University of Texas at El Paso
EE 2369: Digital Systems Design I
Fall 2020

Course Format: Online   **Last revised date: 08/20/2020**

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Office Hours Tuesday/ Thursday 3:00pm-4:00pm or by appt.
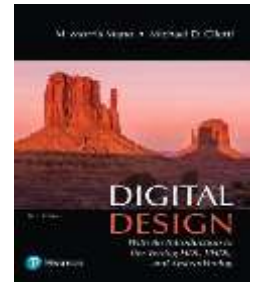

Required Course Materials

1. **Textbook: "Digital Design: with an Introduction to the Verilog HDL, VHDL, and System Verilog"**

   Authors: **M. Morris Mano and Michael D. Ciletti.**
   Edition: 6th Edition
   Publisher: Pearson
   ISBN-10: 9780134549897   **ISBN-13**: 978-0134549897

2. **Electronic Textbook from zyBooks → "Digital Systems Design I"**
   - You will need to subscribe (cost is $58). **Please follow the subscription instructions** posted inside the instructions folder labeled: "*How to… {instructions}*" located in our course Blackboard shell.

3. **Technology Requirements**

   - **Blackboard (BB) shell** - Course content is delivered via the Blackboard Learning Management System (LMS), where you will find all our course resources, announcements, virtual offices, submit/participate in assessment activities and use other integrated tools.
   - **Access to a laptop/Desktop** – Device should be enabled with **webcam** (integrated on device or external located on top of monitor), **microphone,** ability to install required software and reliable Internet access.
   - Use of **@*miners* e-mail account** – all official class communication should be using this domain
   - **Respondus** LockDown Browser **and** Monitor -- **Install** (for free!) and use for online exams/quizzes

     To get a basic understanding of **LockDown Browser**, please watch a video by following this link: https://www.respondus.com/products/lockdown-browser/student-movie.shtml.

     To download and install **LockDown Browser** click on the following link: https://download.respondus.com/lockdown/download.php?id=586140509

   - **iClicker account** -- Create a free iClicker account and link to our BB shell
   - **Create PDF files** -- be able to create PDF files to upload assignments *{by converting directly from Word to PDF, use a scanner or use a scanning App}*

➕ You will need all the online tools (listed above) for content delivery, assignment submission, and to participate in all assessment activities. *Detailed instructions for these tools can be found on the "How to…{instructions}" folder located on our course Blackboard shell.*

COURSE INFORMATION: What this class is about and how it will be delivered

Course Description: In Digital Systems Design I you will learn about design and synthesis of digital systems using both combinational and sequential circuits. You will start by fully understanding and designing small scale integrated (SSI) systems and use modular design towards designing Medium Scale (MSI) and Large Scale (SSI) integrated systems. You will learn different design techniques and be able to verify your solutions with analysis techniques.

Prerequisite: EE 1305 or CS 1401 with a grade of "C" or better.

Co-requisite: EE 2169 (Lab for EE 2369). Hardware projects and software simulation projects are performed in this lab associated with our class. Please note that the lab is 1 credit hour, and the grade for that lab is calculated **separately** from the grade in this class.

Students successfully completing EE 2369 will be able to:

1. Apply concepts of number systems to perform binary arithmetic and conversions
2. *Analyze & synthesize digital circuits, both combinational & sequential*
3. Design combinational circuits, such as binary adders, code converters, etc., by using logic gates
4. Design sequential circuits, such as counters, registers, etc., by using flip-flops and other hardware
5. Design, simulate or implement, and test digital circuits both hands-on (using physical devices) and with CAD tools
6. *Solve engineering problems with the Algorithmic State Machines (ASM) technique*
7. *Design, simulate, and test digital circuitry using Verilog Hardware Description Language*
8. Design, implement, and test digital circuitry by prototyping designs using the selected development system.

Course format: Online asynchronous mode

- **Asynchronous** content →To accommodate diverse schedules, all the class resources will be delivered and accessible in **asynchronous mode**. *Asynchronous* **means** students will be able to access course resources and other provided materials at their own time without a designated time. Please be proactive and continue your academic activities by diligently keeping track of your own progress.

