

San José State University
College of Science
Department of Compute Science
CS 47-01 Introduction to Computer Systems
Spring 2022

Instructor(s):	Dr. Chung-Wen (Albert) Tsao
Email:	chung-wen.tsao@sjsu.edu (Once the class starts, please use Canvas Inbox)
Class Days/Time:	M/W 10:30-11:45
Classroom:	Science Building 164 URL to Live Lectures on ZOOM at 10:30-11:45am M/W (The first two weeks) https://sjsu.zoom.us/j/85277446120 Online at https://sjsu.zoom.us/j/89574810154
Office Hours:	<ul style="list-style-type: none">• URL to Office Hours on ZOOM: 2:45 - 3:45pm T/TR https://sjsu.zoom.us/j/83077541390?pwd=a2NMKytaU00xaS9CZ0VEemFyMFRwUT09• By Appointments
Prerequisites:	CS 42 / MATH 42 or CS 42X / MATH 42X, and CS 46B (with a grade of "C-" or better).
Class Meeting Dates:	Jan 26, 2022- May 16, 2022
Units	3 units

Class Format

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas](http://sjsu.instructure.com) at <http://sjsu.instructure.com>. You are responsible for regularly checking the most updated messages and uploaded materials there.

Course Description

Instruction sets, assembly language and assemblers, linkers and loaders, data representation and manipulation, interrupts, pointers, function calls, argument passing, and basic gate-level digital logic design.

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on MySJSU Canvas. You are responsible for regularly checking with the email system through [MySJSU](http://my.sjsu.edu) at <http://my.sjsu.edu> to learn of any updates.

Course Learning Outcomes (CLO)

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

1. Explain the architectural components of a computer system: CPU (registers, ALU), memory, buses
2. Convert between decimal, binary, and hexadecimal notations.
3. Use with two's complement integers, IEEE 754 floating-point numbers, and character encodings

4. Write assembly programs that use load/store, arithmetic, logic, branches, call/return and push/pop instructions.
5. Simulate the gate-level operations of basic ALU functions
6. Describe how variable access, arithmetic, function calls, and pointers are translated from a High Level Language to assembly.
7. Write programs that interface between a High Level Language and assembly.
8. Write programs that contain system calls in a High Level Language and assembly.

Required Texts/Readings Textbook

COMPUTER ORGANIZATION and DESIGN | Edition: 5 Author: DAVID A. PATTERSON
ISBN:9780124077263
Publication Date:10/10/2013
Publisher:ELSEVIER

Other Readings

LOGIC & COMPUTER DESIGN FUNDAMENTALS
Author: MANO & KIME
ISBN: 9780131989269
Publication Date: 06/15/2007
Publisher: PEARSON

LockDown Browser + Webcam Requirement:

This course requires the use of LockDown Browser and a webcam for online quizzes/exams. The webcam can be the type that's built into your computer or one that plugs in with a USB cable. Watch this brief video to get a basic understanding of LockDown browser and the webcam feature. Download and install LockDown browser from [here](#).

Assignments:

- No late assignments will be accepted without advanced arrangement with the instructor.
- All homework must clearly indicate each student's name, course, and assignment number.
- Students are allowed (and actively encouraged) to form study groups.
- You may discuss solution but you **MUST** write up the answers independently.
- If you use a website or reference book, you must cite it.
- If there are multiple similar submissions not exhibiting independent thought, or with words obviously lifted from a book or website, **ALL** such submissions will receive scores of 0.

Pop Quizzes:

We will have pop quizzes to check your understanding of the current lecture material. The quizzes are usually explained in class and due on the end of the lecture day. The purpose of pop quizzes is to encourage you to study and review the concepts and materials we discussed in the lecture.

