

**University of Texas at El Paso**  
**EE 2369: Digital Systems Design I**  
**Fall 2019**

**CRN: 17287**

**Class time: MW 7:30AM-8:50AM**

**Classroom: BUSN 312**

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**Instructor** Professor Miroslava Barúa

**Phone** (915) 747-5720

**Office** E320 (Engineering Bldg.)

**E-mail** miroslav@miners.utep.edu

**Office Hours** Monday/Wednesday 9:00AM–10:00AM or by appt.

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### Required Course Materials

1. **Title: "Digital Design (with an Introduction to the Verilog HDL, VHDL, and System Verilog)"**  
**Authors: M.Morris Mano and Michael D. Ciletti.**  
**Edition: 6<sup>th</sup> Edition**  
**Publisher: Pearson**  
**ISBN-10:** 9780134549897  
**ISBN-13:** 978-0134549897
2. Use of **@miners** e-mail account, **Blackboard** and **iClicker** account for class resources, announcements and submitting certain assignments.

**Course Description:** In Digital Systems Design I you will learn about design and synthesis of digital systems using both combinational and sequential circuits

**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. Student is responsible for completing the labs, and meeting with the Teaching Assistant at the formally scheduled time assigned to the section in which the student registered. 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

## 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**

<b>Course Grade Distribution</b>	
<b>Exam #1</b>	<b>22%</b>
<b>Exam #2</b>	<b>22%</b>
<b>Exam #3</b>	<b>22%</b>
<b>Quizzes &amp; Homework</b>	<b>24%</b>
<b>Instructor Assessment</b>	<b>10%</b>
<b>TOTAL</b>	<b>100%</b>

**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. **Exam 1, 2 and 3 will occur on Fridays, outside of normal class meetings.** The exam dates are provided on the associated handout entitled "**Important Dates**". You will be asked to provide your official UTEP ID to be allowed to take the exam. You should use your own class notes, homework problems, examples, quizzes and handouts as your study guide for the exams. **All exams are closed book/closed notes and no calculators or other electronic devices are allowed.**

**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** at the end of the semester (includes **all** material covered in the semester, closed book/ closed notes). **You must have taken all 3 exams to qualify for this option.** If you miss an exam without having a medical/work related excuse, it will be graded with a "zero" in that exam and you **cannot** replace it.

If there is an extenuating circumstance (medical or work related) that can cause a student to miss one examination you must communicate with the professor **immediately** (before missing an exam or shortly after missing it). If such circumstance warrants an excused absence approved by the professor, you must provide a medical excuse signed by physician or signed letter from boss on a company's letterhead. In such circumstance, the student will take a **COMPREHENSIVE** exam at the end of the semester to replace the missed exam.

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

**Quizzes:** **A significant portion of your grade will come from** random quizzes that will assess your completion and **understanding** of all homework assignments as well as your basic understanding of the class topics (related to the material that has been covered in class and reading about the upcoming topics). You are **required** to read the textbook and come prepared to class to answer basic questions about the content, please refer to the "**Course Schedule**" for the topic sequence. Quizzes are a major portion of your class grade so make sure to be well prepared for them on a timely manner. The intention of the quizzes is to encourage you to stay on track with the class material as you prepare for the exams and to provide you with feedback. Quizzes may be given at the beginning of the class or at any point during the session. **No make-up quiz will be given if you are late or absent**

**Homework:** A significant 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 (instructor, tutor, TA) if you need help and/or ask questions at the beginning of the next class session. You are responsible for doing the homework, even though it may or may not be collected. Homework assignments will include individual or group problem sets (**Paper homework assignments**) and reading assignments. All must be completed by the deadline. When collected, you must submit your **handwritten homework** at the beginning of the class by the due date. Late homework will only be accepted in the case of illness or an emergency; you are responsible for notifying me as soon as possible (**before class**) of the situation (illness or emergency) necessitating late submission of homework. Good homework presentation, including neatness and legibility, are expected and required. **To receive full credit, all submitted work must be stapled and have Student's Name, Assignment name, EE2369, Section MW 7:30AM and Due date all on the right hand corner of the first page.**

**Instructor Assessment:** your active class participation will be assessed by collected work, by attendance, iClicker polling/questions, taking good class notes (**DO NOT take pictures of the board/projection**), having and using all required course materials, answering questions in class, etc

**Extra credit: If needed,** extra credit may be assigned to the ENTIRE CLASS ONLY. No individual can request to present work for extra credit.

### Course Schedule and Important Dates:

This information will be available on Blackboard as separate documents highlighting topic sequence, key assignments, important dates and activities. Such documents are subject to changes at the discretion of the instructor to adapt to the needs of the class.

### Learning Environment

**Prepare in advance:** In order to be successful, each student must come to class prepared to participate. This means that you must **read about the current and upcoming topics, understand your homework, and complete any other assignment BEFORE you arrive to the classroom.** Coming to class late is unprofessional and is very disruptive to the class. If you are late to class, you are to come in quietly and take your seat but DO NOT attempt to turn in assignments.

**Classroom Etiquette/ Student Conduct:** You must be courteous, respectful and professional in the way you address others; either in person or in writing

**E-mail Communication:** For all your class related e-mails use the prefix "**EE2369 7:30AM:**" followed by the rest of the message's subject description (Example: "**EE2369 7:30AM: Question about homework**"). Send all messages from your Miners account and **include your name.**

## Course & University Policies

**Mandatory Attendance:** Attendance is the key to your academic success. If you miss a class session, you are responsible for obtaining notes, handouts, and assignments and for meeting the same deadlines as the rest of the class. If you have an excessive amount of absences from class you may be dropped from the course. The grade that you receive will be a W until **November 1, 2019, course drop deadline. After this date, the grade you receive will be an F**, and only under exceptional circumstances a W.

**Electronic Devices:** Use professional discretion with electronic devices by shutting them off, or setting them to mute before coming to class. **Do not use text messaging or web browser features while in class.**

### Center for Accommodations and Support Services (CASS):

Students requiring unique accommodations must contact the CASS office and provide their instructor with the proper documentation at the beginning of the semester. Please make sure to **meet with the instructor at the beginning of the semester** to discuss necessary arrangements. The CASS office may be contacted at 747-5148, [cass@utep.edu](mailto:cass@utep.edu) or go to Room 106 Union East Building.

### Scholastic Integrity/Academic Honesty:

**Any form of academic dishonesty will not be tolerated.** "Plagiarism" is the unattributed use of someone else's work -- 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.

## Tips for Success in this class:

1. Come to class, take good notes (Power Point presentations will **not** be provided) keep everything organized.
2. Read, study and use all the course materials **before** each class.
3. Visit the class Blackboard
4. Visit instructor during office hours if you need assistance, or use e-mail to set up an appointment
5. Finish your assignments early and use all available resources (including Tutoring services)
6. Don't cram for examinations; start your success by not falling behind!
7. 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.