Course Syllabus

Course Information

CS/CE 2340.002 Computer Architecture - Fall 2024
Lecture Info: TuTh: 11:30am - 12:45pm ; Class Room location: ECSS 2.305

Professor's Contact Information

Professor: Dr. Gity Karami
Office Phone:972-883-4204
Office Location:ECSS 3.202
Email: gity.karami@utdallas.edu
Office hours: Tu: 1:00 pm – 2:00 pm, virtual by appointment
Th 1:00 pm – 12:00 pm, in-person, walk-in

Signup link for virtual meeting :
https://calendly.com/gxk180009/virtual-office-hours
Please sign up in advance (at least one day before your scheduled meeting)

Course Modality and Expectations

- **Instructional Mode:** Traditional Classroom/Laboratory
- **Course Platform:** All instruction will be through the eLearning platform, where all the course materials including links to the recorded/online resources will be posted. We will also use Microsoft Team for Virtual office hours and piazza as asynchronous Q&A platform.
- **Expectations:** Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. Active participation on piazza is also expected.

Class Recordings:

The class's lectures may be recorded and the links posted in eLearning. Additionally, the instructor may record other meetings of this course, and such recordings will be posted in eLearning too. **Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded material**. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. **Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments** except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Piazza:.

We'll be using piazza as asynchronous Q&A platform. The quicker you begin asking questions on Piazza (rather than via emails), the quicker you'll benefit from the collective knowledge of your classmates and instructor. I encourage you to

ask questions when you're struggling to understand a concept. The link to enroll in Piazza is available in e-learning.

Microsoft Team:

We'll be using Microsoft Team for Virtual office hours. Virtual office hours will be held using Microsoft Team on Tu 1:00 pm – 2:00 pm by appointment; **Signup link for virtual meeting:** https://calendly.com/gxk180009/virtual-office-hours
Please sign up in advance (at least one day before your scheduled meeting).

Live lectures may also be available on Microsoft Team during the class time.

Class Participation:

Regular and punctual class attendance is expected. Students who fail to follow the class materials regularly are inviting scholastic difficulty. The course's material gets much more complex as the course progresses, and it is typically very difficult to catch up with missed classes. Active participation on piazza is also expected.

Class Materials:

The instructor may provide class materials that will be made available to all students registered for this class. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in the class or uploaded to other online environments, except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Course Prerequisites:

(CE 1337 or CS 1337 or TE 1337 with a C or better or equivalent) and (CE 2305 or CS 2305 or TE 2305 with a C or better).

Course Description:

CS/CE 2340- **Computer Architecture** (3 semester credit hours) This course introduces the concepts of computer architecture by going through multiple levels of abstraction, and the numbering systems and their basic computations. It focuses on the instruction-set architecture of the MIPS machine, including MIPS assembly programming, translation between MIPS and C, and between MIPS and machine code. General topics include performance calculation, processor datapath, pipelining, and memory hierarchy. Credit cannot be received for both courses, (CS 2340 or SE 2340) and (CE 4304 or EE 4304).

Text Book:

Computer Organization and Design - The Hardware/Software Interface – Fifth Edition, Patterson and Hennessey, Morgan-Kaufmann, ISBN: 978-0-12-407726-3

*supplementary materials (Research papers and handout) will be posted in the e-learning

Learning Objectives:

After successful completion of this course, the student should

- be able to write a fully functional, stand-alone medium size assembly language program (e.g. a basic Telnet client)
- have an ability to represent numbers in and convert between decimal, binary, and hexadecimal and perform calculations using 2's complement arithmetic
- understand the basic model of a computer including the data path, control, memory, and I/O components
- be able to program efficiently in an assembly level instruction set, including the use of addressing modes and data types
- understand the role of compilers, assemblers, and linkers and how programs are translated into machine language and executed
- be able to demonstrate comprehension of a pipelined architectures including data paths and hazards
- understand the memory hierarchy including caches and virtual memory
- be able to demonstrate comprehension of computer performance measures and their estimation

Tentative Course Schedule:

