CSE/EEE 230 Computer Organization & Assembly Language Programming
Syllabus - Spring 2012
at BYAC 110

Instructor(s) and Office Hours

Instructor:

Mutsumi Nakamura
Office: BYENG (BrickYard ENGineering wing) 520 (5th floor)
Phone: 965-1757
E-mail: mutsumi@asu.edu
Office hours:
Monday & Wednesday: 3:45pm-4:45pm at Coor L1-60 (except January 25th, Coor L1-60 3:30pm-4:20pm)
Friday 1:00pm-2:30pm at Coor L1-38
or by appointment
(If these hours are not convenient, I will be happy to make an appointment to meet with you at other times.)
Please check the course website for the current office hours as they might change.

TA (Teaching Assistant):

To be announced. (Please check the course website)

Catalog Description

Fundamentals of computer operation, instructions set architecture, assembly language programming,
computer organization, pipelining, memory hierarchy, storage and I/O, and trends in computer design.

Course Objectives and Outcomes

- The students understand assembly language, and write assembly language programs for simple problems, including function calls.
- The students understand the data representation (2’s complement, floating point) inside the processor, and perform arithmetic operations on them.
- The students understand the working of a single-cycle, and pipelined processor, including basic schemes of hazard detection and avoidance.
- The students understand the rationale behind the memory organization, and know how caches operate.
- The students have basic understanding of storage and I/O

If time permits

- The students know trends in computer organization and design (such as multi-processors and multi-cores architectures).

Curriculum (Major topics covered)
1. Assembly Language & Programming
2. Computer Arithmetic
3. Single Cycle Implementation
4. Pipeline Implementation
5. Memory Hierarchy
6. Storage and I/O
7. Trends in computer organization (such as multi-cores and multi-processors)

Web Site

http://myasucourses.asu.edu/

To be able to login to the myASU site, you need to have an ASURITE account. Activating your ASURITE UserID is a self-service process. You can activate your account by visiting the ASURITE Activation Web site

Prerequisites

You must have passed CSE/EEE 120: Digital Design Fundamentals and CSE 100/CSE 110 to take this course. If you have not, you will automatically be dropped from this course.

Textbook

  ISBN: 978-0-12-374493-7, Morgan Kaufmann Publishers

Software

SPIM - MIPS assembly language simulator. There are also other MIPS editors in the CD that comes with the textbook.

You can download SPIM from
http://pages.cs.wisc.edu/~larus/spim.html

Grading
No late assignments/quizzes will be accepted without an official doctor's note. Cheating will result in failure in the course. Please reference the ASU academic integrity policy for more information on cheating: http://www.asu.edu/aad/manuals/usui/usi104-01.html

The grading breakdown is as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Items</th>
<th>Point Value</th>
<th>Percent of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams and Final</td>
<td>4</td>
<td>100</td>
<td>60%</td>
</tr>
<tr>
<td>Assignments</td>
<td>6-13</td>
<td>20</td>
<td>40%</td>
</tr>
<tr>
<td>Attendance</td>
<td>?</td>
<td>?</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>105%</td>
</tr>
</tbody>
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**Exams**

There will be three exams and one final. The lowest scored exam will be dropped. There will be absolutely no make-up exams. (If you happen to miss an exam, that will be the one to be dropped.) Your picture ID needs to be shown during the exams.

Exam dates
Please see the schedule of the course website.

**Assignments**

Assignments will include programming projects.

All submitted files are expected to have your information (in each file) including your name, assignment number, and ASU email address.

**No late assignment is accepted.**

**Attendance**

Attending class is important in order for you to be aware of what is going on. Often, announcements will be made or information will be discussed that is not available on the web site. Announcements in the class take precedence over printed material. Your attendance grade may be determined by sign-in sheets or in-class exercises that are given out randomly.

**Grade Breakdown**

<table>
<thead>
<tr>
<th>Final Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>&gt;= 97%</td>
</tr>
<tr>
<td>A</td>
<td>&gt;= 90% and &lt; 97%</td>
</tr>
<tr>
<td>B+</td>
<td>&gt;= 87% and &lt; 90%</td>
</tr>
<tr>
<td>B</td>
<td>&gt;= 80% and &lt; 87%</td>
</tr>
</tbody>
</table>
Grading Appeals:

Any questions, corrections, or appeals on grades of programs or tests must be done in writing within one week after it has returned to the class. State the problem and the rationale for any change in your grade in your appeal. For tests, bring the letter and test paper to the instructor. For assignments, email to the instructor.

Collaboration Policy

Unless otherwise instructed, feel free to discuss problem sets and projects with other students and exchange ideas about how to solve them. There is a thin line, however, between collaboration and plagiarizing the work of others, i.e. cheating. In order that you not cross that line, you are required to compose your own unique solution to each problem and each project. You cannot use any code written by any of your classmates.

Some obvious acts of cheating are:

- turning in work/code done by someone else
- copying work/code done by someone else
- writing one code/solution together with someone else (it should be individual work)

We have no problem failing you in this class for the semester and having the appropriate entries placed in your ASU student records. All instances of cheating will be handled by the Dean's office according to the ASU Student Academic Integrity Policy and the USI 104-01: Student Code of Conduct and Student Disciplinary Procedures.

I reserve the right to revise this syllabus as necessary.