

CSE 2312 Syllabus, Fall 2017

No: CSE 2312-003

Title: Computer Organization and Assembly Language Programming

Instructor: Dr. Song Jiang, Associate Professor of Computer Science and Engineering

Office Hours: 2:00pm – 3:00pm M/W

Office Location: ERB 559

Phone: (817) 272-3610

Email: song.jiang@uta.edu

Meeting Time: M/W 4:00-5:20pm

Course Meeting Location: ERB 130

Web Page: <http://ranger.uta.edu/~sjiang/CSE2312-fall-17/CSE2312.htm>

Course Description

This course provides an overview of the architecture and organization of a computer consisting of the processor, memory, I/O subsystem, and peripherals. In this course, students will learn basics of computer architecture and low level programming, i.e., assembly code and hardware manipulation. It will focus on the basic concepts of computer architecture and machine instructions, memory access and storage, instruction execution, assembly language, computer organization, data representation and transfer, digital arithmetic, memory storage and addressing methods, procedures and interrupts, conditional processing, and more.

Assembly language is a low-level programming language with a very strong correspondence to a processor architecture's machine code instructions. This course will introduce the Intel family of processors and its associated assembly language. Programming with the language helps to better understand how various components of a computer work together to execute programs under the control of an operating system. Successful completion of this course will provide students a comprehensive understanding of computer organization and architecture and skills to program with assembly language.

Textbook:

- 1) Andrew S. Tanenbaum, Structured Computer Organization, 6th Edition. Prentice-Hall, Inc., 2012. (Required)
- 2) David A. Patterson and John L. Hennessy, Computer Organization and Design: The Hardware/Software Interface (The Morgan Kaufmann Series in Computer Architecture and Design) 5th Edition (Optional)
- 3) Irvine, Kip., Assembly Language for Intel-Based Computers, 6th Edition, Prentice-Hall, Inc., 2011. (Optional)
- 4) Paul A. Carter, PC Assembly Language, July 2006. (Optional)

Prerequisites:

- 1) CSE 1320 Intermediate Programming

2) CSE 1310 Introduction to Computers & Programming

Grading Policy

Grading scale

- 1) [90 100] --- A
- 2) [80 90) --- B
- 3) [70 80) --- C
- 4) [60 70) --- D
- 5) [00 60) --- F

Note: [] denotes inclusion and () denotes exclusion

Distribution of Points:

- 1) Homework and quizzes --- 30%
- 2) Programming Assignments --- 20%
- 3) Midterm --- 20%
- 4) Final Exam --- 30%

Makeup Exam, Makeup Assignment, and attendance Policy:

- 1) Homework and programming assignments are due at the beginning of class. Automatic 20% is deducted for each day late to hand in assignments (including weekend). They will not be accepted after an overdue of three days.
- 2) If you miss an exam or quiz due to unavoidable circumstances (e.g., health), you must notify the instructor via email or meeting with him as soon as possible and request a makeup approval. Please let the instructor know ahead of time! Do NOT ask for make-up exams or other components if you missed an exam or a project due to travel (except when you are required to travel to represent the university or the department).
- 3) Attendance though not mandatory, but is HIGHLY encouraged. Class participation may directly affect your grade in the 'Homework and Quizzes' component.

Course Policy

Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 -- The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans With Disabilities Act - (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Integrity

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)

Please acknowledge the following Honor code in all submissions:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence. I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Drop Policy

Students may drop or swap (concurrently add and drop) classes through MyMav self-service throughout the registration period. After the late-registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw, if he/she does not plan to attend after registering.

Emergency Exit Procedures

Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities. How best to exit the building will be explained on day one. (See also http://www.uta.edu/campus-ops/ehs/fire/Evac_Maps_Buildings.php and <http://www.uta.edu/police/EvacuationProcedures.pdf>.)

Student Support Services

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to toresources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.