- **LEARNING MODULES** → This course is designed using a modular format—that is, each week is "packaged" as a single module so that all the materials (such as pre-recorded video lectures and assignment) are contained in one area for a given week. This format is designed to help students maintain a schedule and timely participate in the class activities to account in the instructor assessment portion of your grade. **You can expect to have the pre-recorded video lectures posted every Tuesday and Thursday.** *Most ZyBook reading assignment will be due on* Sunday's at 11:59PM. **Please follow all deadlines as stated on each assignment.**

- **Meet posted deadlines** → Completion of all activities is self-paced; however, all assignments have firm deadlines. All deadlines refer to local El Paso Texas time (**Mountain Standard Time zone)**

- *Synchronous* discussion sessions → Depending on the needs of the class and **only if necessary**, we *may* schedule optional synchronous sessions when information/discussion benefits from real-time collaboration. During such live-sessions you will have the opportunity to ask questions {on chat or audio/video} and share screens in the **Blackboard Collaborate Ultra environment**. *If synchronous session is needed, such session will be announced in advance and recorded for access afterwards.*

Grading & Course Assignments

There will be no curving of grades in this course.

Grading will be based on the standard scale:

| 90% >……………**A** |
| 80% -89%……….**B** |
| 70% -79%……….**C** |
| 60% -69%……….**D** |
| Below 59%.….....**F** |

Your class final grade is earned by your active participation and performance in the following components:

Course Grade Distribution	
Exam #1	22%
Exam #2	22%
Exam #3	22%
Homework & Quizzes	28%
Instructor Assessment	6%
TOTAL	100%

Exams: There will be three partial exams (1, 2 and 3, all equally weighted) to assess your knowledge of the digital systems design techniques studied during each period of the course. You should use your own notes (obtained from reading assignments and from watching lecture videos), homework problems, examples, reference materials, quizzes and handouts as your study guide for the exams. The use of calculators or other electronic devices is strictly prohibited during all exams and quizzes. **Refer to the associated "Course Schedule" for estimated exam dates. Official exam dates will be announced and posted on Blackboard on a timely manner.**

- Please notice this course **requires** the use of **Respondous LockDown Browser** and **Respondus Monitor (webcam and microphone)** for online exams. You will be asked to provide your official UTEP ID and credentials to be allowed to take the exam. Take the practice test in advance to avoid technical difficulties at the time of the exams. **Review the *Test Proctoring Software Policy* (located on this syllabus in the Policies section)**

- **No exam score will be dropped;** however, if you need/have to **replace** a low score in one of the partial exams, then you have the **option to take a comprehensive final exam** (all chapters in the semester). Be aware that inherently a comprehensive exam will be more difficult and that **you must have taken all 3 exams to qualify for this option**.

o If you **miss** an exam **without** having an approved excuse, it will be graded with a "zero" in that exam and you will **not qualify** to replace it.

o **If** there is an **extenuating circumstance** that can cause a student to miss **one** examination **and** the circumstance warrants an excused absence approved by the instructor, such student will qualify to take a <u>COMPREHENSIVE</u> exam at the end of the semester to **replace** that **one** missed exam. Such student must have taken the other two exams to qualify for this replacement.

If you qualify and wish to take the comprehensive final, you will **have to notify the instructor** (more details later in the semester).

Homework: A portion of your content mastery depends on completion of homework assignments, so make sure you understand and can solve all the problems by yourself. Remember to seek immediate assistance from the different resources (virtual offices of instructor and lab TAs) if you need help and/or ask questions on our **Blackboard Discussion board**. You are responsible for doing the homework, even though **it may or may not be collected**. Homework assignments will include:

- *Paper homework assignments* → When these problem sets are collected, you must submit them by **scanning and uploading it as a <u>single</u> PDF file.** <u>Good homework presentation ~ including neat/legible PDF scanned files~ are **expected and required.**</u>, To be able to receive full credit, <mark>**problems should be presented in the <u>same sequence</u> as listed on the assignment instructions**</mark> *and* *include* **Student's** *Name*, <u>*course CRN number*</u> , *Assignment number and Due date* all **on the top of the first page**.

- **Reading assignments** → There will be sections assigned from the **required textbook**, **reference material and** from our **ZyBooks** **electronic book.** The sections corresponding from ZyBooks will include interactive "participation and challenging activities" that will count towards your grade.

