

525.412 Computer Architecture Course Policy

Charles B. Cameron

Engineering and Applied Science Program for Professionals

Whiting School of Engineering

Johns Hopkins University

August 31, 2011

1 Objective

This course is primarily intended for students pursuing a graduate degree in electrical and computer engineering during their spare time. It covers the design and architecture of computers. This includes processors, arithmetic and logic units, primary and secondary memory, input and output, data-path design, buses, instruction-set design, pipelining, addressing modes, reduced instruction set computing, parallel computing, and various techniques for maximizing speed. The prerequisite is a course in digital design.

2 Textbook

- Vincent P. Heuring and Harry Jordan, *Computer Systems Design and Architecture*, 2nd ed., Prentice Hall, 2004.

3 Homework, Quizzes, and Exams

Homework will be assigned every session and is to be submitted at the *beginning* of the following session. Solutions will be posted shortly thereafter on the course web site at

<http://www.apl.jhu.edu/Notes/Cameron/525.412> .

If you will be out of town on the night homework is due, you may make prior alternate arrangements with me to send me your assignment by e-mail.

Inevitably, the amount of homework I assign will not equal the amount you need to do to learn the material. If you find you are having difficulty with the assignments, this is an indication that you should do more problems and, possibly, seek help.

The credit awarded for homework is intended to be enough to encourage you to tackle it, yet not so much as to penalize you unduly while you are learning the material.

There will be four short, graded quizzes as shown on the course syllabus.

There will be a mid-term exam and a final exam. There is no way for me to offer these tests on an alternative date, even if you know in advance that you will be absent when either of those tests is held.

All quizzes and exams are open-book, open-notes, without restriction. If you have a computer, you may use it during classes, quizzes, and exams, but you should not expect electrical power to be available in classrooms as they were not designed to accommodate personal computers. If there is more demand for electrical outlets than the classroom provides, I will disallow all computers during quizzes and tests unless they have their own power source (*i.e.*, a battery.) In any event, communication with other persons either directly or by the use of any communications devices is prohibited.

Develop all your solutions with the same degree of clarity, logic, and thoroughness that makes good textbooks successful.

4 Calculation of Grades

All problems are graded on a four-point scale. (More complicated problems will be graded on some suitable multiple of four points.) The grade for any assignment is based on the weighted sum of the grades for each component problem, rounded off to the nearest whole number on a scale of 0 to 4. In the case of quizzes, the test, and the exam, I do not round off at all.

Numerical grades are assigned based on the following subjective criteria:

Item	Weighting
Homework	10%
Quizzes	20%
Mid-term exam	35%
Final exam	35%

Table 1: Computation of Grades

Letter Grade	Grade Point Range
A	3.5–4.0
B	2.5–3.5
C	1.5–2.5
F	0.0–1.5

Table 2: Correspondence between grade points and letter grades.

- 4 Excellent work
- 3 Good work; missing one or more significant points
- 2 Poor work; missing too much information
- 1 Very poor work; major deficiencies
- 0 Unacceptable work; either missing altogether or completely wrong.

I use Table 1 to compute course grades by applying the weights shown in the table. I then convert the result to a letter grade, as shown in in Table 2.

As an example of how I grade homework problems, suppose an assignment has two problems worth four and eight points, respectively. If you get A on the first problem and B on the second, you score $4 + 2 \times 3 = 10$ out of 12 points. This works out to 3.5 on a 4.0 scale, rounded off to 4.0—an A for the assignment.

5 Miscellaneous

In some specific problems, I may require you to solve a problem manually rather than with a calculator or computer if this helps reinforce a particular topic. This aside, you are free to develop or use any computer programs you wish in solving problems.

Please feel free to ask questions in class. In my experience, many people are reluctant to ask questions because they think they are parading their ignorance. This belief is nearly always completely false, not to mention self-defeating. Besides, others will benefit from the exchange, including myself.

6 Contacting the Instructor

Instructor Charles B. Cameron
Telephone (443) 223-6889 (Cell)
E-mail Charles.B.Cameron@CardinalConcern.com