

**EE 4375/5378 VLSI DESIGN**  
**Fall 2017**

**Instructor:** Dr. John Moya  
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**Course Location and Time:** UGLC 338 4:30 – 5:50 pm MW

**Course Description:** Introduces VLSI design and computer-aided VLSI design software. A project is required that involve schematic capture, layout editing, simulation, logic verification, and testing.

**Prerequisite:** C or better grade in EE 3329

**Textbooks:** 1) CMOS VLSI DESIGN: A Circuit and Systems Perspective 4<sup>th</sup> ed.  
by Neil Weste and David Harris  
2) Other documentation from class.

**Course Outcomes:**

- 1) Students will understand the properties of and be capable of analyzing circuits containing MOS transistors.
- 2) Students will be able to use CMOS design approaches to create basic logic gates, implement Boolean logic functions and simple logical circuits.
- 3) Students will understand the layout rules and the process used to build MOS circuits on an IC.
- 4) Students will become familiar with and be able to utilize modern VLSI CAD approaches to create and analyze a MOS design.

**Course Content:** The course will be divided into two parts: a theoretical portion and an applied portion. Approximately the first ten weeks of the semester will be concerned with the theoretical portion and will entail coverage of material in the textbook.

**Absence Policy:** Make-up work is in general not possible and effort should be made to attend every class. Thus, the professor should be informed of any problems with attendance **at least a week prior to any absence** to allow for rescheduling of work for the entire class. In the event that an emergency or sudden sickness occurs, **inform the professor as soon as possible**. In such cases an oral quiz/exam may be administered to make-up a quiz/exam. A physician's note or a similar document may be required prior to such a make-up.

**Undergraduate Grading:** Based on equally-weighted tests and a semester project. A 4 to 0 grading scale will be used to grade projects, test problems and tests.

- 4: concept is understood,**
- 3: concept is mostly understood,**
- 2: concept is halfway understood,**
- 1: concept is mostly not understood, and**
- 0: concept is not understood.**

Some scores between two of the above are sometimes given. In general an average performance of 3.5 to 4 will earn an A, 3 to 3.5 a B and so on. Any questions concerning a test score must be brought up prior to the class meeting after the exam is returned. Any exams not picked up within a week of the end of the semester will be destroyed. Course participation in class and as judged by activity during and by the completion of project assignment may be taken into account and could have a positive effect on your final grade. Any questions concerning final grades should be brought up within one week of grades being posted to Goldmine.

**Graduate Grading:** Grading will follow the general outline set for undergrads above. However, graduate students can expect some differences in assignments and tests. These differences can include different problems on tests and the project.

**Academic Dishonesty:** “Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the *Handbook of Operating Procedures*, and available in the Office of the Dean of Students and the homepage of the Dean of Students at [www.utep.edu](http://www.utep.edu), may result in sanctions ranging from disciplinary probation, to a failing grade in the work in question, to a failing grade in the course, to suspension or dismissal, among others.” (Quote from the Undergraduate and Graduate Catalog)

**Accommodation under the ADA:**

For disability accommodation, contact the Center for Accommodations and Support Services at 747-5148, go to room 106E in the Union, or e-mail [cass@utep.edu](mailto:cass@utep.edu).