CISC360 - COMPUTER ARCHITECTURE - Fall 2009

Syllabus

Instructor: Dr. Michela Taufer
Course Number: CISC360-010
Course Title: Computer Architecture
Class Time: Tuesday – Thursday, 12:30 – 13:45
Building and Room: McKinly Lab Room 061

Contact Information:
Instructor: Dr. Michela Taufer
Campus Office Number: Smith Hall 406
Office Phone Number: 0071
Email Address: taufer@udel.edu

TA: Miao Tang
Email Address: miaotang@UDel.Edu

Office Hours: Dr. Taufer
Office hours: TR 10:45 AM – 11:45 AM
or by appointment (requested and scheduled via email)

TA’s office hours: MW 4:00 PM – 5:00 PM

Course Description: Topics covered in this course include: the organization and structuring of the major hardware components of computers; the mechanics of information transfer and control within a digital computer system; the fundamentals of logic design; machine instructions; addressing techniques.


Course Prerequisites: CPEG210 and CPEG211, or CPEG202, and a minimum grade of C- in CISC220 and CISC260 (or equivalent courses).

Learning Prerequisites: Students who take this class should know:
- The basic constructs of programming, e.g. data types, control structures, procedures/functions, etc.
- The following computer science concepts: operating system, files, program, memory, input/output and peripheral devices, network.

Learning Outcomes: On successful completion of this course, students will:
1. Be able to apply the following in new situations: knowledge of
   a. computer performance in terms of space and time tradeoffs
   b. instruction set architecture design and implementation
   c. representation of integer numbers
   d. datapath and control mechanisms used in processor implementations
   e. processor implementation alternatives (sequential and pipelined implementations)
   f. memory hierarchy design

2. Be able to apply knowledge of:
   a. arithmetic algorithms multiprocessor and real-time scheduling
b. cache design and memory hierarchy
3. Have been introduced to:
   a. representation of floating-point numbers
   b. virtual memory
   c. interfacing processors and peripherals

University Important Dates: Please refer to http://www.udel.edu/registrar/cal/acdcal2009.pdf for the complete academic calendar.

Course Guidelines: Please read carefully the following guidelines.

- **Asking for help**: If you need help, do not hesitate to ask for it. There are no stupid questions, and nothing you ask will negatively affect your grade. On the contrary, students that ask for help early generally manage to improve their understanding of the material and achieve better grades. Also, remember that office hours are the time dedicated to meeting with students and answering their questions. The instructor and the TA are happy to have you come and make use of this time. If you have any problem with the class (difficulties understanding the material or doing the homework assignment, excused absence, emergency that prevents you from meeting a homework deadline, need a special accommodation, etc.), please e-mail the instructor or TA, come to office hours, or simply find the instructor in the office. You can also call by phone if there is an emergency and you have no access to e-mail.

- **Projects**: Late projects will **not** be graded. If you have difficulties doing the project, ask for the help **early**. Come to office hours, or set an appointment with the instructor or TA.

- **Homework**: Late homeworks will **not** be graded. If you have difficulties doing the homework, ask for the help **early**. Come to office hours, or set an appointment with the instructor or TA.

- **Exams**: Makeup exams must be approved prior (with valid excuse) or due to an exceptional situation (with supporting documentation).

- **Reading assignments**: Reading assignments will be announced in class and posted on the course webpage. You are expected to do the reading assignment **BEFORE** the class meeting date.

- **Class participation**: Class meetings will be interactive and you are expected to participate in a meaningful way. Your meaningful participation will be based on your having completed reading assignments as well as understood material presented in class meetings.

- **Attendance**: Please make every effort to attend the class regularly. Although class slides will be available before each lecture, they can hardly replace all the clarifications and the announcements made in class. If you do miss a class, please ask class notes from one of your classmates and talk to them to see if you missed some important announcements.

- **Late policy**: When you come in late you are disturbing both the instructor and your classmates. Please make every effort to come on time. However, if you do happen to be late, come in and join the class (even if you are 30+ min late).

- **Academic honesty**: You may study for projects, homework assignments, and exams in a group or alone. However, **all the work you submit must be your own**. This means that you cannot write homework answers in a group. You cannot use the web to locate answers to any assignment. If you do not have time to complete an assignment, it is better to submit partial solutions than to get answers
from someone else. Cheating students will be prosecuted according to University guidelines. Students should get acquainted with their rights and responsibilities as explained in the Student Guide to University Policies (http://www.udel.edu/stuguide/06-07/code.html#honesty).

**Seat claim policy:** (From POLICIES AND PROCEDURES - Winter Session 2009 - http://www.udel.edu/winter/policies-0.htm) Unless excused by the faculty member, students holding a confirmed assigned seat in a class will have relinquished their seat if they have not personally appeared in class to claim the seat by the:
- 2nd class meeting for a class scheduled once a week,
- 2nd class meeting for a class scheduled two times a week,
- 3rd class meeting for a class scheduled three times a week,
- 3rd class meeting for a class scheduled five times a week.

If the student does not claim the seat, within the time period specified above, and does not drop the course, any applicable tuition will be charged, and the Instructor has the option of assigning the student a grade of "Z" (the equivalent of a failing grade) at the end of the term. It is the responsibility of the student to drop each course that they do not plan to attend, even when the student's registration is canceled for non-payment of fees. Failure to drop a course will result in "Z" grade. Therefore, **attendance will be taken for the first two class meetings.** Please make sure that you sign the attendance sheet.

**Grade Calculation:**

Your grade is based on homework, project assignments, and exams.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Projects (4) – 10% each</td>
<td>40%</td>
</tr>
<tr>
<td>Midterm exam</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

A grade on a homework, exam, or project must be contested within one week of notification. If you have any questions or want to contest your grade, please contract the instructor during office hours.

You can use the following chart to predict your grade in class. You need to get the specified number of points or more to obtain the grade from the same column. Scores in form x.y are rounded up if y>5, otherwise they are rounded down.

<table>
<thead>
<tr>
<th>Grade</th>
<th>93</th>
<th>90</th>
<th>86</th>
<th>83</th>
<th>80</th>
<th>76</th>
<th>73</th>
<th>70</th>
<th>66</th>
<th>63</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A-</td>
<td>B+</td>
<td>B</td>
<td>B-</td>
<td>C+</td>
<td>C</td>
<td>C-</td>
<td>D+</td>
<td>D</td>
<td>D-</td>
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