INSTRUCTOR

Greg Boyd   email: gboyd@ccsf.edu   http://fog.ccsf.edu/~gboyd   BATL 462

OFFICE HOURS AND MAILING LIST

Mon, Weds 12:30-1:00, Mon, Tues 5:30-6:00, and Weds 5:00-6:00 *in BATL 462* or by appointment
Google Group: https://groups.google.com/d/forum/ccsf-cs270

CLASS SECTION

CRN 31854   Section 501   6:10-10:00pm   Mon   BATL 413

TEXT BOOKS

required: Patterson and Hennessy: *Computer Organization and Design: The Hardware/Software Interface, 5th Edition*
Morgan Kaufmann Publishers. There is a copy on 2-hour reserve in the library.

COURSE DESCRIPTION

This is a course in computer architecture. Machine structures, parts of a CPU, number formats, assembly language programming, program translation steps, and logic design are some of the many topics in this course. A sample assembly language is used to illustrate and practice machine operations and investigate how higher level languages map to machine structures. **This course is a significant commitment of time. You should plan to spend an average of 2-4 hours of study time for every hour spent in class for the duration of this course.**

WHO SHOULD TAKE THIS COURSE

This course is intended for computer science majors. Its prerequisite is intermediate programming at the level of CS110B - although the only higher-level language we will be using will be C. We will also be using Linux for labs, and for some parts of assignments. You must be able to run programs, copy files, and create text files on the command-line on our Linux systems. If you have not had experience with Linux you will have to get some practice early in the semester. The assembly language uses a Java-based simulator that will be running on Linux, but can be run on the Mac and, probably, Windows as well.

GRADES

Grades will be awarded based on the following *approximate* breakdown:
   Assignments   160 pts   Quizzes + Online Q   80+90 pts   Final   80 pts   Labs   25 pts   Exercises   50 pts
Final grades will be awarded based on the percentage of the total of ~485 points received according to:
                A 90%   B 80%   C 70%   D 60%
I will pass around a list from time to time showing the grades I have recorded. Although I take every precaution to ensure grades are recorded correctly, you should keep your graded papers until you are satisfied they have been recorded correctly. You should also keep any computer files of assignments until the homework is returned to you. I bring graded papers to class *once* after grading. If you are not present you must come to office hours to get them.

ASSIGNMENTS

There will be 4-6 graded assignments over the course of the semester. These assignments will be a combination of exercises from the book, thought questions based on class material, and programming assignments. Assignments must be handed in in-class *at the beginning of class* on the due date. **Late or redone assignments are graded at the end of the semester for a maximum of 50% credit.** Your grade on the assignment may be based on a predetermined unannounced portion of it. Specific requirements are covered in the handout *AssignmentGuidelines.* Many of the assignments will use a simulator for the sample instruction set - MIPS. The simulator, which is written in Java, should run on any system with a compatible Java version. It can be obtained from the Syllabus page or from *http://courses.missouristate.edu/KenVollmar/MARS/download.htm* We will be using the simulator on our linux workstations. Portions of other assignments will use the *hills* linux system. You are free to develop your programs wherever you like, but your grade will depend on how your program operates in the CCSF environment.
Many assignments in this course require technical writing. Although you are not graded on such things as spelling or grammar, you are graded on the clarity of your documentation. Lack of proficiency in writing English will not be considered an excuse for writing that is unclear or incorrect. Come see me if you need help.

TESTS

There will be two quizzes (midterms) during the semester, focusing on recent material. *No electronic devices are allowed on tests and no mechanical pencils should be used.* You are allowed one test absence - the missing test grade is made up by doubling the weight of the following quiz score (or increasing the weight of the final exam, in the case of the last quiz) This is meant to cover illnesses and emergencies. Alternately, if you contact me *prior* to the quiz (or immediately after, in the case of illness), I may schedule a makeup quiz. *Makeup tests are given solely at my discretion and only if requested immediately.* There will also be a **required** cumulative final exam.

There are also weekly online reading quizzes on the week's reading. These reading quizzes must be completed *before class* on the day the reading is due. They are available using the course shell from insight.ccsf.edu.

GROUP WORK

If you wish, you may work on the assignments in a group of up to three students. In this case, hand in a single copy of the assignment with all contributors' names, day and time of class on the front. All contributors will receive the same grade. If I receive two assignments which are very similar I will not grade either of them. If you want to work together, hand in a single copy as described above.

EXERCISE SETS AND LABS

A number of required exercise sets will be assigned during the semester. Although most of the exercises are not handed in, they are all important. **All exercises are assigned!** The exercise sets are the primary sources of questions for tests, and portions of them are required by assignments. Most exercise sets will have a part that is transferred for credit, as detailed in the exercises themselves. Specifics will be discussed in-class.

Labs are done in-class. During the lab either your name will be checked off after sufficient completion of the lab or you will have to transfer a file with your work to get the lab credit. There is one more lab than counts in your grade, allowing one absence. There is one more exercise set than counts in your grade. If you do more than the required number, additional exercise sets are extra credit. Otherwise, there are no make-up labs or exercise sets.

EXTRA CREDIT

Extra credit is given for posting to the Google Group. 1/2 point of extra credit is given for each significant posting to the group, up to a maximum of 5% of the total available points over the semester. Exceptional work on assignments can also earn a few points of extra credit.

COMPUTER ACCOUNTS

By being enrolled in this class, you will have an account on our *hills* linux system and our linux subnet. These accounts will be created a few days after you have completed your enrollment - the hills account takes 48 hours and the linux account up to on day after the hills account. If you are adding, it is important that you complete your add immediately so that you can hand in your assignments on time.

If you have had a *hills* account last semester, your account and password will remain the same. If you are getting a new hills account, your account name will be the same as your CCSF gmail account. Your initial password is formed from your birth date - combining the first three letters of the month (*lowercase*) with the two-digit day and the two-digit year followed by a period and the first two characters of your login; e.g., if your gmail account is scharo11@mail.ccsf.edu, and your birthday is *Apr 14 1986* your hills login would be `scharo11` and your initial password would be `apr1486.sc` *You should immediately change your initial password*.

Linux accounts are recreated each semester. The account name is the same as your *hills* account, and the initial password follows the pattern above. You should be forced to change your password at the first login. *The hills and Linux accounts are separate, with separate passwords.*

You also will have a Windows account in the ACRC, but its use for this class is not required.

Class data files are in the public work area for the class on hills and linux at `/pub/cs/gboyd/cs270`

ACCESS TO HILLS

You can access *hills* either from a computer in the ACRC in Batmale Hall or remotely using ssh. From the ACRC, login to a linux box, then open a terminal and ssh to *hills.ccsf.edu*.

If you access *hills* remotely, you are responsible for the particulars of your remote connection. You are also responsible for figuring out how to print your assignment. You are encouraged to use a secure connection such as ssh. *It is your responsibility to get these issues worked out in order to complete your assignments on time.*

ADDS DROPS AND ATTENDANCE

You must be present and sign the roll on the first day of class or you will be dropped from this course. I also **may drop you from the class if you fail to attend two labs in succession**. You should not, however, rely on me to drop you from the course. ***Dropping is your responsibility.***
You are responsible for everything that happens in class, whether you are present or not.

TAKING NOTES

As with a standard college course, you are expected to take notes in class. Although there are online notes for part of the class, I do not give out notes on lectures, nor will I allow you access to my notes. If you are not in class it is your responsibility to get the information from a classmate.

FINAL EXAM

You must take the final exam. Failure to do so will result in an F for the course.

> **I reserve the right to change any of these policies at any time during the semester. Any changes will be announced in class or on the class Google Group.**