Computer Architecture
CS 7381 400
Computer Science Department
Spring 2023

Instructor Information

Instructor: Theodore Manikas
Email: manikas@smu.edu
Office Location: Caruth 477
Office Hours:
Tu, Th 9:30 – 10:30 am, or by appointment
Preferred Method of Contact:
Email

Course Details

Meeting Days/Times/Locations:

Start Date	End Date	Location	Meeting Day	Start Time	End Time
01/17/2023	05/02/2023	DISTANCE	ARR		

Credit Hours: 3.00
Course Description: Introduces the state of the art in uniprocessor computer architecture, with a focus on the quantitative analysis and cost-performance trade-offs in instruction set, pipeline, and memory design. Topics include quantitative analysis of performance and hardware costs, instruction set design, pipeline, delayed branch, memory organization, and advanced instruction-level parallelism. Prerequisite: Knowledge of material taught in CS 4381.

Student Learning Outcomes

Upon completion of the course a successful student will be able to do the following:

- Understand general issues of computer architecture
- Understand the structure of computer systems and how instructions are processed
- Understand how computer systems execute programs in parallel

- Understand how memory is structured and accessed in computer systems
- Understand applications of computer architecture fundamentals to modern computer design

Required Texts and Materials

Computer Architecture
ISBN: 9780128119051
Authors: John L. Hennessy, David A. Patterson
Publisher: Morgan Kaufmann
Publication Date: 2017-11-23
Edition: 6th

Grading Policies/Grading Scale

Grades will be available through Canvas and students may access them to determine where they stand in this course at any time. Your grade will be calculated according to the *"Assignments are weighted by group:"* table displayed in this syllabus page. Please make sure to check your grade book to see your instructor's feedback on your projects and activities. To see in-line feedback, go to the assignment, then click on View Feedback if applicable. It is your responsibility to check for your instructor's feedback and make appropriate improvements to assignments if necessary.

Grading Scale

A	A -	B +	B	B -	C +	C	C -	D +	D	D -	F
100-94%	93-90%	89-87%	86-83%	82-80%	79-77%	76-73%	72-70%	69-67%	66-63%	62-60%	59% and below

Assignment Group Descriptions

Quizzes [15% of Grade]

There will be weekly quizzes that will be used to assess your comprehension of the course material. The quizzes will be open book and open notes. The lowest quiz score will be dropped from your final quizzes grade.

Exams [75% of Grade]

There will be three exams this semester that will also be used to assess your comprehension of the course material. These exams will be more detailed than the quizzes. The exams will be open book and open notes. Lockdown Browser will be used for the exams (see below).

 Projects [10% of Grade]

There will be programming projects to help enhance your understanding of the course concepts. Extra projects will be assigned to students enrolled in CS/ECE 7381 (graduate sections).

Course Policies

Tech Requirements & Help

Please be sure that your device or devices meet the **technical requirements** for Canvas. [Technical requirements](#) and [browser requirements](#) for Canvas are located in the [Canvas Student Guide](#) . If you need Technical Support with Canvas, click the Help link on the left side [Global Navigation](#) . From there you can Search Canvas Guides, Chat with Support, or Submit a Request for assistance. You can also contact the SMU [IT Help Desk](#) for assistance with Canvas.

To be successful in this course, students should have basic keyboarding and computer skills, and be comfortable navigating the Internet. This fully online course occurs primarily via [canvas.smu.edu](#). [Zoom](#)Web Conferencing is used in this course as well for virtual (i.e., real-time, synchronous) meetings, and [Panopto (Links to an external site.)](#) is used for recording audio/video assignments. This course also uses the [Respondus LockDown Browser and Monitor (Links to an external site.)](#) for online exams.

IMPORTANT

A **webcam** is required for recording activities and taking exams. If your device does not have a built-in webcam, one can be purchased at a local consumer electronics store or through an online retailer like [Amazon](#).

