CSE 2312 - Summer 2014 - Syllabus

Course: CSE 2312 - Section 001 - Computer Organization and Assembly Language Programming.

Course web page: http://vlm1.uta.edu/~athitsos/courses/cse2312_summer2014
Lecture times: MoTuWeTh 1:00pm-3:00pm
Classroom: NH 111
Prerequisites: CSE 1310 (Introduction to Computers and Programming), CSE 1320 (Intermediate Programming).
Textbook: Structured Computer Organization, by Andrew S. Tanenbaum and Todd Austin. 6th Edition, 2012, Prentice Hall. ISBN-10: 0132916525. ISBN-13: 978-0132916523.

Instructor:

Vassilis Athitsos

E-mail: athitsos@uta.edu

Office: ERB 623
Office telephone: 817-272-0155
Office hours: MoTuWeTh 11:30am-12:45pm.

Teaching assistant (GTA):

Charles Gatz
E-mail: charles.gatz@mavs.uta.edu
Office hours: TBA.

Course Description

Description of Course Content:

Computer organization from the viewpoint of software, including: the memory hierarchy, instruction set architectures, memory addressing, input-output, integer and floating-point representation and arithmetic. The relationship of higher-level programming languages to the operating system and to instruction set architecture are explored. Some programming in an assembly language.

Student Learning Outcomes:

The objective of this course is to introduce computer science and engineering students to the architecture, organization, and low-level (assembly) programming of computing systems. At course conclusion, students should be able to:

- Define components of a computer system, such as input/output devices, memory, processors, etc.
- Define different types and levels of computer systems, such as instruction set architectures, device level architectures, microcontrollers, RISC, CISC, etc.

- Compute and compare basic performance metrics of programs on different architectures and levels.
- Convert between binary and decimal representations, binary and character encodings like ASCII, real numbers and floating-point approximations, and perform manipulations of these information representations (arithmetic, etc.).
- Write, assemble, and execute assembly language programs to solve problems.
- Write assembly programs using different endianness, addressing modes, stack features, and other architecture and ISA specific features.

Prerequisites:

All students are expected to have passed the courses *Introduction to Computers and Programming* (CSE 1310) and *Intermediate Programming* (CSE 1320).

Course Materials:

Additional course materials such as lecture notes, assignments, and solutions will be available electronically on the course web page. Changes and corrections, if any, will also be announced by e-mail.

Assignments:

There will be several written and programming assignments in this course. Typically, multiple new assignment will be posted each week. The following class policies regarding assignments will be followed:

- All assignments must be submitted via Blackboard.
- All written (non-programming) portions of an assignment must be in electronic format. Acceptable formats are Word, PDF, Open Office, and text. No other formats will be accepted without prior written consent by the instructor. Scans of handwritten solutions will not be accepted.
- All code for programming assignments must compile and run on machine omega.uta.edu. Solutions in C will be accepted. You will not receive credit for solutions in any other programming language.

Students are allowed to work with other persons on the assignments. At the same time, learning to solve problems on your own is the most important practice for the midterm and final exams.

Before an assignment is due, the instructor and teaching assistant will not provide individual students with hints or other help towards completing the assignment. Students are welcome, and strongly encouraged, to work on practice problems. The instructor and teaching assistant will be happy to help students who encounter difficulties in solving the practice problems.

Late submission policy:

- All assignments are graded out of 100 points. Assignments submitted late will be penalized, at a rate of 5 penalty points per hour. The submission time will be the time shown on Blackboard. Any assignment submitted more than 20 hours late will receive no credit.
- Exceptions to late submission penalties will only be made for emergencies documented in writing, in strict adherence to UTA policy. For all such exception requests, the student must demonstrate that he or she made all efforts to notify the instructor as early as possible.
- Computer crashes, network crashes, and software or hardware failure will NOT be accepted as justification for late submissions. If you want to minimize chances of a late submission, aim to submit early. You can always revise your submission till the deadline.
- Sometimes students submit the wrong files on Blackboard. Unfortunately, no credit or waiver of

late penalties can be provided in such cases.

- If you find yourself in an emergency situation and can not deliver a homework on time, immediately inform the instructor and teaching assistant. Even if you have a valid reason for delivering late an assignment, you must make a convincing case that you have notified the instructor and teaching assistant as early as possible.

Exams:

There will be two midterms and one final exam in this course. Each exam is worth 25% of the course grade, and thus exams will constitute 75% of the course grade. **No make-up exams will be offered.**

All exams are open-book, and students are free to bring any printed or handwritten material (textbooks, notes, etc.) to consult during the exam. Students will not be allowed to bring in any electronic aids, except for pocket calculators.

Students are not allowed to talk or otherwise communicate with other students during an exam.

The final exam will take place on Monday, August 11, 1:00pm-3:00pm.

Attendance:

Attendance is not required for lectures. However, attendance records will be kept, and students are responsible for the material covered in the lectures. The instructor and teaching assistant will not honor requests to fill students in on what they missed in class, unless the absence was justified by an emergency.

Attendance is required for exams. Absences for exams will only be excused for medical or other emergencies, at the discretion of the instructor. All emergencies must be reported as early as possible and documented in writing. No make-up exams will be given.

Notes: Absence from exams may be excused, with appropriate documentation, for illness, critical family emergencies, military service obligations, observance of major religious holidays, and certain university service commitments. **Requests for excused absence, and documentation for such absences, must be provided as soon as possible, and will be rejected if provided unjustifiably late.**

Class Participation:

Class participation is optional, and will not be considered for the course grade. At the same time, students are highly encouraged to participate, by asking questions, as well as answering questions by the instructor. Class participation can be an important resource for students who have difficulty understanding any part of the course material.

Grading:

Assignments and exams will contribute towards the course grade using the following weights:

Assignments	25%
First Midterm	25 %
Second Midterm	25 %
Final Exam	25 %

Any request for re-grading (for an assignment or exam) must be made within 4 days of receipt of that grade.

Grading is based on the following absolute scale. To achieve a grade, you must achieve the required number of points in the course.

- A: 90%
- B: 80%
- C: 70%
- D: 60%
- F: below 60%.

The instructor reserves the right to lower these thresholds, based on the distribution of final percentages.

IMPORTANT: It should be clear to every student that course grades will depend EXCLUSIVELY on the above grading criteria. Students should not request nor expect any other factor to be considered in computing the course grade. For example, factors that will NOT be considered are: need of a better grade to keep financial aid, to stay in the program, or to graduate. Students are expected to carefully monitor their own performance throughout the semester and seek guidance from available sources (including the instructor) if they are concerned about their performance and the course grade that they will earn.

Withdrawals:

The university withdrawal policy will be strictly adhered to. Up to the initial withdrawal date, all students will receive a W. After that date, the grade will be determined by the student's current average, and a WF or WP assigned as appropriate.

Expectations for Out-of-Class Study:

Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend an additional 15-30 hours per week of their own time in course-related activities, including reading required materials, completing assignments, solving practice questions, and preparing for exams.

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 building exit, which is located to the left of the classroom. 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 handicapped individuals.

University Policies and Services

Grade Grievances:

Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate catalog.

Drop Policy:

The standard UTA drop policy applies to this course. Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late 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 they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/ses/fao).

Americans With Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity:

All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

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.

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, paragraph 2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

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 resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication:

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey:

At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.