CpE311 – Introduction to VLSI Design
Winter Semester, 2003

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Office hours (tentative): Mon 3:00–5:00 PM
(Though I'm often available at other times)

Prerequisites: CpE213

CpE214 is helpful. CpE318 - Digital System Modelling - can also help quite a bit, though I plan to cover the important material from this class here.

Textbook: *Application-Specific Integrated Circuits,* M.J.S. Smith Addison-Wesley, 1997

Recommended supplements:

- *The Designer's Guide to VHDL*, P. J. Ashenden, Morgan Kaufmann, 1995
- *Digital Integrated Circuits*, J. M. Rabey, Prentice Hall, 1996
- Other manuscripts/notes available electronically at **http://www.umr.edu/~daryl/classes/classes.html** and **http://www.ece.umr.edu/~hjp/cpe311**.

Material covered:

Chapter 1 (1 lectures)
Chapter 4.1, 4.6, 5.1, 7.1 (2 lectures)
Lab day - Mentor Tutorial (1 lectures)
Chapter 10.1-10.15, 10.17, 12.1-12.2, 12.6-12.7 (4 lectures)
Lab day - Lab 1 (1 lectures)
Lab day - Lab 2 (1 lectures)
Chapter 2.1-2.7 (4 lectures)
Lab day - Lab 3 (2 lectures)
Lab day - Lab 4 (1 lectures)
Chapter 3.1-3.7 (4 lectures)
Chapter 15.1-15.5, 15.7 (2 lectures)
Chapter 16.1-16.2.3, 16.2.8, (2 lectures)
Chapter 14.1-14.1, 14.2.0-14.2.2, 14.3-14.4, 14.7.1 (2 lectures)
Chapter 17.1-17.2.2.2, 17.3.2, 17.4.2, 17.4.3 (1 lectures)

Material will also include slides, hand-outs, and original notes.

Grading: *(Tentative)*

25%	Test 1
30%	Final Exam
16%	Labs
17%	Project
10%	Homework
2%	Evaluation (I can push your grade up or down by 1%)

Tests and Quizzes:

Tests will cover material from the lectures, text, homework and labs, with a slight emphasis on homework. Tests will primarily cover material presented since the last test. The final exam will be comprehensive, though a slight emphasis will be placed on material that might not have been covered on the previous test. I reserve the right to give small, surprise, in-class quizzes and adjust grade distribution accordingly.

Approximate dates:

Test 1	3/11/03
Final Exam	05/15/03 (Thursday), 10:30–12:30

Homework:

- You are expected to read appropriate sections of the textbook before presentation in class
- Homework problems will be assigned in class or possibly on a web site specifically intended for that purpose (stay tuned).
- As a rule of thumb, no late homework is accepted.
- Homework will consist of answering questions from the book, solving problems, writing programs, and, possibly, some laboratory work.
- While you are expected to complete all assigned problems, the grader may randomly pick only certain problems to grade. It is common in larger classes to compute your grade based on the accuracy of 1 or 2 problems and an evaluation of how hard you "tried" on the rest.
- Lowest homework grade is dropped
- Extra credit may occasionally be offered. You will not be penalized for not completing the extra credit, but if you have cause to be concerned about your grade I strongly encourage you to take advantage of this when available.
- I strongly encourage you to study with others, as this can be a powerful tool for learning. However, I insist that you must a) attempt to understand and solve each problem by yourself and b) thoroughly understand any solution you turn in. If you cannot adequately explain the basis for your solution at a later date, no credit will be given even if your solution is correct. Simply "copying" someone else's homework will be considered cheating and will not be accepted under any circumstances.

- Homework is due at the beginning of class.

Partial Credit:

Problems are rarely graded as all-or-none. Emphasis is placed first on proper understanding of the concepts, then on proper application of those concepts, and lastly on "the right answer". You will not be severely penalized for minor, non-conceptual errors. On the other hand, a simple answer with no work or explanation may not be given full credit.

If you feel you deserve more credit on a problem than was given, you may submit a written request for additional credit, clearly stating why you deserve additional credit. Such requests may not be made until 24 hours after the exam was handed back and should be in the form of a memo like you would use when communicating between professionals on the job. No requests will be accepted after 30 days. Clear violation of this policy may result in a *reduction* of points

Attendance:

Attendance to lectures is generally not required, however, I will not be sympathetic to problems caused by skipping class without a documented excuse. Excessive absence (in particular, failure to attend a quiz or exam without an excuse) may cause you to be dropped from the course.

Cheating:

Don't do it. Department policy is to fail you in the course on the first offense and to expel you from school on the second.