CPSC 330 – Computer Organizations
Fall 2006

Instructor: Dr. C. Gerousis
Office Phone: 594-7603 Department Office: 594-7065
Office: Room 128 Gosnold Hall
Email: gerousis@pcs.cnu.edu

Office Hours: I will be available in my office for consultation and questions during the following hours:
   M: 1:00 pm – 2:00 pm
   T: 11:00 pm – 12:00 pm
   W: 1:00 pm – 2:00 pm
   Th: 11:00 pm – 12:00 pm
   And by appointment only.

Web: http://www.pcs.cnu.edu/~gerousis


Prerequisite Courses: CPSC 150 and CPEN 214

Prerequisite Topics (assumed knowledge)
- Fundamentals of programming (knowledge of a high level language)
- Combinational logic circuits
- Sequential logic circuits

Catalog Description
Study of computer organization and architecture. Examine functional organization of a computer including computer micro-operations, control organizations, basic instruction sets, addressing modes, CPU design, memory organization, and input-output organization. More advanced topics including pipeline and multiprocessors are also introduced.

Course Goals
- To provide an understanding of the basic performance criteria, organizational structures and functions of contemporary computer systems. The emphasis is to show the relationship between the hardware and software, and to focus on concepts that are the basis for current computers.
- To become familiar with assembly language programming.
Course Topics
- Introduction & Computer Abstractions and Technology (Chap. 1)
- Instructions: Language of the Computer (Chap. 2)
- Arithmetic for Computers (Chap. 3)
- Assessing and Understanding Performance (Chap. 4)
- Datapath and Control (Chap. 5)
- Enhancing Performance with Pipelining (Chap. 6)
- Memory Hierarchy (Chap. 7)
- Storage, Networks, and Other Peripherals (Chap. 8)
- Multiprocessors and Clusters (Chap. 9)

Grading Policy:
Final grades in the course will be based on the following weighting distribution.
- Homework ....................... 20%
- Quizzes ............................. 10%
- Midterm 1 .......................... 20%
- Midterm 2 .......................... 20%
- Final Exam ......................... 30%

Homework
There will be 7-8 homework assignments assigned during the semester. Homework is due at the start of the class period on the due date. Late homework will not be accepted except in cases of documented illness or emergency.

All coursework must be clear, legible, and have the name, course, and assignment number in the upper right hand corner of the page. Please use only 8.5" x 11" paper and staple multiple sheets. Homework will not be corrected; solutions to the homework problems will be posted on the window by my office. A few additional comments about homework:

- Since we move at a fast pace during the semester, you will need to pay particular attention to keeping current on the assignments.
- Cooperative group study on the homework is encouraged, but simply copying someone else's work is unethical and will leave you unprepared for exams. Much insight can be gained by studying with one or more groups.
- Usually the biggest contributor to excessive time spent on homework is failure to read the text material and/or lecture notes for understanding prior to attempting problems. The text is thorough and well written; take advantage of it! Hence, reading is part of the homework.

‘For More Practice’ problems can be found on the CD that accompanies the book. Check the link provided on the course webpage to download the solutions.
**Exams**
All exams including the final are closed book and closed notes. Some performance equations will be provided on the exam. I will not give make-up exams except in cases of documented illness or emergency. Please get in touch with me as soon as possible if such a situation arises. I will not give any early exams except in extreme circumstances.

**Quizzes**
Roughly 10 unannounced quizzes will be given during the semester. These are 10-minute, short-answer quizzes. In the past students rated the use of these quizzes favorably as they felt motivated to attend and prepare for class. I will not give make-up quizzes except in cases of documented illness or emergency.

**Computer Usage:**
CPSC 330 is NOT a programming course. However, few assignments especially from chapter 2 will require MIPS Assembly Language programming, which illustrate the representation of instructions and operations in a computer. The programming assignments can be done on any computer of the student's choice and the source code for the assignments must be submitted to WebCT but **NOT** to gerousis@pcs.cnu.edu. We will be using the SPIM simulator to run programs.

**Disability Statement:**
Any student who believes that she or he is disabled should make an appointment to see me to discuss your needs. In order to receive an accommodation, your disability must be on record in the office of Career and Counseling Services (594-7407, CC 146).

**Class Conduct:**
Treat others in the class with respect. Please feel free to ask questions. Please arrive to class on time and turn off cell phones and beepers.

**Academic Integrity**
The students and faculty of Christopher Newport University have instituted a strict honor code:

> On my honor, I will maintain the highest possible standards of honesty, integrity and personal responsibility. That means I will not lie, cheat, or steal and as a member of this academic community, I am committed to creating an environment of respect and mutual trust.

This class will be run under the aegis of this honor code. This means that, as a student, you are expected to abide by this policy. Specifically, this means that you agree not to cheat in this class. **Any indication that the work on an exam is not entirely your own is considered a violation of the honor code and will result in a failing grade in the class.**