CMPE 012 Syllabus - Winter 2019

Computer Systems and Assembly Language

Overview

This class exposes students to an overview of how computers work. We will discuss the building blocks of computer hardware, how data is stored in memory, and the MIPS instruction set.

Instructor

Rebecca J. Rashkin rrashkin+ce12@ucsc.edu

Personal website www.rebeccajr.com

Office Hours E2-223; Tue/Thu/Fri 1:00 PM - 2:30 PM

Salutations! I am thrilled to be teaching CMPE 012 this quarter. Please address me as *Rebecca, Ms. Rashkin, Miss Rashkin, Miss Rebecca,* or *Master R.*

Teaching Assistants

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General

Dates: January 8, 2019 - March 14, 2019

Lecture: Classroom Unit 2, Tue/Thu 9:50 AM - 11:25 AM

Labs: Ming Ong Computer Lab 103 (Merrill College)

Open lab hours: TBD

Websites: https://canvas.ucsc.edu (must have a UCSC login ID)
https://piazza.com/ucsc/winter2019/cmpe012/home
https://webcast.ucsc.edu (User: cmpe-12-1, password: 19wi_cmpe012)

Textbooks

Required

Charles W. Kann, Introduction to MIPS Assembly Language Programming, Gettysburg College Open Educational Resources, 2015. http://cupola.gettysburg.edu/oer/2/ (available online for free)

Optional

Larry Gonick, The Cartoon Guide to Computer Science, Harper & Row Publishers, Inc., ISBN 0-06-460417-9, 1983.

https://www.amazon.com/gp/product/0064604179/ref=oh_aui_search_detailpage?ie=UTF8&psc

Yale N. Patt and Sanjay J. Patel, Introduction to Computing Systems: From Bits and Gates to C and Beyond (Reader), McGraw-Hill Education, First Edition, ISBN 978-1307117530, 2017.

David A. Patterson and John L. Hennessy, Computer Organization and Design MIPS Edition: The Hardware/Software Interface, Fifth Edition, ISBN 978-0124077263, 2013.

Prerequisites

Prior programming experience is highly recommended (e.g. CMPE 13, CMPE 5J/P) to succeed in this class. Specifically, it is imperative to understand functions, conditional statements, and loops. If you need a refresher on coding, check out:

http://codingbat.com/

Key Dates

Registrar link	https://registrar.ucsc.edu/calendar/key-dates/index.html https://registrar.ucsc.edu/calendar/2018-19calendar.pdf
Final Exam Schedule	https://registrar.ucsc.edu/soc/final-examinations.html#c

Class

Holidays	Mon Jan 21, 2019 Mon Feb 18, 2019
Midterm	Tue Feb 12, 2019 (normal class time, date subject to change)
Final	Mon Mar 18, 2019, 8:00 AM - 11:00 AM 😩

Administrative

Add/drop	Mon Jan 28, 2019
Change grade option	Mon Jan 28, 2019
Withdraw deadline	Tue Feb 19, 2019

Contact

With the size of this class, I cannot guarantee that I will respond to emails or online messages of any type. To resolve any administrative issues, you must schedule

an appointment to meet during my office hours. To schedule a meeting, please select an appointment time here:

https://calendar.google.com/calendar/selfsched?sstoken=UUVCd3ZmMjl5N1pZfGRlZmF1bHR8ZDk0MTkzNzkxZDE3M2VkZGM0N2FmYTE5YmY1NDY4ODA

Replace the event title "cruzid (first name last name)" with YOUR CruzID and name. Replace the description text with a summary of the purpose of the meeting.

Attendance

Lab

There will be weekly attendance quizzes in lab section. You must be present in your **assigned** lab in order to receive credit. These attendance quizzes will contribute to your class participation grade.

You may attend any lab section. However, if the computer lab is full, you may be asked to leave if you are not enrolled in that section.

Completing an attendance quiz for any student other than yourself counts as academic dishonesty.

