SURVEY RESULTS

Computer Science 418 Spring Session 1997
Out: Mon Jan 20/97

There were 26 respondents

Background

(0) What degree program are you in? 12 CPSC 10 ECE 1 Eng Phys 3 Undecided

(1)	Have you taken a 3rd/4th year operating systems course?	25 yes	1 no
(2)	Have you taken a 3rd/4th year compilers course?	5 yes	21 no
(3)	Have you taken a 3rd/4th year computer networks course?	18 yes	8 no
(4)	Have you taken any EE digital logic courses?	15 yes	11 no
(5)	Have you taken any calculus courses?	25 yes	1 no
(6)	Have you taken any linear algebra courses?	25 yes	1 no
(7)	Have you taken any logic courses?	17 yes	9 no
(8)	Did you take CPSC 318 from Mark Greenstreet?	16 yes	10 no
(9)	Do you expect to study architecture further (grad school, an architecture related job, etc.)?	11 yes	14 no

(10) If you answered yes to (4), which ones (course numbers)? From the engineers, EE 256, 259, 464
(11) If you answered no to (8), what introductory architecture course did you take (course, instructor, text)? EE 476 from Ainuweiri
(12) Which computer architecture textbook do you have?

16 Patterson & Hennessey, *Computer Organization & Design: the Hardware / Software Interface* (last year's 318 text)
Feldman & Retter, *Computer Architecture: A Designer's text Based on a Generic RISC* (last year's 418 text)
1 Hennessey & Patterson, *Computer Architecture: A Quantitative Approach* (circle 1st ed. or 2nd ed.)
1 Tomek (EE book)
2 Heuring & Jordan (EE book)
6 Nothing

Why Advanced Computer Architecture?

(13) How do you expect to use the material you learn from 418 after you finish the course (pick 1 to 3)?

8 to design general purpose CPU architectures professionally
10 to design special purpose processing units (graphics, FPUs, microcontrollers, etc.)
6 to design other parts of a computer, such as cache, memory, I/O, etc
5 to design computer systems from commercial components
6 to understand operating system / hardware interaction, since you expect to program OSs
to understand compiler / hardware interaction, since you expect to program compilers
10 to understand I/O / hardware interaction, since you expect to program I/O drivers
12 to understand application / hardware interaction, since you expect to program applications
6 to understand low-level hardware, since you expect to work with microcontrollers or other "hidden"computer applications
10 to evaluate the pros & cons of an architecture for some application area
8 to evaluate the pros & cons of a specific system for some application area
4 to be a lumberjack

(14) Which areas are you most interested in (pick 1 to 3)?

14	design of general purpose CPU architectures	11	I/O / hardware interaction
7	design of special purpose processors	10	application / hardware interaction
1	design of other internal computer parts (which ones?)	9	microcontrollers / "hidden" computer applications
3	design of complete systems	10	evaluation of computer architectures
8	OS / hardware interaction	9	evaluation of computer systems
3	compiler / hardware interaction	3	lumberjacking

(15) What types of computers do you expect to create hardware or software for:

23 PCs	15 workstations	1 mainframes	2 supercomputers	4 hidden	1 video games

(16) What types of computers do you want to learn about:

21 PCs	18 workstations	2 mainframes	8 supercomputers	6 hidden	1 video games

(17) Why did you decide to take this course? I like architecture, it fit my schedule, I needed a 400 course, wanted to learn MMX and AGP, wanted to do grad work in systems.

The Material

(18)	Are there any topics from CPSC 318 that you feel need extensive review?	7 yes	19 no

(19) If you answered yes to (18), which ones? 3 Caching 3 Pipelines 1 Everything

(20) There are 26 lectures during the term. Subtracting this initial lecture, one for a midterm, and one for review, there are 23 lectures remaining. The minimum number of classes I wish to teach on each topic is listed below; these sum to 18. How would you divide up the remaining 5 lectures (circle a total of 5 from the "add classes" column):

	votes	add classes
Instruction Set Architecture: what kind of instructions should the processor implement (RISC vs CISC, instruction size, word size, number of registers, addressing modes, operations)	4	2
Modern Superscalar Architectures: how can multiple instructions be issued to multiple function units every cycle, without causing problems (handling data and structural hazards, register renaming, out-of-order issue, out-of-order completion, precise interrupts)	7	2
Finding Instruction Level Parallelism: how should the architecture find appropriate instructions to execute (different types of superscalar architectures, how they handle data and control hazards, branch prediction)	2	2
Memory Hierarchies: how is data supplied to the CPU (memory and cache design)	4	2
Hardware / Software Interface: how does the architecture affect OS and compiler design, and vice-versa.	13	1
Measuring Performance Quantitatively & Evaluating Systems for Applications: how to tell if the computer is right for the job (benchmarking, finding bottlenecks)	4	2
Economic Issues: how does economics effect the design and implementation of computers (time to market vs increased performance, breakdown of costs for computer systems)	6	1
I/O: disks, graphics, networks, and the busses that connect them to the CPU	13	2
Specialized Processors: pick one or more from: parallel, vector, multiprocessors, hidden, graphics subsystems, other	11	1
Case Study: current microprocessors and architectures (a major analysis of one architecture from all viewpoints)	15	1
History of Computers: how we got where we are now (major milestones in the history of architecture)	4	1
Formal Verification: an introduction to the type of research done in the Integrated Systems Design Lab (which many chip manufacturers are now using)	3	1
Implementation Details: an introduction to how transistors work, VLSI, different processes (CMOS, BiCMOS, GaAs, etc), and other very low level stuff	5	1

Assessment

(21)	Do you like to have marks assigned for class participation?	11 yes	14 no
(22)	Do you prefer programming or written assignments?	7 prog.	18 written

(23) Which type of exam do you feel is appropriate for this course?

7 open-book 6 single sheet of notes 13 closed-book

(24) There will be at least 3 assignments before midterm, 1 after, and a final exam. Which of the following three options would you **least** like to have for the remainder of your marks?

3 a mid-term 17 a small project 6 2 more assignments

For Next Year

(25)	Would you prefer to have a required textbook (other than the 318 text) for this course?	10 yes	15 no
(26)	Do you like having this class at 8:30?	4 yes	22 no
(27)	If you answered no to (24), would you give up another class later in the day, or switch the classes, so that this class could be later?	13 yes	8 no
(28)	Do you know anybody who is not taking this course because of the schedule?	5 yes	20 no

Any other comments — please attact another sheet of paper or email me (mitchell@cs.ubc.ca)