

Machine Organization and Assembly Language Programming

Where and When

Lectures: EE1 037 MWF 11:30-12:20

Section AA: SIG 230 Th 1:30-2:20

Section AB: MGH 235 Th 2:30-3:20

Instructor

Jean-Loup Baer, 474 Allen Center, 685-1376, baer@cs

Office hours: M 3:30-4:30 Th 11:00 - 12:00 or by appointment.

Teaching Assistants

Jeff Bigham, jbigham@cs Offices hours TBA

Stephen Checkoway, steve@cs Offices hours TBA

Course Goals

From the programmer's point of view, "the hardware" is given by its architectural specification, or Instruction Set Architecture (ISA). We will look at the general topic of computer architecture, that includes the organization and the performance of the various parts of a computer system, using the MIPS R2000 as a specific example.

Text:

D.Patterson and J.Hennessy *Computer Organization & Design: The Hardware/Software Interface* 3rd Edition, 2005

Homework:

The assignments will include assembly language programming assignments using SPIM (a MIPS assembly language simulator), simulations of components of the machine (pipeline, caches) using the C programming language, and problem sets. There will be assignments every week (well almost every week). You can discuss the assignments with each other but you should do the actual work by yourselves unless we ask you to do them in teams.

Please hand in your assignments on the due date in class. Late assignments will be either not accepted or severely penalized unless you talked about it to the instructor beforehand.

Grading:

There will be one midterm (time TBA) and one final, June 8 at 2:30

Homework 40%; midterm 20%; final 40%. These percentages are approximate. Intangibles may arise. Class participation is a bonus. (Class participation is strongly encouraged. Don't be afraid to ask questions: dumb questions do not exist. If I ask you a question and you don't know, just say so. That's no problem. I will certainly answer some of your questions also by "I don't know!".)

e-mail and WWW

We will have a class mailing list and we will communicate often through e-mail. Feel free to send Jeff, Steve, or me questions. We will forward questions and answers to the whole class if appropriate. Check the WWW CSE378 home page often.