NORTHEASTERN UNIVERSITY
Department of Electrical and Computer Engineering

ECE U230

Computer Architecture for CS

Spring 2006

Instructor: Jacob Shekel
204B Forsyth
Ext. 2795
email: shekel@ece.neu.edu
Office hours: W 12-1 or by appointment

SYLLABUS

Prerequisite: CSU380 (or equivalent COM 1130).


(If you have the Second Edition, you may use it in this course).

Description: An introduction to the organization and architecture of computer systems. The MIPS assembly language acquired in the prerequisite course is used to illustrate the Instruction Set Architecture. The basics of digital and logic circuits are introduced, followed by a description of the structure and function of the datapath and control hardware. The implementation of the instruction set is illustrated by single-cycle, multiple-cycle and a basic pipeline. The course covers the architecture of modern high-performance processors, including pipeline hazards and resolutions, memory management (caching and virtual memory), I/O and storage systems. The course emphasizes the role of computer architecture and compilers/assemblers in system performance.

Homework: Homework will be assigned weekly, due the following week. Late homework will not be accepted.

Examinations: Two midterm exams are tentatively scheduled for the weeks of 2/13 and 3/27. The actual date for the exam will be determined by the progress in the course. Exams will be open book and notes. No makeup exam will be given.

Grading: The composition of the final grade is:

Homework 15%
Midterm Exams (20% each) 40%
Final exam 45%

If a midterm exam is missed, the Final Exam will carry 20% more of the grade. An Incomplete grade will be given only in strict adherence with the University regulations.