- **All homework assignments** must be completed by the posted **deadline**. Late homework will only be accepted in the case of illness or an emergency; you are responsible for notifying me as soon as possible (ideally **before the deadline**) of the situation (illness or emergency) necessitating late submission of homework.

Quizzes: A portion of your grade will come from quizzes so make sure to be well prepared for them on a timely manner. Quizzes will assess your **completion and understanding** of all **homework assignments** (problem sets and reading) as well as your basic understanding of the class material that has been **covered in the video-lectures.** You are **required** to **read** from **both** the textbook and ZyBooks, so please refer to the "**Course Schedule**" for the topic sequence. The intention of the quizzes is to encourage you to stay on track with the class material. Please note that:

- **No make-up quiz will be given;** however, your lowest quiz score will be dropped and all others will count towards your grade.

- Quizzes will be administered using **Blackboard tools** {**LockDown Browser** or **iClicker** as needed} so make sure you know how to use these tools (take the practice quiz in advance to avoid technical difficulties later). Also visit iclicker.com/support

Instructor Assessment: Because this is an online course, 'attendance' and participation will be assessed through your course activity. This activity will be determined by the uploaded / completed assignments, participation in online activities {such as exams and quizzes} and access to posted asynchronous material. Each of these activities will be given point values that add up to the total *instructor assessment* portion of your grade. Because these activities are designed to contribute to your learning each week, they **cannot be made up** after their due date has passed, so students are expected to stay active in the course by logging to Blackboard and ZyBooks. If you have an excessive amount of missed items you may be dropped from the course.

Extra credit: *If needed,* extra credit may be assigned to the ENTIRE CLASS ONLY. No individual can request to present work for extra credit. When needed, optional questions/challenge problems will be added to assignments, quizzes or exams that will count as extra credit.

Course Schedule and Important Dates: This information will be available on Blackboard as a separate document highlighting topic sequence, key assignments, important dates and activities. Such document is subject to changes at the discretion of the instructor to adapt to the needs of the class.

COURSE COMMUNICATION and LEARNING ENVIRONMENT: How we will stay in contact with each other and seek assistance

Because this is an online class, we won't see each other in the ways you may be accustomed for Face-to-Face (F2F) class formats. However, there are a number of ways we can keep the communication channels open:

Office Hours: We will not be able to meet on campus, but you can **visit my virtual office** during the posted times so we can talk one-on-one about your questions and comments related to the course. My office hours will be held **using Blackboard Collaborate** (look for the link inside our BB shell to start the session). If you have schedule conflicts and need to make an appointment to meet with me outside the posted office hours, please send me an email. Notice you can also seek assistance by contacting a member of our EE2369 instruction team (Lab TAs)

E-mail Communication: For all your class related e-mails send your message to miroslav@miners.utep.edu . Due to high volume of emails being received, please be patient and be certain that I will make every attempt to respond to your email within **24-48 hours** of receipt (usually much sooner but do not wait until the last minute to send me a message about something that is due in a few hours or the next day because due to response window my response may not get back to you on time)
Make sure the message's subject description has prefix "**EE2369 CRN #####**" followed by the rest of the message's subject (Example: "*EE2369 CRN #####: Question about homework*"). In body of email, clearly state your question. All this will **help receive a quicker response time**! Send all messages **from Miners account** and **include your name and UTEP ID number**.

Announcements: Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

Discussion Board: We will use this resource **for frequently asked questions**, technical issues, and discussions of constructive content related to our class. Check out the discussion board **to see if your question has been answered previously**, and if not, participate in the discussion boards by posting your question, comments or thoughts! **Please respond to other students' questions if you have a helpful response**, this will help create a sense of community and will give you an opportunity to **engage with your classmates**.

