Fall 2015

CSCI 3301

Abdul Rahman Alsamman
University of New Orleans

CSCI 3301 Computer Organization
ENEE 3583 Computer Sys Design

Syllabus

General Information

- Dr. AbdulRahman Alsamman
  - Office: EN 842,
  - Phone: 280-7161
  - Email: aalsamma@uno.edu
- Office Hrs:
  - M 3:30pm – 5pm; 3:15pm – 5pm T/Th.
- Classroom:
  - EN 316
- Classtime:
  - 2pm – 3:15pm T/Th

ENEE 3583 Course Information

- Computer System Design, 3 cr.
- Description:
  - The design process of digital computer systems is studied from the instruction set level, system architecture level, and digital logic level. Topics include machine organization, register transfer notation, processor design, memory design, and input/output considerations.
- Prerequisites:
  - ENEE 2582, ENEE 2586
  - Concurrent registration in ENEE 3514.
    - Non CpE students don't have to register in the lab.

CSCI 3301 Course Information

- CSCI 3301 Computer Organization, 3 cr
- Description:
  - Processor design and performance evaluation; instruction set design and addressing; data path design and pipelining; control structures and microprogramming; memory management, caches, and memory hierarchies; interrupts and I/O structures; introduction to parallel processing.
- Prerequisites:
  - CSCI 2120 and CSCI 2450

Textbook

- Computer Organization and Design: The Hardware/Software Interface
  - 5th edition
  - Publisher: Morgan Kaufmann
  - Authors: D. Patterson & J. L. Hennessy
  - ISBN: 0124077269
- Class Notes will be available on Moodle.

Outcomes, Goals and Objectives

- OUTCOMES:
  - Ability to identify, formulate, and solve engineering problems.
  - Ability to design a system, component, or process to meet desired needs.
  - Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- GENERAL GOALS:
  - Knowledge of computer architecture in its rapidly changing form as it relates to design of CPU, memory, and I/O interfacing
  - Ability to analysis computer systems and performance
- INSTRUCTOR'S GOALS:
  - Make the class informative and enjoyable.
  - So **ask** questions, offer **feedback** on the course, and **learn** from fellow students

Schedule

Topic	Chapters	Week
Introduction & Motivation	1	1
Instruction Set Architecture	2	2
Overview of CPU architectures, General Purpose vs Special Purpose, RISC vs CISC	2	3
MIPS	2,4	4
Single Datapath Design	4	5
Pipelining	4	6
Instruction Level Parallelism	4	7
Performance		
Memory Hierarchy	5	8
Virtual Memory	5	9
Input/Output System Design	4	10
Multicore and Multiple Processors	6	12
GPGPU	6	14

Testing, Assignments, Grading

- TESTING:
  - 3 Tests on Th 9/24, Th 10/22, Th 11/19
  - Final Exam: Th 12/10, 3:00pm – 5pm
  - In-class pop-quizzes
- ASSIGNMENTS:
  - Homework will be graded primarily on effort.
  - Student is responsible for reading the assignment on Moodle.
  - Unless otherwise stated, all HWs are groups HW.
  - You may form groups of 4 students.
- GRADING POLICY:
  - Homework 15%
  - 3 Tests 60%
  - Quizzes 5%
  - Final 20%
- GRADE: A:90-100, B:80-89, C:70-79, D:60-69, F: < 60.

- IMPORTANT DATES:
  http://www.uno.edu/registrar/bulletin/important-dates.aspx#Fall
  - Labor Day Holiday 9/9
  - Mid-semester Break 10/15-16
  - Thanksgiving Holidays 11/26-27
  - Last day of classes 12/4
- ATTENDANCE
  - Attendance is required.
  - Attendance of tests is mandatory.
  - Students are responsible for material covered in class as well as assignment due dates and test dates.
- MAKEUP POLICY

  No makeup will be given for missed homework or examinations without valid excuses. The instructor will make decisions regarding the makeup in the case of valid and/or written excuse.

- Academic Integrity

  Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at http://www.studentaffairs.uno.edu.
- Students with Disability

  It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to http://www.ods.uno.edu.
- Changes in Course Requirements

  Since all classes do not progress at the same rate, the instructor may wish to modify the above mentioned requirements or their timing as circumstances dictate. For example, the instructor may wish to change test dates and material, the number and frequency of examinations, or the number and sequence of assignments. If such modification is needed, the student will be given adequate notification.