GEORGIA INSTITUTE OF TECHNOLOGY

College of Computing

CS6290/CS4290 — High-Performance Computer Architecture

Fall 2000

CS6290/CS4290 Handout #1 Issued: August 21, 2000 *(revised August 25)*
Introduction and Syllabus

Instructor:	Prof. Ken Mackenzie Office: CoC 219, x4-1704 Assistant: Yolanda Harris, CoC 264, x5-1353	`kenmac@cc.gatech.edu` WTh4-5.
TA:	Pat Prasangsit Office: (CoC common area)	`pp@cc.gatech.edu` time TBA
Web:	`http://www.cc.gatech.edu/classes/AY2000/cs6290_fall/`	
Lecture:	MWF3-4 in CoC 101 (Fridays are generally discussion)	
Text:	Hennessy and Patterson, Computer Architecture: A Quantitative Approach, Morgan Kaufman, 1995 (Second Edition), along with papers to be distributed in class to fuel discussions.	
Description:	This course serves as graduate-level (or advanced undergraduate) introduction to computer architecture. In this course, you will learn about the design and evaluation of computers, particularly advanced (internally parallel) uniprocessors and memory systems.	
Topics:	Memory systems: naming, protection, caching. Implicitly-parallel architectures: Out-of-order execution, dataflow, speculation. Vector processing. Interconnects (for parallel processing or for I/O) Explicitly parallel architectures Emerging hybrid architectures.	
Prerequisites:	You should be familiar with computer organization at the level of CS2200 or (old) CS3760/CmpE3510. CS students cannot receive credit for both CS4290 and CS6290 because the material is the same. Also, ECE6100 is substantially the same course.	
Assignments:	8 homeworks 2 design projects 1 in-class midterm, 1 final	

Grading: 20% Homeworks (divided evenly, lowest one dropped)
40% Projects (20/20%)
40% Exams (15% midterm plus 25% final)
CS6290 and CS4290 will be graded independently.

Tentative Calendar

(Aug)	**21**	*first class*	**23**	**25**	Homework 0 due
	28		**30**	**1**	Homework 1 due
(Sep)	**4**	*holiday*	**6**	**8**	Homework 2 due
	11		**13**	**15**	
	18		**20**	**22**	Project 1 due
	25		**27**	**29**	Homework 3 due
(Oct)	**2**		**4**	**6**	Homework 4 due
	9		**11**	**13**	Homework 5 due
	16		**18**	**20**	*midterm*
	23	*holiday*	**25**	**27**	
	30		**1**	**3**	Project 2 due
(Nov)	**6**		**8**	**10**	Homework 6 due
	13		**15**	**17**	Homework 7 due
	20		**22**	**24**	*holiday*
	27		**29**	**1**	Homework 8 due
(Dec)	**4**		**6**	**8**	*last class*

Homework and Projects

Some of the homework consists of design projects. These projects consist of paper system designs which are carefully justified using simulation measurements of benchmarks. The simulators and benchmarks are Sparc-based and written in C.

Late Policy

Homeworks are due at the beginning of the class indicated. Late homework will not be accepted.

Collaboration

Unless specifically indicated otherwise, collaboration on projects and homework in **pairs** is welcome and encouraged. If you work in a pair, turn in one write-up with the names of both collaborators. You are welcome to discuss high-level concepts with other groups, but all homework/project solutions must be worked out and written up separately.