CSE320 Computer Organization and Architecture
Spring 2014

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Office Hours: Monday 10-11:30am,
Thursday 1-2:30pm or by appointment

Course Homepage:
https://piazza.com/stonybrook/spring2014/cse320/home

Course Objectives and Description
This is an introductory undergraduate course on computer organization and architecture. Students who plan to take this course are expected to have taken CSE220 and some familiarity with C and MIPS programming languages. The focus of this course is on the computer organization or so-called microarchitecture of a computer system, including the processor architecture, the memory system, and the I/O devices. In particular, we will discuss the internal representation of information, performance evaluation methodology, instruction set architectures and implementation techniques for computer arithmetic, control path design, and pipeline control.

The official course goals agreed upon by the faculty for this course are:
- An understanding of processor organization and the memory hierarchy.
- An understanding of the design principles of instruction set architecture in terms of the programming flexibility, hardware complexity, and implementation efficiency of complex versus reduced instruction set computers.
- Knowledge of implementation techniques such as computer arithmetic, memory hierarchy, pipelining, and disk I/O.

Prerequisite
CSE 220 and CSE major or permission of instructor

Class Time/Place
Mondays and Wednesdays, 8:30AM-9:50AM, Frey Hall 105.
Final Examination: Wednesday, May 21, 8:00AM-10:45PM.

Textbook
Computer Organization and Design, 5th edition, trade paperback (2014), Authors: Patterson and Hennessy, ISBN 978-012-407726-3, Morgan Kaufmann

Grading
The final grade will be determined based on the following:
- **Homework Assignments/Quizzes/Small Projects (30%)**
  There will be 4-5 Homework assignments. These assignments may contain small programming assignments. In addition, in lieu of turning in the homework a short quiz <u>may be</u> given in lecture. Quiz dates will be announced with the homework assignments and on the webpage. Make-up quizzes will not be given. All students must be present at the time of the quiz.
- **Two Midterm Examinations (20% each)**
  Midterm exams will be held during lecture times in the lecture classroom. No make-up exams will be given, except for prior excused absences with documentation.
- **Final Examination (30%)**
  The final examination will be cumulative of all material from the course.

The Pass/No Credit (P/NC) option is not available for this course.

Homework Assignments/Quizzes/Programming Assignments

There will be homework assignments given regularly. Each homework assignment will consist of a set of questions related to the current course material which will be similar to the type of questions on the final exam. "Homework" quizzes which contain questions either directly or slightly modified from the homework assignment will be given in lecture. The quizzes are to be completed individually in the allotted time. No makeup quizzes will be given.

Homework assignments/programming assignments must be turned in on the day they are due. Students are urged to plan ahead to avoid problems such as congestion or failure of computer facilities at the last minute. If your assignment is incomplete or is not working by the due date, turn in whatever you have. If some sort of emergency prevents you from submitting your assignment on time, supplying me with suitable documentation might influence your final grade, but do not ask for an extension to the assignment.

Academic Dishonesty

You may *discuss* the homework assignments with anyone you like, however each students' *assignment (including coding)* which they submit must be their own work, and only their own work. Any evidence that source code or solutions have been copied, shared, or transmitted *in any way* (this includes using source code downloaded from the Internet or written by others in previous semesters!) will be regarded as evidence of academic dishonesty. The College of Engineering and Applied Sciences regards academic dishonesty as a very serious matter, and provides for substantial penalties in such cases, such as receiving an 'F' grade, or expulsion from the University. For more information, obtain a copy of the CEAS guidelines on academic dishonesty from the CEAS office.

Be advised that any evidence of academic dishonesty will be treated with utmost seriousness. Those involved will be prosecuted to the fullest extent permitted by the University and College laws.

The following statement about academic dishonesty, adopted by the Undergraduate Council on September 12, 2006, is required to be included in syllabi for all undergraduate courses:

> *"Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website."*

Students with Disabilities

"If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge that you contact the staff in the Disability Support Services office (DSS), ECC Building (behind SAC), 632-6748/TDD. DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation of disability is confidential."

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to their and search Fire Safety and Evacuation and Disabilities.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.