

EE485F SUPERSCALAR PROCESSOR DESIGN

Course Policy—Revision 1

Fall 2010

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1 Objective

EE485F is an experimental elective course for students majoring in computer engineering. Its purpose is to give students an in-depth look at the design of superscalare processors. Beginning with a review of elementary computer architecture, we quickly move into an examination of modern methods of wringing high-speed performance from processors.

For a course like EE485F, offering three classroom hours each week, you should do an additional six hours of work each week outside class time. This can be any combination of reading, homework, or study.

The course syllabus lays out in detail the topics which we shall cover in the course. The course syllabus, this course policy, and other documents pertaining to the course can be found on the course web site at

<http://www.usna.edu/Users/ee/cameronc/EE485F/>

2 Textbook

Primary John Paul Shen and Mikko H. Lipasti, *Modern Processor Design: Fundamentals of Superscalar Processors*, McGraw Hill, 2005.

Also recommended John L. Hennessy and David A. Patterson, *Computer Architecture: A Quantitative Approach*, 3rd edition, Morgan Kaufmann, 2003.

Readings are in the syllabus. Read them before the date listed for them in the syllabus so that the classroom discussion of them makes sense.

3 Homework

Homework assignments along with the dates they are due are shown in the course syllabus. I award zero credit for late homework. Answers to the homework problems will be posted on the web.

Submit your homework on green engineering paper, stapled together, with the name of the course, your section number, the assignment number, and your own name clearly visible. Clearly identify each problem by number.

Homework must be well organized, legible, self-contained, and in the prescribed format. To be self-contained, problems must be restated in full so that there is no need to refer to another document to discover what the question was. It is permissible use a photocopy of the problem statement, if you prefer, before providing your solution.

If I cannot read your solutions, understand them, identify the answer or answers you claim are right, and comprehend the meaning of your diagrams, then your solutions will not get full—or possibly any—credit. Include all measurement units where appropriate. Use standard SI notation, such as 5 V or 30 μ A.

4 Quizzes

Quizzes are as scheduled in the course syllabus. All quizzes will be open-book, open-notes, open-computer.

5 Tests and Exams

There will be two open-book, open-notes, open-computer midterm tests of length 50 minutes. The final exam will be open-book, open-notes, open-computer of length three hours. Let me know in advance if you will not be able to attend during any test or the exam. Unexcused absences will result in a grade of zero for that test.

Tests will have a strict start/stop time. I will announce the start and end of each test by the commands “*Begin work*” and “*Cease work*.” You shall immediately place any writing instrument in your hand on the desk/table top and close the test (cover sheet on top). I shall keep the class apprised of the time remaining.

6 Collaboration

Collaboration with your fellow Midshipmen is permitted and encouraged. Such collaboration is a hallmark of all professional officers. However, the assignment you hand in must be your own. Claiming someone else’s work as your own—plagiarism—is totally unacceptable. Every homework assignment you submit needs one of the following signed statements on the front page:

- I did not receive help from anyone.
- I received help from the following people:
_____.

Collaboration is not permitted during quizzes, tests, or exams.

7 Calculators

You may use a calculator in every class, lab, quiz, test, and exam. I will not permit you to share cal-

culators during tests, exams, or quizzes. If your calculator doesn’t work and you have not brought spare batteries, plan to do arithmetic manually or on the computer, for you have no alternative.

8 Grades

I assign letter grades to all questions in every assignment, quiz, test, or exam. A grade of A indicates a thorough solution and a full grasp of a problem. A grade of B indicates a superior grasp of a problem but with some errors in thinking. A grade of C indicates a minimal grasp of a problem. A grade of D indicates significant errors in thinking or major conceptual errors. A grade of F indicates that the response did not correspond to the question, that it was devoid of effort, or that there it was missing altogether.

