

CSC 4210 Computer Architecture
Fall 2016
10:00 -11:45 MW, Room #100 South Classroom

Instructor: Dr. Chaoyang Li

Office: Room 648, 25 Park Place
(470) 263-8343
cli@cs.gsu.edu

Office Hours: After class and by appointment

Teaching Assistant: Venkata surya sandeep katuri
TA's office hours: TBA

TA's office: 0650N
TA's e-mail address: vkaturi1@student.gsu.edu

Final Exam

The Final Exam will be given in the above classroom on Tuesday, December 13, 8:00 am-10:30 am.

Textbooks

M. Morris Mano. *Computer System Architecture*. 3rd Ed. Prentice Hall 1993. (Required.)

Hennessy and Patterson, *Computer Architecture: A Quantitative Approach*. 3rd Edition. Morgan Kaufmann 2002. (You do not need to purchase this, but it is a good reference).

Attendance

Student is allowed up to two (2) absences. Roll will be taken during class, and a late student will be counted as absent. If a student has greater than three absences, then the instructor may drop the student from the class or drop the final grade by one letter grade. Any student missing a lesson is responsible for all material assigned or covered in class during his or her absence. Do not send me an e-mail asking what was covered in the class(es) missed.

Prerequisites

CSC3210 Computer Organization and Programming (assembly language) with grade of C or higher. In addition, students are expected to know discrete structures applicable to computer science, number bases, logic, sets, Boolean algebra, graph theory.

The department will strictly enforce all prerequisites. Students without proper prerequisites will be dropped from the class, without any prior notice, at any time during the semester.

Content

Logic design, combinatorial and sequential circuits, micro-operations, computer organization and design, programming a basic computer, controllers and micro-programmed control, central processing unit, bit slicing, input-output devices, memory. Additionally, as time permits, pipelining, reduced instruction sets (RISC), and VLIW (Very Long Instruction Word).

Parts:

1. Preliminary / background (chapters 1 to 4). You may have had this already in other classes, but need it for later material. Building up to chapter 5.
2. Chapter 5 - design of a CPU
3. Chapter 7 - design with micro-coding
4. Advanced concepts (time permitting) including cache

My assumptions:

You are here to learn computer architecture as best you can
You will give your best effort
You will read the book
You will come to class on time and stay to the end
You will pay attention and communicate
You will use class time for class-related activities only

Grading Policy

The nature of the course is that complex questions often have simple, elegant answers. However, a simple answer with no detail is of little value, especially if it is incorrect. Therefore, every answer that you give for this class, including homework, quizzes, and tests, should include an explanation on how you arrived at your answer, assumptions that you made, any other considerations, and how you know that your answer is correct. Expect to lose points if the explanation is insufficient. Expect to lose points if you do not staple your work when it exceeds a page. Also, we will consider things including presentation, neatness, legibility, and professionalism when grading your work. Your work may lose points if it is found lacking.

- o Participation will constitute 5% of the course grade.
- o Attendance (and paying attention) will constitute 10% of the course grade.
- o 2 equally weighted tests will constitute 40% of the course grade.
- o 5 Quizzes (at 5% each) will constitute 25% of the course grade.
- o About 7 homeworks will constitute 20% of the course grade.

Other Policies:

1. Make-up exams must be arranged prior to the scheduled date and will be allowed only at the discretion of the instructor. There will be no make-up quizzes.

2. All assignments must be turned in before the due day. Assignments should be scanned and submitted to the Dropbox in Brightspace by Desire2Learn. Assignments turned in after the due date and before the end date will be considered late. No assignments will be accepted after the end date.
3. The penalty for late assignment submissions is 20%. Policies 2 and 3 do not apply if the assignment is an in-class assignment. In this case, the assignment must be completed during the allocated time.
4. Any material submitted for work should be the student's own work. Duplicate assignments or portions of such will receive a grade of zero. This is at the discretion of the instructor. Any student found to be cheating on any graded work will receive a score of zero. The Dean of Students office will also be notified. Refer to the university policy.
5. All re-grading requests must be made within two classes of when the work was returned in class.
6. Cell phones and pagers must be turned off during class. First violation receives a warning. All succeeding violations result in a ten point deduction off the final exam. Any violation during a quiz or exam results in a ten percent deduction off the corresponding paper. No warnings for quizzes or exams
7. All exams and quizzes will be proctored by an experienced instructor.
8. Seat assignments may be issued for any exams or quizzes, as may multiple, but equivalent papers.
9. Different room assignments may be used for exams.
10. No food or drinks allowed in the classroom.

Last date to withdraw: Tuesday, October 11, 2016 (SEMESTER MIDPOINT)

Note: This syllabus represents a general plan for the course and deviations from this plan may be necessary during the duration of the course.