Computer Science, California State University, Northridge
Computer Architecture and Assembly Language and Lab
COMP 122/L
Fall Semester 2021

Dr. Steven Fitzgerald (steve@my.csun.edu)
https://www.csun.edu/~steve
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General Information:

Zoom Link:	https://csun.zoom.us/my/smf.steve
Slack Link:	https://csun-comp-122.slack.com
Slack Channel:	#fitzgerald-f21
GitHub Organization:	https://github.com/orgs/COMP122/dashbo_ard
Office Hours:	Monday @ 2:00-2:45 & Tuesday @ 11:00-11:45

Class Information for: COMP 122 (21131) and COMP 122L (21135)

Meeting Times:	Tuesday & Thursday @ 9:00 AM - 9:25 AM & 9:30 AM - 10:45 AM
Final Exam:	Tuesday, 12/14 @ 8:00AM

Class Information for: COMP 122 (16980) and COMP 122L (16981)

Meeting Times:	Tuesday & Thursday @ 3:00 PM - 3:25 PM & 3:30 PM - 4:45 PM
Final Exam:	Thursday, 12/16 @ 3:00PM

Class Schedule with tentative dates of quizzes/exams:

Section 0:	Models for Communication and Computation	(Quiz: 9/17)
Section 1:	Data Formats and Encodings for Computing	(Exam: 10/14)
Section 2:	Digital Logic: Combinational and Sequential Circuits	(Quiz: 10/29)
Section 3a:	Three Address Code and Assembly-Level Programming	(Exam: 11/23)
Section 3b:	Parameter Passing: registers, stacks, and frames	(Cumulative Final)

1. Things to Note:

- My goal is NOT to make this an easy class, but to maximize the amount of learning.
- I provide a lot information to provide context and to foreshadow material in future classes.
- Don't get overwhelmed with the information flow, don't focus on details but concepts.
- The best way to be successful in this class is to be engaged!
- The more you put into the class, the more you will benefit.
- All class-related questions, comments, etc., are to be posted on Slack.

2. Course Material:

- This class requires you to have direct and continual access to a computer. In short, it is a *de facto* requirement to own your own laptop/desktop computer.
- You should be familiar with the Linux CLI (command line interface)
- This class requires you to use several online resources.

3. Course Description (from the [Catalog](#)):

Grade of C or better in COMP 110/L; Grade of C or better in MATH 103, 104, 105, 150A or 255A, or a passing score on the Math Placement Test (MPT) that satisfies prerequisites for MATH 150A or 255A; Lower Division writing requirement.

Introduction to computer architecture, assembly language programming, system software and computer applications. Number systems and data representation. Internal organization of a computer. Primitive instructions and operations. Assembly language.

4. Course Topics:

The following high-level topics will be review, covered or introduced in class:

- Models of Computations:
- Models of Communications: OSI and TCP/IP
- Instruction Set Architectures
- CISC versus RISC
- Stack-based machines
- Operating Systems and Execution Models

- Boolean Logic
- Combinatorial Circuits
- Sequential Circuits
- Pipeline Architectures

- Encodings and Mappings
- ASCII, UTF-8, base64
- Numbering Systems
- Base Conversions
- Binary Numbering Representations
- Mathematical Operations
- Floating Point representations

- Introduction to Assembly Language
- Three Address Code and Control Flow
- MIPS Assemble Language
- Operational Semantics
- Parameter Passing: Registers, stacks, frames and buffers

In addition to the topics listed above, you will also be learning both the C programming language and the MIPS assembly language. See the [course schedule](#) on the my.csun.edu drive for additional information.

5. Course Evaluation:

The course evaluation for both COMP 122 and COMP 122L are unified. The instructor does not make a distinction between the lecture and lab meetings and utilizes the entire time as appropriate to cover the material and projects as necessary. Each student will be evaluated and will assigned the same letter grade[1] for both COMP122 and COMP122L. This grade should reflect the quality and quantity of knowledge that the student acquired via this course. (It is all about learning!)

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[1] Plus/Minus grading will be used.

Note that there is 15% percentage associated with participation. A student may demonstrate in various ways their involvement in the class. Through this involvement, I gain a better understanding of what you, and the class as a whole, has learned and what material needs to be reinforced or reviewed to strengthen the learning process.

Students are underlined expected to work diligently and consistently throughout the semester. Students that procrastinate till the end, in hopes that they can crunch and cram just prior to the final are sadly mistaken.

The table below provides the objective measures used to calculate a student's final grade.

Type	Weight
Participation, Exercises, Assignments, and Activities	15%
Laboratory Assignments	35%
Quizzes (2)	10%
Exams (2)	20%
Cumulative Final (1)	20%

Regardless of the structure used to assign a quantitative number to each student, it is the Professor's goal to assign a final quantitative number that is closely aligned with the student's qualitative understanding of the course content. Your active participation in this class is central to demonstrating course knowledge.

6. Course Policies

I encourage everyone to collaborate, to work in teams, and to discuss course material with your colleagues. All student submissions, however, must be the work of the student who has submitted the material. Students should therefore be familiar with the University's rules on academic dishonesty, which can be found in the Undergraduate/Graduate Catalog. In particular, plagiarism will not be tolerated! Any student caught plagiarizing any work may automatically receive a grade of F for the course. If you are unsure as to what constitutes plagiarism, it is your responsibility to check with the instructor. Other forms of dishonesty will result in similar actions.

Note: Changes may be (will be) needed to this syllabus and the course plan. All such changes will be announced in class and posted on the class website. Students are responsible for this information.