

SYLLABUS: CS 35101- 002 Computer Architecture, Fall 2005

Instructor: Ruoming Jin, Assistant Professor
E-mail: jin@cs.kent.edu
Telephone: (330) 672-9063

Class Hours: 6:15 – 7:30, MW
Office Hours: 7:30- 8:30 , MW, or by appointment
Course webpage: <http://www.cs.kent.edu/~jin/ComputerArchitecture.htm>

Credit: 3 Credit Hours
Textbook: Computer Organization and Design: The hardware/Software Interface,
Third Edition, David A. Patterson & John L. Hennessy, ISBN: 1-55860-604-1

Course Objective & Outline

To learn the internal organization and operation of computers.
Topics covered include:

1. Computer Architecture Intro
2. Instructions: Language of the Computer
 - Intro to MIPS instruction set, addressing in MIPS
3. Arithmetic for Computers (Datapath)
 - Datapath elements overview
4. Assessing and Understanding Performance
5. The Simple Processor: Datapath and Control (Datapath, Control)
 - Single cycle implementation, multi-cycle implementation, interrupts and exceptions
6. Enhancing Performance with Pipelining (Datapath, Control)
7. Large and Fast: Exploiting Memory Hierarchy (Memory)
 - Memory Hierarchy, Cache and virtual memory
8. Storage, Networks, and Other Peripherals (Input , Output)
 - I/O Control methods, System Bus, Synchronization of control

Homework/Projects (Assignments)

There will be five assignments. Each will account for 10% of your overall grade. The scope, date and policy for each assignment will be discussed during class time, about a week before it is assigned.

Mid-Term Test

The mid-term test will account for 20% of your overall grade.

Final Exam

The final exam is comprehensive, and will account for 30% of your overall grade.

Grading

Grades will be assigned based on the range of percentages indicated below:

Grade Level
Percentage

A	90% and higher
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60%

Coursework

The student is responsible for obtaining missed notes, assignments, and completing the lab exercises. Late assignments will not be accepted without a valid excuse. In the event that a student misses an assignment/exam, a zero may be assigned for the assignment/exam score. A make-up test or exam may be allowed only in the case of an excused absence or a documented valid emergency. If a student will be unable to attend a class, please let the instructor know in advance. Any work that you do for this class is to be your own. Any violation means that the work will not be accepted and further action may be taken.

Students with Disabilities

In accordance with the University policy, if you have a documented disability and require accommodations to obtain equal access in this course, please contact the instructor at the beginning of the semester or when given an assignment for which an accommodation is required. Students with disabilities must verify their eligibility through the Office of Student Disability Services (SDS) in the Michael Schwartz Services Center (330-672-3391)