be wearing a face-shield to lecture and office hours, and following the protocols. Othertimes, I will have a face-mask.**
- 2. As time and technology permits, I intend to record all my lectures this semester during class time, and have them available on MS Streams.**
- 3. Slides and sample code and sample problems will be made available on the eLearning blackboard.**
- 4. I must be in class to teach my subject. Barring policy changes, I will be in the class room at the start of class.**
- 5. Since I am on campus, I will hold office hours in my actual office, ECSS 3.407. I will also have my laptop opened to MSTeams during that time period for online office hours.**
- 6. Some of my students are required to be in class due to financial or international policies. To that end, I will call roll at the beginning of each class period to record who is in class that day.**
- 7. Is physical attendance going to affect the semester grade? Insufficient data at this time. When I know more, I will announce it to the class.**
- 8. This semester has a group project ... and I cannot guarantee face-to-face communication for groups as I normally would. I recommend forming a Discord or Groupme or other communication system for your group meetings. Currently, the project is required to be a group. Should we switch to remote learning and online classes, I will remove that requirement and redistribute the peer grading points and change the final due date to November 30th.**
- 9. Exams are scheduled to be two major events in-class, one at midterm and one at finals, as written exams. If the course should have to go to remote teaching, I will replace the exams with multiple, smaller group quizzes more suitable for online learning.**
- 10. I have a fallback day scheduled for the end of semseter on December 7th. If turning in assignments becomes impossible due to lack of bandwidth, campus closures, or remote classes, I'll arrange for a "last chance" turn in on that day so everyone can have one last shot at submitting assignments. A "no penalty" late turn-in to compensate if it becomes necessary.**

Course Information

CS 4341-502
Digital Logic and Computer Design

Fall 2021

Time:

Monday: 5:30 pm to 6:45 pm

Wednesday, 5:30 pm to 6:45 pm

Room: ECSW 1.365

MSTeams: CS 4341.502 Fall 21

Professor Contact Information

Instructor: Dr. Eric William Becker

Telephone: (972) 883-3862

MS-Teams: Becker, Eric

Email: Eric.Becker@utdallas.edu Office: ECSS 3.407

Office Hours:

- Monday: 4:00 pm to 5:00 pm
- Tuesday: 10:00 am to 11:00 am
- Wednesday: 4:00 pm to 5:00 pm
- Thursday: 10:00 am to 11:00 am
- Other hours by appointment
- Office hours held both online and in-person

Please, if you are sending Dr. Becker an e-mail, please start the subject line with the *course number* and *section*.

Example:

To: Eric.Becker@utdallas.edu

Subject: CS4341-502: Question about Project Phase 1

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Prerequisites:

([CE 2310](#) or [EE 2310](#)) Introduction to Digital Systems or ([CS 3340](#) or [SE 3340](#) or [TE 3340](#)) Computer Architecture and [PHYS 2326](#). Electromagnetism and Waves

Corequisite:

([CS 4141](#) or [TE 4141](#)). (Same as [TE 4341](#)) Digital Systems Laboratory to accompany CS 4341.

The purpose of this laboratory is to give students an intuitive understanding of digital circuits and systems. Laboratory exercises include construction of simple digital logic circuits using prototyping kits and board-level assembly of a personal computer. Students that have credit for CS 2110 have credit for this course and cannot get additional credit for this course.

Restrictions:

Credit cannot be received for both courses, ([CS 4341](#) or [TE 4341](#)) and ([CE 3320](#) or [EE 3320](#)). Students that have completed CS 4340 cannot get credit for this course.

Course Description

CS 4341 Digital Logic and Computer Design (3 semester credit hours) 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. Credit cannot be received for both courses, CS 4341 and (CE 3320 or EE 3320). Prerequisites: (CE 2310 or EE 2310) or (CS 3340 or SE 3340) and PHYS 2326. Corequisite: CS 4141. (3-0)

Student Learning Objectives/Outcomes

Students will be working problems and employing methods, including but not limited to:

- CLO1: Ability to analyze, minimize and design gate-level combinational logic circuits using Boolean algebra and 3 and 4 variable Karnaugh Maps.
- CLO2: Ability to analyze and design simple synchronous sequential circuits
- CLO3: Ability to analyze, design and utilize digital logic components such as adders, multiplexers, decoders, registers, and counters.
- CLO4: Ability to understand RAM and ROM memory components, and utilize these in digital logic design

