CS2321 Course Outline
Principles of Computer Design

April 7, 2006

Instructor: John E. Howland
Text: Computer Organization & Design, The Hardware / Software Interface by Patterson and Hennessy

1 Course Objectives

- Understand how computers are organized
- Understand the relationship between hardware and software
- Understand the role of performance in the design of computers
- Understand assembly language programming

2 Examinations

There will be three hour exams and a final project which is due at the final exam period and will be presented at that time (Monday, May 8, 2006 at 2:00 p.m.)

- Exam I, February 10, 2006
- Exam II, March 3, 2006
- Exam III, April 7, 2006

3 Laboratory Problems

Several laboratory problems will be assigned. These problems are to be done on an individual basis following the Trinity University Academic Integrity Policy or Honor Code.

4 Academic Integrity and Honor Code

All students are covered by a policy that prohibits dishonesty in academic work. The Academic Integrity Policy (AIP) covers all students who entered Trinity before the Fall of 2004. The Academic Honor Code covers all those who entered the Fall of 2004 or later.

The Integrity Policy and the Code share many features: each asserts that the academic community is based on honesty and trust; each contains the same violations; each provides for a procedure to determine if a violation has occurred and what the punishment will be; each provides for an appeal process. The main difference is that the faculty implements the AIP while the Honor Code is implemented by the Academic Honor Council. Under the Academic Integrity Policy, the faculty member determines whether a violation has occurred as well as the punishment for the violation (if any) within certain guidelines. Under the Honor Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to investigate, adjudicate, and assign a punishment within certain guidelines if a violation has been verified.

Students who are under the Honor Code are required to pledge all written work that is submitted for a grade: On my honor, I have neither given nor received any unauthorized assistance on this work and their signature. The pledge may be abbreviated pledged with a signature.

Laboratory problems should be submitted electronically (e-mail to cs2321@ariel.cs.trinity.edu) on or before the due date and should contain a problem write-up, source code to any programs and data sets used in solving the problem.

5 Grading

Final semester grades will be determined approximately as:

- Hour exams 35%
- Final project 25%
- Laboratory Problems 30%
- Class discussion/participation 10%

Class discussion and participation is a subjective measure of evaluation. It is the responsibility of the student to participate in course activities. This includes class attendance, in-class discussion when appropriate and discussion on the class discussion list CSCI2321. Visit the archives of the class discussion list.

6 Topics

- Abstraction

- Performance Measurements
- Instruction Set Specification
- Computer Arithmetic
- Datapath and Control
- Pipelining
- Memory Hierarchy
- I/O and Peripherals
- Multiprocessors