CS 270 – Introduction to Computer Architecture II
Fall 2014

Instructor M. Zubair

Meeting Time and Place Tuesday and Thursday 4:20PM - 5:35PM, Dragas 1117

Office Hours Tuesday & Thursday: 2:30PM - 4:00PM, E & C S Bldg. Room 3323

If you cannot see me during my office hours, you may also see me at other times by making an appointment. You may send me an email at zubair@cs.odu.edu (email is preferred means of communication). You may also leave messages, papers, etc. for me at the CS Department Office.

Course Description This is the second course in a two semester sequence; CS 170/270. CS 170 is a prerequisite for CS 270.
In this course you will study the architectural and operational basics of modern computers. After sucessfully completing this course, you will have a good understanding of the following concepts.

1. Design and operation of an ALU (Arithmetic/Logic Unit);
2. Implementation and control of single and multicycle processors
3. Processor pipelining
4. Technology and operation of the memory hierarchy (cache-RAM-disk) as well as virtual memory;
5. Importance of performance and the strong connection between the hardware and software

Text and Outline of Course Material

Computer Organization and Design, 4th Edition
David A. Patterson and John L. Hennessy

The same text is used in both CS 170 and CS 270. The topics covered in CS 270 are:

1. Overview of the Course, Review Chapter 1 and Appendix C
2. Processor - Chapter 4, Controller - Appendix D
3. Exploiting memory hierarchy - Chapter 5
4. Parallel computing - Chapter 7

Grading

Your grade will be based on a total of 100 points with the following distribution.

- Five homework assignments: 15 points
- Quizzes (unannounced, closed book and notes): 15 points
- Two midterms (open book and notes): 30 points
- Final examination (comprehensive, open book and notes): 40 points

The final grade will be based on the following distribution.
A 95-100, A- 90-94, B+ 97-89, B 84-86, B- 80-83, C+ 76-79, C 72-75, C- 69-71, D+ 62-68, D 61-55, F 54-0

Depending on the performance of other students as well as other considerations such as the difficulty of the examinations or assignments, the grading criteria may be modified.

Homeworks and Exams Schedule

- HW1 Due Date: September 16
  - Exercises 4.1.1 to 4.1.6; 4.6.1 to 4.6.3; 4.9.1 to 4.9.4; 4.11.1 to 4.11.4
- HW2 Due Date: October 2
- HW3 Due Date: October 23
- HW4 Due Date: November 11
- HW5 Due Date: December 2
- Midterm 1: October 9
- Midterm 2: November 13

- Final examination: December 9, 3:45PM - 6:45PM

NOTES:
Homework assignment will be posted on the website at least one week before the due date. A homework assignment will be collected in the class on the due date and graded on a range of 0 to 10. Unless you have an excellent excuse, which is given to me in writing, you will lose 1 point for each day for which the homework is late. You should keep copies of the homework, which you hand in. Solutions for the homework will be posted on the website. If you have trouble understanding what is being asked for in a homework assignment you may ask me in class, call me at my office, send me an email or by make an appointment

Quizzes

Several quizzes will be given throughout the course. The quiz will be given at the beginning of a class and it will take at most 15 minutes to complete the quiz. The schedule for these quizzes will NOT be posted. Quizzes will be based on the material covered in the previous lecture. It is advisable that after each lecture you review the covered material so that you are ready for the quiz. If you miss a quiz, you will be assigned a score of zero for that quiz. One quiz with the lowest score will be dropped, that is it will not be counted towards your final grade. There will be no makeup if you miss a quiz.

Academic Honesty and Honor Code

Everything turned in for grading in this course must be your own work. The instructor reserves the right to question a student orally or in writing and to use his evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating. Violations will be reported to the Honor Council for consideration for punitive action. All students are expected to abide by the ODU Honor Code.

Accessibility

Old Dominion University is committed to ensuring equal access to all qualified students with disabilities in accordance with the Americans with Disabilities Act. The Office of Educational Accessibility (OEA) is the campus office that works with students who have disabilities to

provide and/or arrange reasonable accommodations.

1. If you experience a disability which will impact your ability to access any aspect of my class, please present me with an accommodation letter from OEA so that we can work together to ensure that appropriate accommodations are available to you.
2. If you feel that you will experience barriers to your ability to learn and/or testing in my class but do not have an accommodation letter, please consider scheduling an appointment with OEA to determine if academic accommodations are necessary.

The Office of Educational Accessibility is located at 1021 Student Success Center and their phone number is (757)683-4655. Additional information is available at the OEA website: http://www.odu.edu/educationalaccessibility/

Grader Naga Dasari Shailaja, ndasari@cs.odu.edu

Course Sechedule (Tentative)

Please visit the site periodically to view updates.

NOTE: I am including power point slides that highlight topics covered in the lectures. I am posting them here for students convenience. These are not meant to replace my lectures and should not be viewed as lecture notes.

Lect #	Date	Topics (Handouts)	Notes
1	August 26	Introduction and Review	Chapter 1 and Appendix C
2	August 28	Review-Basic of Logic Design	Appendix C
3	September 2	Processor-Simple Datapath I	Chapter 4
4	September 5	Processor-Simple Datapath II	Chapter 4 and Appendix D HW1 Posted

5	September 9	Processor-Simple Datapath II (see Sept. 5 handout)	Chapter 4 and Appendix D Quiz1 Solution
6	September 11	Pipelining-I	Chapter 4
7	September 16	Pipelining(see Sept. 11 handout)	Chapter 4
8	September 18	Pipelining-II	Chapter 4