More difficult questions will be given a heavier weighting than easier ones. Composite grades are then determined by adding up corresponding points: 4 for an A, 3 for a B, 2 for a C, 1 for a D, and 0 for an F.

Course grades are A for 3.5 points or more, B for 2.5 to 3.5 points, C for 1.5 to 2.5 points, D for 0.5 to 1.5 points, and F for less than 0.5 points. If you are close to a boundary between grades, I will look hard for reasons why you should be boosted to a higher grade. Such reasons include performance trends, classroom participation, effort, officer-like qualities, my overall impression of your performance, and other more or less intangible factors.

Weightings of tests, quizzes, and homework are shown in Table 1 on page 3. I reserve the right to alter course letter grades up or down based on your class participation, performance trends, officer-like qualities, and my overall impression of your performance.

9 Extra Instruction

I would prefer that you make an appointment by e-mail for EI. See my schedule for a list of generally open times.

If you need EI, bring your course notes, homework problems, and specific questions or problems

	6-week	12-week	16-week	Final Grade
Final Exam	—	—	—	30%
Term Paper	—	—	14.3%	10%
Test 2	—	25.0%	21.4%	15%
Test 1	33.3%	25.0%	21.4%	15%
Quizzes	44.4%	33.3%	28.6%	20%
Homework	22.2%	16.7%	14.3%	10%
Class Participation	subjective			

Table 1: Grade Weightings

confronting you. If you are having trouble learning the material and applying it to solving problems, it would be wise to get extra instruction.

I will accept phone calls at home up to 2200 and will do my best to give decent assistance by telephone. I am almost invariably in my office by 0700, if not earlier.

Finally, you may ask me questions via e-mail, too.

10 Administrative Matters

10.1 Questions

Feel free to ask questions in class. I would rather clear up a difficulty immediately than see you cease all progress because of a misapprehension. If it is indicated, I may ask you to schedule extra instruction.

10.2 Sleeping in Class

Even if you are drowsy, *do not sleep in class*. Stand up quietly and go to the back of the room. You do not need my permission to do so. When you are ready, quietly return to your seat.

10.3 Omitted Material

I cannot cover everything during class. If some topic or example is not covered, that does not mean it is unimportant. Refer to the EE485F course objectives to make sure you have not overlooked anything.

10.4 E-mail and the Web

I plan to rely heavily on e-mail and the web to communicate with you. Check your e-mail at least daily so you don't miss something I send you. Bear in mind that e-mail is not instantaneous: although the mail may be in my box, I may not read it for some hours.

10.5 Absence/Makeup Policy

You must notify me prior to missing class if you will be absent. Arranging for makeups of exams, quizzes, or labs is *your responsibility* and must be done within one week.

10.6 Section Leader's Duties

I will appoint a Section Leader and an alternate during the first class. The alternate will fill in for the Section Leader if the latter is absent. I require the Section Leader to

- call the section to attention and report the names of absent students at the start of class;
- collect and submit all homework and other assignments to me at the beginning of class. Separate different assignments into different piles;
- call the class to attention for dismissal at the end of class;
- muster the class in the parking lot of Maury Hall during emergencies, fire drills, etc., and report absences to me; and

- contact the ECE Department by phone (3-6150) if I am more than 10 minutes late for class to ask my whereabouts. If I am not expected to arrive at all, direct the class in a study period, collect all homework, and deliver it to the ECE Office before the close of business that day. Do not dismiss the class early.

I am obliged to report Midshipmen who are late, are absent, or leave early.

10.7 Eating and Drinking in Class

Food is permitted in the classroom provided it does not distract the class. Drinks must have a cover.

You are responsible for keeping the classroom clean. Abuse of this privilege will result in drinks being banned from the classroom.

10.8 Contacting the Instructor

Instructor: CAPT Charles B. Cameron
Telephone: (410) 293-6152 (Work)
(410) 757-8876 (Home, up to 2200)
E-mail: cameronc@usna.edu
Office: Maury Hall 330