

San José State University  
College of Science  
Department of Compute Science  
**CS 47-S2 Introduction to Computer Systems**  
Fall 2021

<b>Instructor(s):</b>	Dr. Chung-Wen (Albert) Tsao
<b>Email:</b>	chung-wen.tsao@sjsu.edu (Once the class starts, please use Canvas Inbox)
<b>Class Days/Time:</b>	M/W 12:30-13:45
<b>Classroom:</b>	Online only - Synchronous at <a href="https://sjsu.zoom.us/j/89574810154">https://sjsu.zoom.us/j/89574810154</a>
<b>Office Hours:</b>	<ul style="list-style-type: none"><li>• M/W: 17:20 - 18:00PM <a href="https://sjsu.zoom.us/j/86795567911">https://sjsu.zoom.us/j/86795567911</a></li><li>• T/R : 17:20 - 18:00PM <a href="https://sjsu.zoom.us/j/88010610862">https://sjsu.zoom.us/j/88010610862</a></li><li>• By Appointments</li></ul>
<b><u>Prerequisites:</u></b>	CS 42 / MATH 42 or CS 42X / MATH 42X, and CS 46B (with a grade of "C-" or better).
<b>Class Meeting Dates:</b>	Aug 19, 2021- Dec 6, 2021
<b>Units</b>	3 units

### **Class Format**

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas](https://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:**

- **Late assignments will NOT be accepted for any reason.**
- 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 solutions 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.

Grading Scale					
A+	≥ 97%	A	93%	A-	90%
B+	87%	B	83%	B-	80%
C+	77%	C	73%	C-	70%
D+	67%	D	63%	D-	60%
F	below 60.0%				

**Classroom Protocol and Other Notes**

- Absences in attending the first two lectures will be dropped out from the class.
- No late assignments will be accepted without advanced arrangement with the instructor.
- No incomplete grades will be given.
- No exam may be taken before or after the scheduled time for any reason.
- There is no make-up quiz, assignment, project, or midterm/final exam.
- No extra credit will be assigned. Grades will not be adjusted in any way.
- 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.
- Audio or video recording of the lectures are NOT allowed.
- Use of electronic devices during exams is NOT allowed.
- You are required to check Canvas for reading/assignments.
- The information on this syllabus is subject to change; changes, if any, will be carefully 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/>

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

Week	Date	Topics
1	19-Aug	School Begins
2	23-Aug	Introduction to Computer
	25-Aug	Computer Organization
3	30-Aug	Number Representation
	1-Sep	Programming a Computer
4	6-Sep	Labor Day

	8-Sep	Assembler,Linker,Loader
5	13-Sep	SPIM IDE & MIPS Simulator
	15-Sep	Memory Usage I
6	20-Sep	Memory Usage II
	22-Sep	Memory Usage III
7	26-Sep	Review
	27-Sep	Midterm Exam I
8	4-Oct	Addressing Modes, Directives
	6-Oct	Arithmetic and Logic Instructions
9	11-Oct	Comparison, Branch & Jump
	13-Oct	Procedure
10	18-Oct	Procedure Implementation
	20-Oct	Boolean Algebra I
11	25-Oct	Boolean Algebra II
	27-Oct	Logic Gates
12	1-Nov	Logic Circuit Design
	3-Nov	Logic Design Components
13	8-Nov	Review
	10-Nov	Midterm Exam II
14	15-Nov	Addtion and Subtraction Logic
	17-Nov	Multiplication Logic
15	22-Nov	Division Logic
	24-Nov	Thanksgiving
16	29-Nov	Floating Point Number Representation
	1-Dec	Floating Point Number Representation
17	6-Dec	Exception & Interrupt
	Final	12:15-2:30 PM, Tuesday, December 14

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