CS 572 Micro Architecture
Syllabus – Fall 2017
San Diego State University

MW 14:00-15:15, ENS 106

Instructor: Dr. Tao Xie
Office Hours: MW 11 am-12 pm

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Class Web Page

Homeworks and announcements are posted on the class web page:
http://taoxie.sdsu.edu/cs572/index.html

Handout, assignments, and important course information will be posted periodically on the class web page, which you have to regularly check.

Prerequisite: CS 370 Computer Architecture and knowledge of the C programming language on Linux

Objectives

This course aims to introduce many issues and challenges involved in designing and implementing modern computer systems. Since application developers definitely benefit from understanding how computer systems work, we will be focusing on the architecture and implementation of von Neumann computer systems. Understanding the interdependence of architectural and implementation decisions is of help to the development of applications where performance is a critical issue. Specific objectives of this course include:

- To learn the principles behind the design of modern computer systems
- To understand the design of instruction sets
- To learn pipelining techniques
- To understand issues in hierarchical memory system design
- To classify and describe parallel computer architectures
- To demonstrate the ability to program microprocessors in assembly language

Textbook

John Hennessy and David Patterson, "Computer Architecture: A Quantitative Approach" fifth edition, by Morgan Kaufmann, 2012, ISBN: 978-0-12-383872-8 (Required)

Topics Covered

Basics of machine organization, principles of instruction set design, computer arithmetic, pipelining, memory hierarchy, autonomous I/O, quantitative

characterizations of CPU, memory and I/O performance. (These topics may change.)

Exams and Grading

Mid-term	20%
Final Exam	20%
Quizzes	10%
Class Participation	5%
Written Assignments	15%
Lab Assignments	30%

Scale

Letter grades will be awarded based on the following scale. This scale may be adjusted upwards if it is necessary based on final grades.

A ≥ 90   A- ≥ 86   B+ ≥ 82   B ≥ 78   B- ≥ 74   C+ ≥ 70   C ≥ 66   C- ≥ 62
D+ ≥ 58   D ≥ 54   D- ≥ 50   F < 50

Reading

Students are expected to read the appropriate sections of the book before each lecture.

Written Assignments

There will be three written assignments. Late assignments will **NOT** be accepted without prior arrangement.

Quizzes

There will be five quizzes. Each quiz has 3 points including 1 point for class participation towards final grade.

Lab Assignments

There will be three lab assignments. Late assignments will **NOT** be accepted without prior arrangement.

Class Guidelines

- Prerequisite: The prerequisite for this course is CS370. This prerequisite will be **strictly enforced**. All registered students are required to bring me the proof of having passed CS370, or an equivalent course. Those who fail to provide this proof will be given a grade of "F" in the class.
- There will be **NO make-up tests** without a verified excuse.
- **I will not sign late drop slips!** By enrolling in this course, you are making a commitment to finish it.

- Failure to appear for the final exam will result in a grade of "F" in the course, unless you make prior arrangements with me for an Incomplete (see the requirements for receiving and Incomplete below). If you cannot attend the final exam for any reason (conflict with another course, work schedule, etc.), you should drop this class now. No make-up final exam will be given.
- **Incompletes**: To receive a grade of Incomplete ("I") in this class, you must meet all of the following criteria: a. You must have extenuating circumstances beyond your control for not completing the course, and I will be the sole judge as to whether the circumstances warrant withdrawal from the class. Official verification is required to corroborate your circumstances. b. You must have completed Midterm Exam, and at least 2 written assignments and 2 lab assignments. c. You must have a grade of "C" or better in all coursework completed thus far. Note that this means a C or better in every test and every assignment.
- There will be **NO extra credit** in any assignments, tests, and final exam.
- All written assignments are due at the start of class on the indicated due day. If you can not make it to the class, please ask your friend to bring it at the start of class. **No late homework** will be accepted.
- All the exams are **close-book, close-notes**.
- Any questions about grading must be brought to the attention of the grader or the instructor **within one week** after the item in question is returned. Your request must include a short written statement describing your question or concern.
- **No cell phones, No Pagers, No speaking** in class.
- **Cheating**: Any one caught cheating/collaborating on an exam or any assignment will receive an F in the course. In addition, please do not attempt to recycle answers from the Internet (plagiarism).The incident will be reported to the Office of Judicial Affairs for disciplinary proceedings. Note: If, for instance, you allow your assignment to be copied by a classmate, you are considered as guilty as the copier.
- The instructor reserves the **right to revise** the Class Guidelines when he thinks that it is necessary to do so.

For Students with Disabilities

 If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.