Lecture

Though attendance will not be taken, it is mandatory that you attend lecture or watch the webcast.

Evaluation

40% Labs (must average greater than 55% to pass)
20% Participation
20% Midterm exam (both exams must average greater than 55% to pass)
20% Final exam

Labs

The 40% for labs will be distributed as follows:

 0.8% Lab 0
 4.0% Lab 1
 7.2% Lab 2
 8.0% Lab 3
10.0% Lab 4
10.0% Lab 5

Participation

There will be weekly attendance quizzes in lab. **You must be present in your assigned lab** in order to receive credit. These quizzes may be administered on either lab day.

In addition, there will be weekly quizzes administered on Canvas. You are permitted to work in a group on these problems.

You have the opportunity to replace up to four participation grades with extra credit assignments:

Extra Credit Option 1: Computer History Museum Visit

Attend the computer history museum (http://www.computerhistory.org/). Choose one or a group of similar artifacts to write 250 words about.

Extra Credit Option 2: 500 Word Essay, Reflection on Malleable Intelligence

Read the chapter "Intelligence as a Malleable Construct" from the Handbook of Intelligence and write a 500+ word essay. This assignment will have 3 parts: summary, reflection, and recommendations.

Extra Credit Option 3: Extracurricular Participation

Join the Amateur Radio Club and obtain your Technician license. Show proof of attending 3 meetings or club events (club meetings, nets, antenna building parties).

Extra Credit Option 4: Skill Progression

Learn a new skill, or progress in a skill you already have. Show documentation of your skill progression and journal about it four times throughout the quarter. Examples: juggling, drawing, singing, dancing, playing a musical instrument, movement progression (hand balancing, acrobatics)

Passing Requirements

A typical grading scale will be used in assigning grades. Plus and minus grades will not be issued.

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[90, 100+) A
[80, 90)   B
[70, 80)   C
[60, 70)   D
( 0, 60)   F
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You must earn at least a **55%** average on the **exams** to pass the class. Likewise, your average **lab scores** must be no less than **55%** to pass the class. There is no minimum grade requirement for the quizzes.

You will receive an F in this course if you earn a 0 on any lab assignment. You can receive a 0 if the lab assignment was not submitted, files are missing, files are in the wrong format (including having the wrong file extension or naming convention), you put in little to no effort, or are caught cheating. Only completing the README for a lab assignment counts as little to no effort.

Regrades

Re-grading of lab assignments will only be done if we have made a clerical error (i.e., we added points wrong) or we somehow missed your work. Note that **this does not include you forgetting to submit** or if you made a mistake in the submission process.

Re-grade requests must be submitted as a private message to all instructors on Piazza within **one week** of when grades are released.

Note

You will receive the **same grade** for CMPE 12 and CMPE 12L. Assume that CMPE 12 and 12L are one 7-unit course. You must take both the lab and lecture to get credit for this course.

Late Submission

Grace Period

Students will have 72 hours total of "grace period" that can be used on lab assignments to allow for unexpected life events that interfere with turning in assignments by the deadline. The grace period hours are consumed in 1 hour increments that is kept track on Canvas.

We do NOT need to know why you are using your grace period. If there is some extenuating circumstance that is not covered by the grace period, we need to be informed of this ASAP (not after the fact).

If, at the end of the quarter you don't use any late hours, you will get a 1% added to your final grade.

Piazza

Piazza is the official class online forum for delivering announcements and connecting with other students. It is your responsibility to check the forum regularly for updates on assignments and logistics.

The website for our class is: https://piazza.com/ucsc/winter2019/cmpe012/home

Guidelines

1. If you have a question, help yourself first. Look at the notes, book, other Piazza posts using the search feature.
2. If you can't figure out the answer on your own, post a question with a useful subject and describe your problem.
3. Piazza is a professional forum so be polite and respectful. Your post is never anonymous to instructors. Inappropriate or rude posts will be removed.