Classroom NetEtiquette/ Student Conduct: Remember that you must be courteous, respectful and professional in the way you address others; either in writing (email, chat, discussion boards) or during one-on-one sessions at virtual office with instructor and lab TAs. Therefore, please keep these netiquette (network etiquette) guidelines in mind. **Failure to observe them may result in disciplinary action**

- o **Respect and courtesy must be provided** to classmates, TAs and instructor at all times. No harassment or inappropriate postings will be tolerated.
- o When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.
- o Blackboard is **not** a public internet venue; **all postings to it should be considered private and confidential. Whatever is posted in these online spaces is intended for classmates and instructor only.** Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

COURSE AND UNIVERSITY POLICIES:

COPYRIGHT STATEMENT FOR COURSE MATERIALS: All materials used in this course (such but not limited to recordings, assignments, exams and quizzes) are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. **You may not be further disseminated (i.e. share, send or post) any class materials/resources outside of this course. Doing so may result in disciplinary action**

MAKE-UP WORK POLICY: Make-up work will be given only in the case of a documented emergency. Note that make-up work may be in a different format than the original work, may require more intensive preparation, and may be graded with penalty points. If you miss an assignment and the reason is not considered excusable, you will receive a zero. It is therefore important to reach out to me—in advance if at all possible—and explain with proper documentation why you missed a given course requirement. Once a deadline has been established for make-up work, no further extensions or exceptions will be granted.

COURSE DROP POLICY: According to UTEP Curriculum and Classroom Policies, "When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class". If you have a large amount of missed assignments you may be dropped from the course. The grade that you will receive will be a **"W"** before the **course drop deadline** and a grade of **"F" after the course drop deadline. If** you feel that you are unable to complete the course successfully and you need to **drop this class**, please contact the Registrar's Office to initiate the drop process before the **Drop Deadline on October 30th** . If you cannot complete this course for whatever reason, please contact me. Disappearing without formally dropping a course or withdrawing from the University, will result in a zero on each assessment activity you miss thereafter and will ultimately result in you receiving a grade of "F" at the end of the semester.

INCOMPLETE GRADE POLICY: Incomplete grades may be requested only in exceptional circumstances after you have completed at **least half of the course requirements**. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

 ELECTRONIC DEVICES POLICY: You must have access to an internet connected device to access course resources, participate in assessment items and to take Exams and Quizzes by using the appropriate tools within Blackboard.

TECHNICAL DIFFICULTIES POLICY: I strongly suggest that you submit your work with plenty of time to spare in the event that you have a technical issue with the course website, network, and/or your computer. I also suggest you save a copy of all submitted/uploaded work. If you are experiencing difficulties please contact UTEP's technical support and email if necessary.

> **Technical Support:** Please follow this link for Blackboard Student Orientation to review/learn how to post assignments, participate in discussions, take a test on Blackboard, review feedback/grades, etc. If you need technical support with Blackboard, please contact UTEP's Help Desk at (915)747-4357 (HELP), helpdesk@utep.edu. For help with equipment, internet access and tech support please visit https://www.utep.edu/technologysupport/learningremotely.html

TEST PROCTORING SOFTWARE POLICY: We will make use of **Respondus Lock Down Browser** and **Respondus Monitor** inside of Blackboard to promote **academic integrity**. You are encouraged to take the "practice exam" and learn more about how to use these programs prior to the first test. Please review the following guidelines:
- The assessments will only be available at the posted scheduled times.
- You may take the test at any time during the given exam window.
- A reliable Internet connection is essential to completing the exam. If you must go to a location to take the exam (such as the library), be sure to follow their health and safety requirements.
- You have one attempt to take the test. Once the window closes, your answers will be saved, and no changes can be made.

- Respondus Lockdown Browser will require that all internet tabs are closed prior to the start of the test. Respondus Monitor requires a webcam and microphone.
- You will be required to show the webcam your student ID prior to the start of the test.
- Your face should be completely visible during the test. Blocking the camera will disable the test.
- No notes or textbook materials are permitted during the test. Respondus Monitor requires you to take a video of your surrounding area (desk, chair, walls, etc.)
- You should not have conversations with other people and/or leave and return to the area during the test.