Exams:

- There will be two midterm examinations, and a cumulative final exam.
- Exams typically include an in-class closed-book quiz and a take-home open-book written test.
- Exams may **NOT** be taken before or after the scheduled time for any reason. All the students need to attend synchronously.
- No make-up exams for anyone except for the medical emergency with the official medical proof.
- Use of electronic devices during exams is **NOT** allowed unless stated otherwise.
- All exams will remain with the instructor

Grading

- Pop quizzes 10%
- HW+ Lab 40%
- Midterm 1 15%
- Midterm 2 15%
- Final Exam 20%

The grading scale is as follows:

Final grades will not be adjusted in any way - so an 89.99% is still a B+.

No incomplete grades will be given.

<u>Grading System:</u>	Score Range	Grade	GPA
	≥ 97	A+	4.0
	≥93	A	4.0
	≥90	A-	3.7
	≥87	B+	3.3
	≥83	B	3.0
	≥80	B-	2.7
	≥77	C+	2.3
	≥73	C	2.0
	≥70	C-	1.7
	≥67	D+	1.3
	≥63	D	1.0
	≥60	D-	0.7
	Below 60	F	0.0

Classroom Protocol and Other Notes

- Students may be dropped from the class by the instructor for either one of the following reasons:
 - absence for 1st day of class without informing you before 2nd day of class
 - lack of prerequisites.
- Do not ask for special treatment. The rules for this course apply to everyone equally.
- Cheating will not be tolerable; a ZERO will be given to any cheated assignment/exams, and it will be reported to the Department and the University.
- Do NOT share/post online any course materials, PPT slides, or homework solutions.
- Use of electronic devices during exams is NOT allowed unless stated otherwise.
- You are required to check Canvas for reading/assignments.
- The information on this syllabus is subject to change; changes, if any, will be clearly explained in class, and it is your responsibility to become aware of them.
- Once the class starts, use Canvas Inbox to email me for a faster response. I check the Canvas Inbox emails much more often than my school emails.

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/>

CoS COVID-19 Safety Training

All students registered for a College of Science (CoS) class with an in-person component must view the [CoS COVID-19 Training](#) slides and the [SJSU Phased Adapt Plan](#) website and acknowledge reading them according to their instructor's directions. By working together to follow these county and SJSU safety practices, we can keep our college safer. Students who do not follow COVID-19 Safety practice(s) outlined in the training, the SJSU Phased Adapt Plan, or instructions from their instructors, TAs or CoS Safety Staff may be dismissed from CoS buildings, facilities or field sites. Please review this training as needed throughout the semester, as updates will be implemented as changes occur (and posted to the same links).

Course Schedule (This schedule is subject to change. Any change will be communicated via Canvas with fair notice.)

Week	Date	Topics
1	26-Jan	Introduction to Computer
2	31-Jan	Computer Organization
	02-Feb	Number Representation
3	7-Feb	Programming a Computer
	9-Feb	Assembler, Linker, Loader
4	14-Feb	SPIM IDE & MIPS Simulator
	16- Feb	Memory Usage I
5	21- Feb	Memory Usage II
	23- Feb	Memory Usage III
6	28- Feb	Addressing Modes, Directives
	02-Mar	Arithmetic and Logic Instructions
7	07- Mar	Review
	08- Mar	Midterm Exam I
8	14- Mar	Comparison, Branch & Jump
	16- Mar	Procedure
9	21- Mar	Procedure Implementation
	23- Mar	Floating Point Number Representation ,
10	28- Mar	Spring Recess
	30- Mar	Spring Recess
11	4-Apr	Floating Point Number Representation ,
	6- Apr	Floating Point Number Representation ,
12	11- Apr	Boolean Algebra
	31- Apr	Logic Gates
13	18- Apr	Addition and Subtraction Logic
	20- Apr	Review
14	25- Apr	Midterm Exam II
	27- Apr	Multiplication Logic
15	2-May	Division Logic
	4- May	Boolean logic
16	9- May	Boolean algebra

	11- May	Logic Circuit Design
17	16- May	Logic Design Components
	Final	Thursday, May 19 (9:45 AM-12:00 PM)

[SJSU ACADEMIC YEAR CALENDAR 2021/22*](#)