

CS 5113
Computer Organization and Architecture
Spring, 2020
Course Syllabus

Meeting Time and Place: Tue. 4:30-7:10pm, CLB 321

Required Textbook: *Computer Architecture A Quantitative Approach, Fifth Edition* by John L. Hennessy and David Patterson, Morgan Kaufmann

Instructor: N. Park

E-mail: npark (at) cs.okstate.edu

Course Home Page: Canvas

Office: MSCS 211

Office Hours: T 2:00-4:00pm

Office Phone: 405-744-7937

TA: Zuqiang Ke

E-mail: zuqiang (at) cs.okstate.edu

Office: TBA

Office Hours: TBA

Prerequisite: CS 3443 (Computer Systems)

Tentative Grading:

- Programming/Homework Assignments: 50%
- Midterm-Exams (3): 10% each (Tentative dates: Feb.4, Mar.10, Apr.21)
- Final Exam (Comprehensive): 20% (TBA)

Tentative Grading Scale: [90-100%] A, [80-89%] B, [70-79%] C, [60-69%] D, [0-59%] F

Course Objective and Description: The objective of this course is to study computer architecture by examining architectural concepts with consideration of use and performance. This course covers a number of issues involved in the design and utilization of high performance computing systems. This includes: Instruction Set Architecture, Performance Evaluation, Pipeline Microprocessor, Cache and Memory, Multiprocessor, Interconnection Network

Note: Homeworks, term papers and program assignments are due at the beginning of class on the date they are due (unless announced in class otherwise). Late homeworks will **not**

be accepted. Late program penalty is **10%** per calendar day, according to the date and time on the printout. Only when verifiable extenuating circumstances can be demonstrated will make-up exams or extended assignment due dates be considered. Verifiable extenuating circumstances must be reasons beyond control of the students, such as illness or accidental injury. Poor performance in class is not an extenuating circumstance. Advise your instructor of the verifiable extenuating circumstances in advance or as soon as possible. In such situations, the date and nature of the make-up exams and the extended due dates for the assignments will be decided by the instructor.

Collaboration Policy: Discussion of techniques and ideas covered in class is encouraged. However, every line of on all assignments must be **your own**.

A statement required by the university: “Care must be taken that exam answers are not seen by others, that term papers or projects are not plagiarized by others or otherwise misused by others, etc. Even passive cooperation in a dishonest enterprise is unacceptable.”

- In **programming assignments**, discussion of techniques in a natural language (such as English) is allowed, but a discussion in a computer or algorithmic language is not allowed. (Computer language discussions and questions are to be limited to the language and should not concern the assignment.) Stealing, giving or receiving any code, drawings, diagrams, texts or designs is not allowed.
- In **examinations**, no discussion of any kind (except with the instructor) is allowed. No access to any type of written material is allowed.
- Students who do not comply with the above described collaboration policy will receive a grade of F in the course. Furthermore, the case will be reported to the University Officials.

Tentative Course Outline:

1. Introduction to Microprocessor Design
2. Instruction Set Design
3. Pipelined Processor
4. Advanced Pipelining and Instruction-Level Parallelism
5. Memory Systems
6. Storage Systems and I/O
7. Interconnection Networks
8. Multiprocessors
9. Etc.