San José State University
Computer Science Department
CS47, Intro to Computer Systems, Section 1, Spring 2020

Course and Contact Information

Instructor: Fain (Frank) Butt

Office Location: DH282 / SCI311

Telephone: (408) 924-5060

Email: Frank.Butt@sjsu.edu

Office Hours: MW 7:15 PM – 8:30 PM (by appointment)

Class Days/Time: MW 4:30 PM - 5:45 PM

Classroom: SCI311

Prerequisites: CS46B

Course Format

The grader will be using GCC compiler to grade your homework and programming assignment. Therefore I recommend that you use the same compiler to do your work. Or at least make sure it compiles and runs before handing them in. You are expected to spend 10-15 hours a week on homework or programming assignment.

Faculty Web Page and MYSJSU Messaging

Course syllabus can be located from my home page at -> http://www.cs.sjsu.edu/~fbutt/ The rest of the course material will be published via Canvas. You are responsible for regularly checking with the messaging system through MySJSU and Canvas to receive schedules and updates.

Course Description

The course consists of an introduction to computer hardware organization and the hardware/software interface. We will cover instruction sets, assembly language, assemblers, linkers, loaders, data representation/manipulation, and interrupts. We will use a set of programming assignments to reinforce concepts of data representation, addressing modes, memory organization, runtime stacks, and interfacing with high-level languages.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. SLO 1 – Understand the syntax and language elements for the Intel (x86) assembly language
2. SLO 2 – Understand how the computer system (e.g. CPU) executes a compiled program.
3. SLO 3 – Distinguish how static and dynamic linking works.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. CLO 1 – Ability to convert between binary/hex/decimal integers and text data representation using different character encoding scheme.
2. CLO 2 – Able to implement an assembly language subroutine to be used within a C/C++ program.

Required Texts/Readings

Textbook

Computer Systems: A Programmer's Perspective, 3rd Ed, O'Hallaron (ISBN-13: 978-0134092669)

Other Readings [Optional]

Other equipment / material requirements (include if applicable)

None

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

There will be one exam, several programming assignments, several homework and quizzes. All the exams and quizzes will be close book and open notes. There will be no laptops, calculators, or any personal digital devices allowed. I strongly suggest that you attend each class and take good notes during the semester. There will be ***NO*** make-up exams and quizzes.

All the homework, programming assignments, and related documentations must be handed in electronically. Programs that are handed in after the due date will not be accepted. Additional information about each project will be given in separate handouts. For your programming assignments, I will compile and grade your programs using the GCC compiler. Your program needs to be able to compile and execute before you turned it in.

NOTE that University policy F69-24 at http://www.sjsu.edu/senate/docs/F69-24.pdf states that "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Grading Policy

Final Exam	400 points	40%
Programs	300 points	30%
HW & Quizzes	300 points	30%
Total	1000 points	100%

The final "letter" grade will be determined from a curve at the end of the semester.

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol

There will be no lecture notes given out. It is your best interests to attend class and take good notes. You must turn off any cell phone ringer at the beginning of each class!

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/"

CS47, Intro to Computer Systems, Section 1, Spring 2020, Course Schedule (subject to change)

Event	Date	Class Time	Topics, Readings, Assignments, Deadlines
Week 1	01/27/2020	Sec 1: 4:30 – 5:45PM	Introduction and Overview; Chapter 1, 2
Week 2	02/03/2020	“	Chapter 2
Week 3	02/10/2020	“	Chapter 2, 3
Week 4	02/17/2020	“	Chapter 3
Week 5	02/24/2020	“	Chapter 4
Week 6	03/02/2020	“	Chapter 5
Week 7	03/09/2020	“	Chapter 5
Week 8	03/16/2020	“	Chapter 6
Week 9	03/23/2020	“	Chapter 6, 7
Week 10	03/30/2020	“	Spring Break;
Week 11	04/06/2020	“	Chapter 7
Week 12	04/13/2020	“	Chapter 8
Week 13	04/20/2020	“	Chapter 8, 9
Week 14	04/27/2020	“	Chapter 9
Week 15	05/04/2020	“	Chapter 10
Last Day	05/11/2020	“	Exam Review
Final Exam	05/19/2020	Sec 1: Tue: 2:45-5:00 PM	Covers book content and programming assignments;