CSCE 2214: Computer Organization
Spring 2013

Lecture: Section 1: Mon/Wed/Fri, 9:30am-10:20am, Bell 2286
Section 2: Mon/Wed/Fri, 1:30pm-2:20pm, JBHT 239

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Office Hours: Monday 10:30am-12:00pm
Wednesday 12:00pm-1:30pm

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Office Hours: Sen Ma: Mon/Fri, 2:30pm-3:30pm; Matthew Maccaro: Wed/Thu, 1:00pm-2:30pm
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Lab website: lovelace.csce.uark.edu

Description: Students will study the design and implementation of a standard Reduced Instruction Set Computer (RISC) and memory hierarchy. Detailed analysis of instruction set encodings and efficient pipelined implementation of the instruction set including data and control hazards introduced by pipelining instruction execution. The Laboratory component allows students to apply classroom theory by designing and implementing a complete working pipelined CPU, and evaluating cache organizations through a simulator.

Prerequisites: CSCE 2114: Digital Design

Topics covered:  Computer Abstractions and Technology
Arithmetic and ALU Design
ISA Design and Encodings
Logical/Control Flow Ops, Address Modes
Stacks, Calling Conventions, Arrays & Pointers
Data Path Design
Pipelining and Hazards
Introduction to Memory Hierarchies and Caches
Virtual Memory

Grading:  Grades will be assigned on a 100-point scale as follows.
A: 90-100%
B: 80-89%
C: 70-79%
D: 60-69%
F: <60%
Course tasks are weighed using the following scale.
Midterm Exams (2): 30%
Final Exam: 15%
Homework: 15%
Lab Projects: 30%
Quizzes: 10%

Homework:  Homework will be assigned roughly on a bi-weekly basis. Unless other-
wise noted, all homework is due at the beginning of class on the assigned
due date. If the university is closed due to inclement weather, a new
due date will be given by the instructor. NO late homework is accepted
unless it is due to medical issue with a doctor’s note. Both print-out and
hand-written homework will be accepted.
Homework should be prepared under the following guidelines:
► Your name and ID should appear at the top of each page
► Pages should be stapled in the upper left corner
► Problems should be presented in the order assigned
► Work on one side of the paper only
► Your work must be readable
Laboratory: You will perform 8 projects in the laboratory ranging from simply understanding how to run the CAD tools to more complex implementation and synthesis of digital circuits. Laboratory descriptions and instructions will be available on the web. There will be a series of questions contained within each laboratory that you must answer and show to the TA before you will be allowed in the lab. Reading and understanding the lab before you enter is important!

In order to get a grade in this course, you have to turn in ALL 8 lab reports.

Quiz: Quizzes are given on a weekly basis. Quizzes serve two purposes, i.e., (1) encouraging class participation, and (2) quick test of knowledge learned in the class. Each quiz lasts 5 minutes.

Policies: Class Participation – Class participation in class is important to its success. Please ask questions and participate in class discussions. When assigning final grades, borderline cases may be decided based on class participation.

Grading Errors - If the instructor and the TA have made errors in grading an exam or assignment, you have two weeks following the date the item is returned to see us about correcting the problem. After that time, your grade is set and will not be changed. We also request that you wait 24 hours after an exam is returned before coming to us with questions. Homework corrections should be taking to the TA first. Lab corrections will be handled by your lab TA.

Curving – Exams and final grade may be curved. Whether I curve and how much I curve is at my discretion. I will never curve scores on an individual item.

Email – We encourage you to use email to contact us. Email addresses are listed in the contact information above and are available on the web and class homepage. From time to time, we will send you email, so please check your mail account periodically. The CSCE Department provides an email alias, i.e., csce2214@mailman.uark.edu, which includes the entire class. We will use this alias frequently, therefore you must make certain you are checking your uark mail account for new mail. Please note:
Do not abuse this email alias. Any email sent to csce2214@mailman.uark.edu will be broadcasted to the whole class. If you just want to send to individuals, please use individuals’ email accounts.

You have to use your official uark email account, i.e., either id@email.uark.edu or id@uark.edu, to send emails through csce2214@mailman.uark.edu. Your attempt to use other email accounts through this email alias will be bounced back.

Office Hours – I will make every effort to be in my office during scheduled office hours. If there are exceptions, I will let you know as early as is possible. TAs maintain their own office hours. You are welcome and encouraged to seek help from either the instructor or the TA. If you have a conflict with your instructor’s office hours, please make an appointment or stop by my office at another time.

Cheating – Academic misconduct of any kind will result in a 0 score on the homework, lab, project, or exam. If the offense is serious, your actions will be reported to the department head and you will receive a failing grade in the course. This may also include a formal entry in your academic record. Your homework and exams must be individually prepared. Use of electronic devices, including cell phones and laptops, are prohibited in the exam. Please make sure that your cell phones are turned off and your laptop lids are closed in the exams.

Excuses – Excusing a missed exam is left to the discretion of the instructor. Illness, family emergencies, and religious observances are examples of acceptable excuses. Computer down time, over sleeping, and social events are examples of unacceptable excuses. Please try to let us know problems in advance when possible and be prepared to provide verification of your excuse.

Extensions – As a policy, we do not extend due dates of homework or lab projects. If we choose to do so, we will only announce the extension in class or through email alias. If you hear an extension has been granted and we have not announced it in class or through email alias, your information is incorrect.
Neatness – we will take points off on any assignment that is not neat and legible. Any code turned in as part of an assignment must be completely documented. If you turn code in undocumented, you will receive a 0 on that part of the assignment.