In addition, students will study and become aware of

- CLO5: Ability to design computer components such as Arithmetic-Logic-Unit (ALU) and data path
 - CLO6: Ability to understand the basics of hardware description languages such as Verilog or Virtual Hardware Design Language (VHDL).
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Required Textbooks and Materials

- Mano, M. Morris and Ciletti, Michael D., Digital Design, Pearson, 6th Edition, 2018
 - Some form of Verilog: Recommend using SystemVerilog or iVerilog (Freeware)
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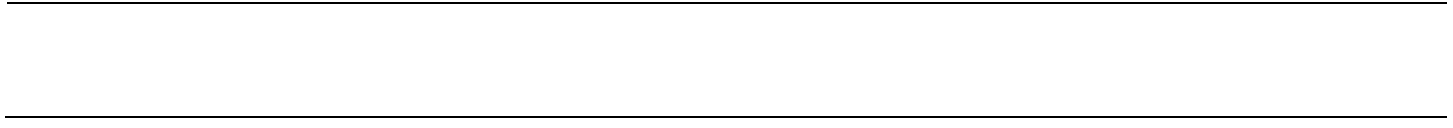
Suggested Course Materials

- Dally. W., Harting, R.C., Digital Design – A System Approach, Cambridge University Press, 2012
 - Harris, D. Harris, S., Digital Design and Computer Architecture, Morgan Kauffman, Second edition, 2013
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Assignments & Academic Calendar

As Instructor for this course, I reserve the right to change this calendar as I see fit-Dr. Becker

Date	Lecture Topics	Assignments
Mon, Aug 23	Syllabus, Socrates, Transistors	
Wed, Aug 25	Digital Systems and Binary Numbers	
Mon, Aug 30	VHDL & Verilog	Part 1 Assigned
Wed, Sep 01	Boolean Algebra & Logic Gates	
Mon, Sep 06	LABOR DAY	
Wed, Sep 08	Gate Minimization: 3 Variable	
Mon, Sep 13	Gate Minimization: 4 Variable	
Wed, Sep 15	Combinational Logic	Part 2 Assigned
Thu, Sep 16		Part 1 Due
Mon, Sep 20	Combinational Logic	
Wed, Sep 22	Combinational Logic	
Mon, Sep 27	Sequential Logic	
Wed, Sep 29	Review	
Mon, Oct 04	Midterm Exam	Midterm Exam
Wed, Oct 06	FSM Example Circuit	Part 3 Assigned
Mon, Oct 11	Return Midterm Exam	Part 2 Due
Wed, Oct 13	Sequential Logic	
Mon, Oct 18	Sequential Logic	
Wed, Oct 20	Sequential Logic	
Mon, Oct 25	Counter/Timer	
Wed, Oct 27	Counter/Timer	Part 4 Assigned
Thu, Oct 28		Part 3 Due
Mon, Nov 01	Memory: RAM and ROM	
Wed, Nov 03	Memory: PLA	
Mon, Nov 08	RTL	
Wed, Nov 10	Project Discussion	
Mon, Nov 15	Timing Constraints	
Wed, Nov 17	Pipelines	
Thu, Nov 18	Part 4 Due	Parr 4 Due
Mon, Nov 22	Fall Break	
Wed, Nov 24	Thanksgiving	
Mon, Nov 29	Review & Demo	Part 4 Late
Wed, Dec 01	Review & Demo	
Mon, Dec 06	Any Final Items	Last Chance
To Be Announced	Final Exam	Final Exam



Grading Policy

The semester will be scored on a scale from 0 to 100 points.

Dr. Becker does not curve.

Do not bother to ask

Assignment	Weight
Project, Part 1	10%
Project, Part 2	10%
Project, Part 3	10%
Project, Part 3	10%
Peer Grade	10%
Midterm Exam	25%
Final Exam	25%
Project Presentation Bonus	5%
Total	105%

Score	Grade
100 and Above	A+
95-99	A
90-94	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
60-69	D
Below 60	F

Key Grade Dates

Project, Part 1	Friday, September 17 th
Project, Part 2	Monday, October 11 th
Project, Part 3	Friday, October 29 th
Project, Part 4	Friday, November 19 th
	Accepted Late, November 30 th
Midterm Exam	October 5 th
Final Exam	After December 7 th

Note: CS 4141 is a separate class with a separate semester grade.

