Course Description

CMPSC 210
Introduction to Computer Organization
Fall 2006
Bob Roos

Home page: http://cs.allegheny.edu/~rroos/cs210f2006/

Course Description and Syllabus

Office Hours: My office is in Alden 105, extension 2883. My hours are Mon. and Fri. 1:30 – 2:30 p.m., Tues. and Thurs. 2 – 4:30 p.m., and by appointment. The best way to schedule an appointment is to send me an e-mail.


Final Exam: Exam code C (Sat., Dec. 16, 7 p.m.).

Grading: (All percentages are approximate!)

  Attendance and participation (see below): approx. 15%
  Lab assignments: approx. 45%
  Midterm exams (two): approx. 10% apiece
  Final exam: approx. 10%
  Project: approx. 10%

In addition I reserve the right to give occasional surprise quizzes!

Policies:

E-mail. I will sometimes need to send out announcements to the class about things such as clarifications to assignments, changes in the class schedule, or other matters. I will use your Allegheny College e-mail account to do this. It is your responsibility to check your e-mail at least once a day, and to make certain that your e-mail is working correctly (able to send and receive messages).

Attendance and Participation. A portion of your participation grade will consist of attendance at a certain number of department seminars and other special events throughout the semester. Details will be given once we have a schedule laid out. It is expected that students in this course will attend every class and formally scheduled laboratory session. Attendance will be taken periodically.

Whenever possible, advise me of legitimately excusable absences (such as illness, death in the family, or certain college sponsored activities) prior to the class you will be missing. If you know in advance of specific conflicts due to athletic events or other reasons, please provide me with a list of dates and reasons as soon as possible so I can avoid problems in scheduling.

Departmental Late Policy. The following policy was adopted by the entire computer science department, effective beginning in fall of 2004:
All assignments will have a given due date. The assignment is to be turned in at the beginning of the class on that due date. Late assignments will be accepted for up to one week past the assigned due date with a 10% penalty. All late assignments must be submitted at the beginning of the class that is scheduled one week after the given due date.

**Collaboration and the Honor Code.** No collaboration on homeworks, quizzes, or exams is permitted unless specifically provided for as part of the assignment. The Department of Computer Science interprets the Honor Code Policy as follows:

It is recognized that an important part of the learning process in any course, and particularly in computer science, derives from thoughtful discussions with teachers, student assistants, and fellow students. Such dialogue is encouraged. However, it is necessary to distinguish carefully between the student who discusses the principles underlying a problem with others, and the student who produces assignments that are merely variations on someone else’s work. It will therefore be understood that all assignments submitted to faculty of the Department of Computer Science are to be the original work of the student submitting the assignment, and should be signed in accordance with the provisions of the Honor Code. Appropriate action will be taken when assignments give evidence that they were derived from the work of others. You are encouraged to periodically review the specifics of the Honor Code as stated in the College Catalogue and elsewhere.

**Goals**

A lot is packed into this course. The title of the textbook suggests that we’ll be studying the inner workings of the computer (in other words, “how computers are organized” — this is not a course about “computer organizations” such as the ACM or the IEEE Computer Society!). There are two approaches to this — a high-level approach that examines what the different components of the computer do and how they work together, and a low-level approach that examines the actual electronics of the machine — the chips, buses, electrical specifications, and so on. We’ll take more of the functional approach in this class, but if you would like to contribute a guest lecture on a more hardware-related topic, go for it!

We’ll see how numbers and other types of data are represented internally, how memory is organized and used, and we’ll examine the basics of architecture, digital logic, and machine code. Along the way we’ll pick up a few more Unix commands (man, make, strings, od, etc.), learn a little bit of shell programming, and become proficient in C and in MIPS assembly language. The course will end with a programming project in C (topic to be determined). If time permits, we’ll also study some 80x86 assembly language.

**Readings — Coming Soon!**

This is the first time I’ve taught this course, so I am still working on a schedule of readings, but my overall goal is to try to follow the “Software Focus” column of readings on page xiii of the preface of your Patterson and Hennessy textbook (the readings marked “Read carefully”).