

**DESIGN AND ARCHITECTURE OF COMPUTER SYSTEMS**  
**CS161 SYLLABUS**  
**Spring 2006**

**INSTRUCTOR:** L.N. Bhuyan (<http://www.cs.ucr.edu/~bhuyan/>)

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**LECTURE TIME:** T,Th 12.40-2 pm **PLACE:** Engg. 2 142

**OFFICE HOURS:** W 3.00-4.00 or By Appointment

**TEXT:** John L. Hennessy & David A. Patterson: *Computer Organization and Design: The Hardware/Software Interface*, Morgan Kaufman Publishers Inc., 1997, 3rd Ed.

**COURSE OUTLINE:** This course will show the relationship between hardware and software and focus on computer architecture and design. It will also show the students (1) the forces of rapidly developing VLSI technology, which drive the development of the new architectural techniques, (2) the decisions that must be made to develop a successful design, and (3) performance criteria that can be used to make these design decisions. The course is covered by the following chapters from the textbook.

Chapter 1: Introduction

Chapter 2: MIPS Instructions

Chapter 3: Computer Arithmetic

Chapter 4: Understanding Performance

Chapter 5: The Processor: Datapath and Control

Chapter 7: Memory Hierarchy

Chapter 8: I/O System

**PREREQUISITE:** The student is expected to have an elementary knowledge of assembly language programming (CS061) and digital system (CS120B).

**CO-REQUIRE:** CS 161 L

**GRADING:** Test 1: 20%, Test 2: 30%, Test 3: 30%, Homework: 20%. Final grading will be based on curve. **Note:** No make-up examination is allowed unless permission is obtained from the instructor prior to the exam date. Appropriate penalty for late submission of homework.