Software

The following software is used for the lab assignments.

Git

https://git-scm.com

Multimedia Logic

http://www.softronix.com/logic.html

MARS: MIPS Assembler and Runtime Simulator

https://courses.missouristate.edu/KenVollmar/MARS/

Incompletes

Students requesting an incomplete must be in good standing (have a passing grade up until that point). An incomplete will only be granted as a result of a medical or family emergency. You must request an incomplete before the last day of instruction (August 28, 2018).

Note

If you ask for an incomplete after not turning in labs or homework assignments, you are not in good standing.

Disability Accommodations

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please email me a soft copy of your Accommodation Authorization Letter from the Disability Resource Center (DRC) with the subject:

DRC Accommodation Letter - cruzid

In addition, please set up a meeting with me in the first two weeks of the quarter so we can discuss ways to ensure your full participation in the course. Testing accommodations can only be guaranteed for students who submit their Accommodation Authorization Letter within the first two weeks of class.

I encourage all students who may benefit to contact DRC services:

Disabled Resource Center
146 Hahn Student Services
(831) 459-2089 (voice)
(831) 459-4806 (TDD/TTY)
drc@ucsc.edu

Academic Integrity

Academic honesty is a requirement for the course. All assignments must be your own independent work.

What is cheating? It is presenting work that is not yours as your own. You can - and are encouraged to - discuss and strategize with your colleagues on the material and labs, but your work should be your own. Copying is NEVER acceptable.

On the labs, cheating is sharing code unless explicitly told that it is permitted. If a student is caught cheating in either the class or the lab, this will result in an immediate failure in the class and the lab. It will be reported to your college and your department. DO NOT CHEAT; it is not worth it.

Collaboration vs Plagiarism

Collaboration is a key aspect of education, and of professional engineering. As such, we want to encourage you to help each other understand the labs and the material. However, this is NOT license to copy others' work. Credit for collaboration should be explicitly noted in each assignment's README. Failure to give credit on collaboration is considered a form of cheating and will be dealt with accordingly.

Unfortunately, in most quarters, we find evidence of plagiarism in a significant fraction of the CMPE 12 student body. In many instances, students are (or claim to be) unaware that what they are doing is plagiarism. To clarify, here are examples of acceptable collaboration:

- Discussing the labs, or lab requirements with peers.
- Planning, diagramming, or writing pseudocode for a lab with peers.
- Helping a peer understand an error or assist in debugging.

In the above cases, this collaboration must be described in the README that you submit.

Here are examples of unacceptable collaboration (ie, cheating):

- Reading someone else's code for inspiration before you start your own code.
- Reading someone else's code as you write your own.
- Emailing your code to a classmate.
- Checking out your repository on a classmate's computer.
- Checking with a friend every few minutes to be sure you've written similar things.
- Using more than a line or two from Stack Overflow or a similar online resource.
- Using code from a friend or online resource, but altering it slightly.
- Reading someone else's code to find a solution to a flaw in your own code.
- Typing out code that friend dictates to you as you type.

A good practice for collaborating while avoiding cheating is to use a whiteboard or a piece of paper to communicate ideas, and look at each other's monitors as little as possible.

Title IX

The university cherishes the free and open exchange of ideas and enlargement of knowledge. Maintaining this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors.

The university has therefore instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. Information about the Title IX Office, the online reporting link, applicable campus resources, reporting responsibilities, the UC Policy on Sexual Violence and Sexual Harassment and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at:

http://titleix.ucsc.edu

The Title IX/Sexual Harassment Office is located at 105 Kerr Hall. In addition to the online reporting option, you can contact the Title IX Office by calling 831-459-2462.

Reading List, Tentative Schedule

https://docs.google.com/spreadsheets/d/1YKgcJE320AVnmGDFpvx-2CWjLt2U-x1uIc4uq8Hwvm8/edit?usp=sharing