

CS246: Graduate Computer Architecture

Fall 2003

Instructor: Prof. David Brooks, MD141, dbrooks@eecs.harvard.edu

Course Meeting Times: Monday/Wednesday 1:00-2:30PM in Maxwell-Dworkin 123

Office Hours: TBD (just stop by or email for a specific time).

Webpage: <http://www.eecs.harvard.edu/~dbrooks/CS246.htm>

Prerequisites: Architecture and/or Systems background, C Programming

Readings: Various papers/reading assignments as assigned in class.

Topics:

- Introduction to Power-Aware Computing
- Architectural Level Power Modeling
- OS Level Power Modeling/Measurement
- Chip and System Level Temperature Modeling
- Newer Trends in Power-Aware Computing (di/dt, reliability, etc)
- Architectural, Compiler, and O/S Techniques to reduce power/temperature/etc

Grade Formula

- Class Participation – 50%, Including:
 - o Discussion Participation (throughout semester, on-line and during class)
 - o Discussion Leadership (you will be assigned certain papers to lead the class through the in-class discussions)
 - o Paper Reviews (Highlight the key positives/negatives in papers)
- Project (including final project presentation) – 50%

CS246 Teaching Style:

The general theme of this course is the broad area of low-power computing. The exact content that we cover will be partially dictated by the interests and experience of the enrolled students.

This will be a seminar-style course so I expect the class to discuss and interact after reading the assigned papers. The paper readings are required and each student should submit a short paper review highlighting the interesting points and any strengths/weaknesses of the paper.

After the first several weeks I will gradually turn over the discussion leadership to individual students who will volunteer to lead the discussion on a particular paper and this will rotate through the remainder of the semester. Depending on the class enrollment, each student may be responsible for leading the discussion for 3 or 4 papers.

Project: To be discussed in class.