Name: Student Number:

SURVEY

Computer Science 418 Spring Session 1997
Out: Tues Jan 7/97 Due: Thurs Jan 9/97

Instructions: place an "X" to the left of the appropriate selection, or fill in the blanks.

Background

(0) What degree program are you in?_____

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

(10) If you answered yes to (4), which ones (course numbers)?_____
(11) If you answered no to (8), what introductory architecture course did you take (course, instructor, text)?

_____

(12) Which computer architecture textbook do you have?

_____ 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)
_____ Hennessey & Patterson, *Computer Architecture: A Quantitative Approach* (circle 1st ed. or 2nd ed.)

_____ Other (authors, title):_____

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)?

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

_____ other:_____

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

_____	design of general purpose CPU architectures	_____	I/O / hardware interaction
_____	design of special purpose processors	_____	application / hardware interaction
_____	design of other internal computer parts (which ones?)	_____	microcontrollers / "hidden" computer applications
_____	design of complete systems	_____	evaluation of computer architectures
_____	OS / hardware interaction	_____	evaluation of computer systems
_____	compiler / hardware interaction	_____	lumberjacking

_____ other:_____

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

PCs workstations mainframes supercomputers hidden other (what?)

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

PCs workstations mainframes supercomputers hidden other (what?)

(17) Why did you decide to take this course?

_____

The Material

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

(19) If you answered yes to (18), which ones?_____

(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):

	min classes	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)	4	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)	3	2
Memory Hierarchies: how is data supplied to the CPU (memory and cache design)	3	2
Hardware / Software Interface: how does the architecture affect OS and compiler design, and vice-versa.	2	1
Measuring Performance Quantitatively & Evaluating Systems for Applications: how to tell if the computer is right for the job (benchmarking, finding bottlenecks)	1	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)	1	1
I/O: disks, graphics, networks, and the busses that connect them to the CPU	0	2
Specialized Processors: pick one or more from: parallel, vector, multiprocessors, hidden, graphics subsystems, other	0	1
Case Study: current microprocessors and architectures (a major analysis of one architecture from all viewpoints)	0	1
History of Computers: how we got where we are now (major milestones in the history of architecture)	0	1
Formal Verification: an introduction to the type of research done in the Integrated Systems Design Lab (which many chip manufacturers are now using)	0	1
Implementation Details: an introduction to how transistors work, VLSI, different processes (CMOS, BiCMOS, GaAs, etc), and other very low level stuff	0	1

Assessment

(21) Do you like to have marks assigned for class participation? yes no

(22) Do you prefer programming or written assignments? prog. written

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

open-book single sheet of notes 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?

a mid-term a small project 2 more assignments

For Next Year

(25) Would you prefer to have a required textbook (other than the 318 text) for this course? yes no

(26) Do you like having this class at 8:30? yes 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? yes no

(28) Do you know anybody who is not taking this course because of the schedule? yes no

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