California State University, San Bernardino
CSE 313 – 01 – Machine Organization
SYLLABUS

Fall 2018

Student Learning Outcomes: This course introduces the student to the principles of computer organization, computer architecture, and assembly language. Specifically the objectives of the course are:

- To know the basic components that make up a computer: CPU, memory, storage, input, output. What they consist of, how they operate, and how they work together.
- To know the organization of the components into a computer system.
- To know how data (integers, characters, arrays, records, linked lists) are represented in a computer.
- To know how operations are implemented, i.e. using the datapath and control.
- To know machine language and assembly language (LC-3).
- To know compilation of high level programs into assembly language, and assembly language programs into machine language.
- To know the internals of parameter passing and recursion, e.g. activation records and the runtime stack.

Instructor: Professor Taline Georgiou

Email: **tgeorgio@csusb.edu**. Please include **CSE 313** in the subject for filtering purposes.

Office: JB 538

Phone: 909-537-5411

Office Hours: Before and after class, and by appointment.

Class meeting time and place: **Lecture**: 8:30 AM - 9:45 AM MW, JB 146
Lab: 10:00 AM - 11:50 PM M, JB 360.

Learning Management System: http://blackboard.csusb.edu.

Prerequisites: CSE 202. To receive credit for this course, you must also be registered in the lab part of it.

Textbook (Required): *Introduction to Computing Systems: From bits & gates to C & beyond*, by Yale N. Patt, Sanjay J. Patel, Publisher: McGraw-Hill Science/Engineering/Math; 2nd edition, 2003, ISBN 0072467509

Final: Wednesday, December 5, 8:00 AM – 9:50 AM

Grading: Assignments 25%, Labs 25%, Midterm 25%, Final 25%

Grade Scale:

A	93 – 100	C	73 – 76
A-	90 – 93	C-	70 – 73
B+	86 – 90	D+	66 – 70
B	83 – 86	D	63 – 66
B-	80 – 83	D-	60 – 63
C+	76 – 80	F	00 – 60

Attendance: It is expected that the student will attend all lectures. The student is responsible for all material covered in class, and also for all announcements made therein, e.g. the date of the Midterm Exam. Attending and participating during lectures and labs is important in doing the homework and completing the labs.

Homework: Homework, three assignments, is to be done **individually**. It is due at the beginning of the class meeting on the due date. Homework must be neat, optionally typed. Sloppy or illegible homework will be penalized. Problems must be in the right sequence with all work shown. Points will be deducted for not following the rules. **Late homework will not be accepted.** Extenuating circumstances will be considered. Documentation may be asked. In such cases, the student must inform the instructor via email or in person as soon as the problem arises or at least 3 days before the due day.

Grading questions: All questions regarding a grade must be made within 7 calendar days from the day the assignment or exam has been returned in class or, in the case when it does not involve submitted hard copy, from the day grades for the class have been recorded on Blackboard. **It is the student's responsibility to ask for unpicked work or to correct an unrecorded grade (which is interpreted as zero) within the 7-days.** After that, the grade will be fixed.

Labs: Labs make up 25% of the final grade. The lab manual and lab instructions will be posted on Blackboard.

Electronic devices: All devices capable of electronic communication, such as mobile phones or tablets, must be turned off in class. Electronic devices and accessories must not be visible or worn during an exam. Disrupting the class via technology, or otherwise, will not be tolerated.

Material collection: Copies of some graded work will be retained for accreditation purposes. All returned graded work must be saved in case it is asked for accreditation purposes.

Academic honesty: According to the CSUSB Catalog of Programs, plagiarism and cheating may result in penalties up to and including expulsion. Students are allowed and encouraged to discuss the material related to assignments, however writing down the solutions must be done individually. Exchanging solutions or parts of solutions is not allowed. When it comes to the attention of a student that possibly dishonest behavior took place, he or she should report it to the instructor. At the very least cheating on an assignment will result in a grade of zero.

University policies: The student is referred to "Academic Regulations and Procedures" in the CSUSB Bulletin of Courses for the university's policies on course withdrawal, cheating, and plagiarism.

Disabilities: If you are in need of an accommodation for a disability in order to participate in this class, please contact the instructor and the Services to Students with Disabilities at UH-183, (909) 537-5238. It is the student's responsibility to seek academic accommodations for a verified disability in a timely manner.

Outline of Course: (Approximate and subject to change)

Week	Topic
1	Chap. 1, 2, Introduction: *Integers, Floating*
2	Chap. 3, *Digital logic review*; Chap. 4, *The Von Neumann Model,*
3	Chap. 5, 6, *LC-3; Programming*
4	Chap. 7, *Assembly Language*
5	Chap. 8, 9, *I/O; TRAP Routines and Subroutines*
6	Chap. 10, *The Stack*
7,8	Chap. 11, 12, 13, 14, 15, *Brief Review of C*
9,10	Chap. 17, 18, 19, *Recursion, I/O, Data Structures*