SCHOLASTIC INTEGRITY/ACADEMIC HONESTY:

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. Any form of academic dishonesty will not be tolerated. "Plagiarism" is the unattributed use of someone else's work – coming from a classmate's, a website's, even a teacher's from another course. In accordance with University regulations, scholastic dishonesty on a given assignment **will** be subject to disciplinary action and **will** be referred to the Office of Student Conduct and Conflict Resolution (OSCCR). **Dishonesty/cheating/plagiarizing may result in a zero on the assignment, an "F" in the course, or even suspension from the university**. If you need assistance with your assignments, please consult authorized sources of help. For more information on Scholastic Dishonesty and/or Plagiarism, consult the Handbook of Operating Procedures: Student Affairs, which is available in the Office of Student Life or visit HOOP: Student Conduct and Discipline.

ACCOMMODATIONS POLICY ~ Center for Accommodations and Support Services (CASS): The University is committed to providing reasonable accommodations and auxiliary services. Students requiring unique accommodations **must** contact and register with the **CASS** office and make sure to **talk to the instructor at the beginning of the semester to discuss necessary arrangements.** The CASS office may be contacted at 747-5148, cass@utep.edu or go to Room 106 Union East Building.

COVID-19 Accommodations -Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.

COVID-19 PRECAUTIONS: You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at http://www.screening.utep.edu. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.

For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will

verify if you are permitted to come to campus. Under no circumstances should anyone come to class or campus when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom or other facilities. If you remove your face covering, you will be asked to put it on or leave. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures

What you need to do to be successful in this course

Prepare in advance: In order to be successful, each student must be proactive in using all the online resources and **keeping up with announcements made on Blackboard** and messages sent via email. This means that **you must refer to all the resources** (physical textbook, electronic book and lecture videos) about the current and upcoming topics, understand your homework, and complete any other assignment **BEFORE the deadline**.

Tips for Success in this class:

1. Be **organized**, keep your notes in order, make your own schedule and make sure to meet all your weekly expectations to receive credit and to avoid falling behind.
2. **Visit the class Blackboard shell and read UTEP e-mail every day to avoid missing deadlines or announcements.** Use all available course resources.
3. You know what is due well in advance; it's your responsibility to **stay on schedule and prioritize your time**.
4. **Read ahead** from both the electronic and physical book by following the topic sequence. This will help you get a better understanding when you watch the video lectures. As you read, **take notes** and make summaries in your own handwriting (research shows handwriting has a better effect on your memory). All of this will help you study for assessment activities.
5. Make sure to **watch all the recorded lectures** and take good notes. Use all posted course materials, they are there for a reason!
6. Be proactive and **meet all the deadlines**. Try to finish your **assignments early** (this will help in case something unexpected comes up, but your activities will be done). Make sure to understand how to solve these assignments as you may have a quiz about this content.
7. Comply with the equipment requirements necessary for online assessment. Take advantage of the "**practice quiz**" and **"test"** to **verify that your system is working correctly** before the actual time of the quiz or test. This will give you time to seek tech support and avoid additional stress.

8. Visit instructor during virtual office hours if you need assistance, or use e-mail to set up an appointment. Remember to also visit the discussion board and seek assistance from our Lab TAs.
9. Start your success by not falling behind! You need to **be proactive** about meeting your education goals. Fully understand the level of autonomy and self-motivation required to be successful in any online course.
10. Remember that the grade you get is the grade you earn. **It is up to you to monitor your own performance and adjust your efforts on a timely manner** if you find that you are falling behind on your grades.

UTEP Student Resources: Where you can go for assistance

UTEP provides a variety of student services and support:

Technology Resources

- UTEP **Help Desk**: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone at (915)747-4357 (HELP), email to helpdesk@utep.edu , go to their website, chat, or by visiting their physical or virtual offices.

- Please follow this link **Blackboard Student Orientation** to review/learn how to post
- assignments, access Blackboard Collaborate sessions (virtual office, live sessions), participate in discussion board, take a test on Blackboard, review feedback and grades. If you need technical support with Blackboard, please contact the Help Desk at (915)747-4357 or find BB tool instructions by clicking this link.

Academic Resources

- **UTEP Library:** Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- **University Writing Center (UWC)**: Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- **Math Tutoring Center (MaRCS)**: Ask a tutor for help and explore other available math resources.

Individual Resources

- **Military Student Success Center:** Assists personnel in any branch of service to reach their educational goals.
- **Center for Accommodations and Support Services**: Assists students with ADA-related accommodations for coursework, housing, and internships.
- **Counseling and Psychological Services:** Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.