Course & Instructor Policies

Expectations of Student Skills

All students are expected to be aware of how to:

- upload files to Blackboard
- how to create a PDF
- how to download and install software on a computer
- how to write a computer program
- how to walk through an algorithm
- how to convert between base-2, base-8, base-10, and base-16
- how to do a 2's complement

and most importantly:

- how to read a problem
- how to read the entire problem

Make Up Exams

- If a student misses the midterm exam, and has a valid reason for missing the exam, then the final exam will count twice. If a student misses the midterm exam, and has an invalid reason for missing the exam, the midterm will be graded as a 0.
- If a student misses the final exam, and has a valid reason for missing the exam, the student will be given an incomplete for the current semester, and a makeup exam will be scheduled in the first month of the next semester. If a student misses the final exam, and has an invalid reason for missing the exam, the final exam will be graded as a 0.

Extra Credit

Dr. Becker sometimes includes an extra credit feature on the project or an extra question on the exams. Anything offered extra in this course will be the same opportunity for all students. No single student gets an individual extra credit assignment outside of the syllabus policies.

Late Work

Assignments are due when they are due. For this semester, the project is expected to be due the Friday before Fall Break. The project will be accepted late, for a penalty, on the Monday after Fall Break.

Re-grade Policy

Questions about the grade on assignments marked by the TA or Grader should be submitted to the TA or Graders first. If they are unable to resolve the issue, the material may be submitted to the Instructor. Questions about the grade on assignments marked by the Instructor should be submitted to the Instructor first.

This does not mean assignments receive a curve, or instant extra points, or an automatic A. Re-grading means the assignment will be fully re-graded. Re-grading means that the paper can either gain points, or lose points, or stay the same based on the outcome.

Class Attendance

~~The CS Department has a minimum attendance policy of three consecutive absences is the loss of a letter grade, and four consecutive absences will fail the course. Attendance will be taken at the beginning of each class.~~

Extraneous Material

Dr. Becker has a very bad habit of allowing students to ask off-topic questions...and then putting the off-topic questions on quizzes and exams. Anything covered in class is fair game, including this syllabus.

Cultural Background

Dr. Becker will sometimes ask the classroom for a topic for a sample problem. Typical Comets tend to ask for Star Wars, Star Trek, Lord of the Rings, or even Spongebob Squarepants. These pop culture references may be used for vocabulary of a problem, but some students worry they have to know these references. Math and logic are not altered by changing the variable name. It will be fine.

Science is Dispassionate.

Science, Engineering, and Mathematics are dignified disciplines. Pleading for grades is unacceptable for this course. Bargaining for grades is unacceptable for this course.

Inappropriate behavior is not acceptable.

This course is a lecture course at a branch of the University of Texas. The instructor does not care about the policies of previous courses, previous universities, or previous nations. The argument that a student's behavior was acceptable in another instructor's course or institution does not apply to the current course.

Formal Notice: No form of bias is permitted in this course, including the use of crude humor. Anyone harassing the instructor, grader, or fellow student with inappropriate comments will fail the course. This includes references written into computer programs, answering "joke" emails in class, or playing inappropriate videos. The instructor will decide what is inappropriate.

Ethical Behavior

Plagiarism is the unacknowledged incorporation of another's work into work which a student offers for credit. Using source code of another person's program, even temporarily or from the web, is considered plagiarism. Example: Someone putting their name on someone else's program and turning it in is cheating.

Collusion is the unauthorized collaboration of another person in preparing work that a student offers for credit. Allowing another person to use your source code, even temporarily, is considered collusion. Example: Giving someone your program, and then that person turns it in as their own work, then the giver is also cheating.

Working together, creating a study group, using library and internet resources, and documenting that work on a group assignment is not cheating.

Dr. Becker's penalty for any form of dishonesty is a score of -100 on the entire assignment.

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](#).

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](#).

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.

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](#).

Class Recordings

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](#).

NOTE: if the instructor records any part of the course, then the instructor will need to add the following syllabus statement:

The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. 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.

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.”

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>.

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.

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