

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

**CRN: 24421**

**Class time: MW 1:30PM-2:50PM**

**Classroom: LART 323**

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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 3:00PM –4:30PM or by appt.

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### Required Course Materials

1. Text: "[Digital Design with an Introduction to the Verilog HDL](#)" by M.M. Mano and M.D. Ciletti
2. Electronic Textbook from [zyBooks](#) → "[Digital Systems Design I](#)" by Frank Vahid
  - a. Sign up at [learn.zybooks.com](#) using your **miners** e-mail account
  - b. Enter zyBook **code** (*Code provided in class, instructions on Blackboard too*)
  - c. Choose corresponding course section
  - d. Click *Subscribe*
3. 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

Course Grade Distribution	
Exam 1	22%
Exam 2	22%
Final Exam	22%
Homework & Quizzes	24%
ZyBooks Assignments	5%
Instructor Assessment	5%

**Exams:** Each exam (1, 2 and final are equally weighted) will assess your knowledge of the digital systems design techniques studied during each period of the course. **All exams are closed book/closed notes and no calculators or other electronic devices are allowed. Exam 1 and 2 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 & challenge activities from our course materials, quizzes and handouts as your study guide for the exams. **No make-up exams will be given.** If there is an extenuating circumstance that can cause a student to miss one examination and the circumstance warrants an excused absence (by providing a medical excuse signed by physician or signed letter from boss on a company's letterhead), a COMPREHENSIVE make-up exam may be given at the end of the semester to replace that missed exam. The student will take both the final exam (exam #3) and the comprehensive exam on Wednesday May 15, 2019.

**Homework:** A significant portion of your content mastery depends on completion of homework assignments. 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 activities from the electronic textbook (**ZyBook activities**) all to be completed by the given deadline. You must submit your written 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. **All submitted work must be stapled and have Student's Name, Assignment name, EE2369, Section MW 1:30PM and Due date all on the right hand corner of the first page.**

**Quizzes:** Random quizzes will be given to assess your completion of 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. Refer to the "**Course Schedule**" for the topic sequence). Quizzes will 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 for any reason.

**Extra credit:** 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 schedule 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.

## 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 1:30PM:**" followed by the rest of the message's subject description (Example: "**EE2369 1:30PM: 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 I will ask you to meet with me to discuss your progress in the class, and you may be dropped from the course. The grade that you receive will be a W until **April 5, 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. 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) and keep everything organized.
2. Read, study and use all the course materials **before** each class.
3. Visit instructor during office hours if you need assistance, or use e-mail to set up an appointment
4. Finish your assignments early and use all available resources (including Tutoring services)
5. Don't cram for examinations; start your success by not falling behind!