

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

**Course and Contact Information**

<b>Instructor:</b>	Fain (Frank) Butt
<b>Office Location:</b>	DH282 / Online
<b>Telephone:</b>	(408) 924-5060
<b>Email:</b>	Frank.Butt@sjsu.edu
<b>Office Hours:</b>	MW 7:15 PM – 8:30 PM (by appointment)
<b>Class Days/Time:</b>	MW 4:30 PM - 5:45 PM
<b>Classroom:</b>	Online
<b>Prerequisites:</b>	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 and 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](http://www.sjsu.edu/senate/docs/S12-3.pdf) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

There will be one exam, several programming assignments, homework and quizzes. All the exams and quizzes will be conducted via the “Lockdown” browser and they are close book but open notes. There will be no laptops, calculators, or any personal digital devices allowed unless you are instructed to do so. 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](http://www.sjsu.edu/senate/docs/F69-24.pdf) 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](http://www.sjsu.edu/senate/docs/F13-1.pdf) at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details.

### **Classroom Protocol**

There will be no specific lecture notes given out. We will use the presentation slides from the book. 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](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>"

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

<b>Event</b>	<b>Date</b>	<b>Class Time</b>	<b>Topics, Readings, Assignments, Deadlines</b>
First Day	08/19/2020	Sec 1: 4:30 – 5:45PM	Introduction and Overview; Chapter 1
Week 1	08/24/2020	“	Chapter 2
Week 2	08/31/2020	“	Chapter 2,3
Week 3	09/07/2020	“	Labor day – No class on 9/7; Chapter 3
Week 4	09/14/2020	“	Chapter 3
Week 5	09/21/2020	“	Chapter 3; Quiz #1
Week 6	09/28/2020	“	Chapter 5
Week 7	10/05/2020	“	Chapter 5
Week 8	10/12/2020	“	Chapter 6
Week 9	10/19/2020	“	Chapter 6,7
Week 10	10/26/2020	“	Chapter 7
Week 11	11/02/2020	“	Chapter 7,8
Week 12	11/09/2020	“	Quiz #2; Veterans Day – No class on 11/11
Week 13	11/16/2020	“	Chapter 8
Week 14	11/23/2020	“	Chapter 9; Thanksgiving - No class on 11/25
Week 15	11/30/2020	“	Chapter 9,10
Last Day	12/07/2020	“	Exam Review
Final Exam	12/09/2020	Sec 1: Wed: 2:45-5:00 PM	Covers book content and programming assignments;