Microprocessor-Based Systems (E155)

Harris   **Fall 2004**

Syllabus

Contact Information

Instructor:	David Harris	Parsons 2374	x73623	David_Harris@hmc.edu	
Lab Assistant:	Dan Chan		x74914	Daniel_Chan@hmc.edu	Sunday
Class web page:	www3.hmc.edu/~harris/class/e155				
Class directory:	\\Charlie\Courses\Engineering\E155				
Class email list:	eng-155-l				

Be sure to check that you are on the class email list. You should have received email before the beginning of classes. If you did not receive mail, add yourself to the list or risk missing important late-breaking announcements. To subscribe, send email to listkeeper@hmc.edu with one line in the body:

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subscribe eng-155-l
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Schedule

Lecture:	MW 1:15-2:30
Lab:	M 2:45 – 5:15 / T 1:15-3:45
Office Hours:	M 11-12, W 3-4

You will be working on labs on your own time and it is not required that you attend the entire formal lab period. However, you should plan to show up for the first few minutes of each lab to see demonstrations. You also must get your projects checked off at some point during the lab period.

You are encouraged to come to office hours to ask questions, get help with your labs, or just raid the candy jar. Even if I am not officially holding office hours, I am available more often than not, so try dropping in if you are having a problem with your lab. You may also contact the lab assistants for questions when I am not available.

Recommended Texts

The following texts are not required, but you may find them useful, especially if you are considering employment in the area of digital systems. The first three are available at the bookstore.

Wakerley, *Digital Design, Principles & Practice*, 3rd Edition, Prentice Hall 2000.
> A comprehensive text on digital design with lots of useful tips. Comes with the Xilinx student edition of the Foundation tools.

Smith and Frazon, *Verilog Styles for Synthesis*, Prentice Hall.
> Covers Verilog syntax and style issues in more depth than the class notes.

Patterson & Hennessy, *Computer Organization & Design*, 2nd Edition   Morgan Kaufmann 1998.
> This is a good introduction to computer architecture. You probably already have it from E85. We will not reference this book too often.

Grading

Labs: 50%
Final Project: 45%
Activities: 5%

Your grade in the class is based on seven labs and a final project. Late labs are not accepted, but your lowest lab score will be dropped before the average is calculated so if you are sick or have an emergency one week you can drop that lab. Labs are done individually. You are welcome to discuss them with other students or the instructor after you have made an effort by yourself. Please list the names of other students you have worked with. However, you should turn in your own work, not work identical to that of another person. **It is an honor code violation to simply copy someone else's work.** Solutions to past years labs have been handed out. Obviously, it is also an honor code violation to refer to these solutions while doing your lab. The final project will be done in groups of two.

Wednesday lectures will consist of in-class activities and design projects. Your work will count toward a small portion of your grade. Your two lowest scores will be dropped.

Schedule

Week	Monday Lecture	Wednesday Activity	Lab Demo	Due
8/30		Class Intro	no lab	
9/6	Comb & Seq Logic	Logic Design	Xilinx Schematics	
9/13	Verilog 1	FPGA Datasheet	FPGA Board	Lab 1
9/20	Verilog 2	Verilog Coding	Xilinx Verilog	Lab 2
9/27	Synchronous Design	Verilog FSMs	Logic Analyzer	Lab 3
10/4	PIC Assembly	PIC Programming	PIC ICD	Lab 4
10/11	PIC Hardware	PIC Interfacing	PIC Interfacing	Lab 5
10/18	**Fall Break: No Class**			
10/25	C Programming	C Examples	C Programming	Lab 6
11/1	Project Kickoff	Project Brainstorming		Lab 7
11/8	PRBS	Interview Questions		Project Proposal
11/15	Addition	SRT Division		
11/22	Presentations	Presentations		Project Status Report
11/29	Error correcting codes	No lecture		
12/6	Computer Eng. Jobs	Project Demos		Report Due 12/9