Week	Date	Material Covered
1	Aug 20- Aug 22	Syllabus - Chapter 1
2	Aug 27- Aug 29	Chapter 2
3	Sep 3- Sep 5	Chapter 2
4	Sep 10- Sep 12	Chapter 2
5	Sep 17- Sep 19	Chapter 2
6	Sep 24- Sep 26	Chapter 2
7	Oct 1- Oct 3	Chapter 3
8	Oct 8- Oct 10	Chapter 3, Midterm Exam
9	Oct 15- Oct 17	Chapter 5
10	Oct 22- Oct 24	Chapter 5
11	Oct 29- Oct 31	Chapter 5
12	Nov 5- Nov 7	Chapter 5
13	Nov 12- Nov 14	Chapter 5
14	Nov 19- Nov 21	Chapter 4
15	Nov 26- Nov 28	Fall break & Thanksgiving holidays
16	Dec 3- Dec 5	Exam

Course Works and Grading Policies:

Exam: 60% (Final Exam: 30%, Midterm Exam : 20 %, Quizzes: 10%)
Assignments/Project: 35% , Attendance 5%

*Instructor reserves the right to alter these weights or make changes as she sees fit.

Grades will be assigned according to the following scale

A+	97 and above
A	94 - 96 (94 or more and less than 97)
A-	90 - 93 (90 or more and less than 94)
B+	87 - 89 (87 or more and less than 90)
B	84 - 86 (84 or more and less than 87)
B-	80 - 83 (80 or more and less than 84)
C+	77 - 79 (77 or more and less than 80)
C	74 - 76 (74 or more and less than 77)
C-	70 - 73 (70 or more and less than 74)
D	60 - 69 (60 or more and less than 70)
F	Below 60

*We will have reading assignment every week.

Exams: There will be only two exams in this course. You are responsible for being available during the exam times. If you cannot make an exam time due to a valid excuse, you must let me know BEFORE the exam date and time. Medical emergencies will require a note from your Doctor. Missed exam will result in a grade of 0 for that exam. Please note the final exam is a comprehensive exam.

Assignments/Projects: Doing assignments/project is vital for meeting the learning objectives and succeeding in this course. There will be two assignments and one project in this course. You must work on them with a partner and submit them on e-learning. No e-mail submissions are accepted. No late submissions are accepted. So, please plan accordingly, do not leave your submissions to the last minute. Everybody submits his/her work very easily via e-Learning, you can do it, too. If you encounter a problem during e-Learning submission, please contact 24/7 e-Learning Help IMMEDIATELY. This help is available 24/7 at:

e-Learning Help URL: http://www.utdallas.edu/elearning/eLearningHelpdesk.html
e-Learning Help Phone: 1 866 588 3192

If you believe that you have a valid excuse for your work being late, then you must make arrangements with the instructor BEFORE the due date. Late submissions are not permitted once the graded assignment has been returned to students. Medical excuses will require a note from your Doctor.

Quizzes: You are supposed to work on each quiz with a partner or individually. You are allowed to use the text book and lecture slides during the quizzes. You must submit them on e-learning. No e-mail submissions are accepted.

Grading Disputes: All grade disputes must be submitted within 3 days of the grade being posted in eLearning. Uncontested grades will become final after 3 days and cannot be disputed later. You must come to the instructor's office or TA's office to review sample solutions before submitting a dispute form. Please note sample solutions for quizzes will be posted on e-learning, so that you can submit a dispute form for any quizzes on e-learning. Please note you may get a lower grade when you submit a grade dispute, as we may re-grade all questions.

Academic Dishonesty: You should do your own work on exam and assignments. Copying another student's work is not acceptable. Any indication of cheating and/or plagiarism on an exam/assignment will be an automatic 0 (zero) for the exam/assignment for all students involved. Solutions copied from the internet, instructor's manual, etc. will be also given zero credit. Please note that suspected incidents will be reported to the Office of Community Standards and Conduct.

Communications: I will be communicating with you via eLearning, piazza, and e-mail. If you need to send me an e-mail make sure it is using your UTD e-mail address. Please choose appropriate subjects for your emails. Always include your course and section number in the subject of your emails (for example, CS 2340.003- Exam). I won't answer your emails, if you don't put the course number and section number in the subject of your emails. Make sure you are checking eLearning announcements and checking your UTD e-mail frequently. I can't respond to you via gmail or any other non-UTD e-mail system. I need to verify that you are my student and I can only do that with the UTD e-mail system.

Comet Creed: "As a Comet, I pledge honesty, integrity, and service in all that I do."

Additional Policies: Please visit http://go.utdallas.edu/syllabus-policies for all other University policies

Descriptions and timelines are subject to change at the discretion of the Professor.