TECHNICAL SUPPORT

If you run into any technical problems, there are a number of resources available to you. First, you can always check with me; in many cases, I can walk you through technical issues. Also, you can contact the [SMU IT Help Desk](#) for assistance with Canvas and Zoom. Otherwise, here are additional useful resources:

- [Canvas (Links to an external site.)](#)

- Click [Help Links to an external site.](#) on the [Global Navigation (Links to an external site.)](#) to search the Guides, [Chat (Links to an external site.)](#) or contact Instructure Support via email or phone
- Panopto
  - Search the [Panopto Support site (Links to an external site.)](#) (Links to an external site.) for forums and documentation, or contact the [SMU IT Help Desk. (Links to an external site.)](#)
- Zoom
  - Search their [Knowledge Base (Links to an external site.)](#) or [Submit a Request (Links to an external site.)](#)

PANOPTO VIDEO APP for CANVAS

If requested, you will use the [Panopto (Links to an external site.)](#) to submit video assignments. Be sure your device or devices meet the Panopto's [technical requirements (Links to an external site.)](#), and if you need Panopto support contact the SMU [IT Help Desk (Links to an external site.)](#).

RESPONDUS LOCKDOWN BROWSER and MONITOR

This course requires the use of LockDown Browser and a webcam for online exams. The webcam can be built into your computer or can be the type that plugs in with a USB cable. Watch this [short video](#) to get a basic understanding of LockDown Browser and the webcam feature. A student [Quick Start Guide (PDF)](#) is also available.

Then download and install LockDown Browser from this link:

http://www.respondus.com/lockdown/download.php?id=951749825

To ensure LockDown Browser and the webcam are set up properly, do the following:

- Start LockDown Browser, log in to http://canvas.smu.edu, and select this course.
- Locate and select the **Help Center** button on the LockDown Browser toolbar.
- Run the **Webcam Check** and, if necessary, resolve any issues.
- Run the **System & Network Check**. If a problem is indicated, see if a solution is provided in the Knowledge Base. Troubleshooting information can also be emailed to our institution's help desk.

When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Ensure you're in a location where you won't be interrupted

- Turn off all other devices (e.g. tablets, phones, second computers)

- Clear your desk of all external materials not permitted — books, papers, other devices

- Remain at your computer for the duration of the test

- If the computer or networking environment is different than what was tested above, repeat the Webcam and System checks prior to starting the test

- To produce a good webcam video, do the following:

    - Avoid wearing baseball caps or hats with brims

    - Ensure your computer or tablet is on a firm surface (a desk or table) — not on your lap, a bed, or other surfaces that might move

    - If using a built-in webcam, avoid tilting the screen after the webcam setup is complete

    - Take the exam in a well-lit room and avoid backlighting, such as sitting with your back to a window

- Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted.

Additional resources related to Respondus LockDown Browser and Monitor, including a link to download the LockDown Browser iPad app, are located at https://www.smu.edu/OIT/Services/LockDownBrowser. Respondus technical support is available either through the SMU IT Help Desk (Links to an external site.) or Respondus (Links to an external site.) .

ZOOM

Zoom (Links to an external site.) might be used for online synchronous (i.e., real-time) meetings in this course. Please be sure your devices meet the technical requirements (Links to an external site.) for Zoom.

Title IX and Disability Accommodations

Disability Accommodations

Students who need academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit smu.edu/DASS to begin the process. Once they are registered and approved, students then submit a DASS Accommodation Letter through the electronic portal, *DASS Link*, and then

communicate directly with each of their instructors to make appropriate arrangements. Please note that accommodations are not retroactive, but rather require advance notice in order to implement.

Sexual Harassment

All forms of sexual harassment, including sexual assault, dating violence, domestic violence and stalking, are violations of SMU's Title IX Sexual Harassment Policy and may also violate Texas law. Students who wish to file a complaint or to receive more information about the grievance process may contact Samantha Thomas, SMU's Title IX Coordinator, at accessequity@smu.edu or 214-768-3601. Please note that faculty and staff are mandatory reporters. If students notify faculty or staff of sexual harassment, they must report it to the Title IX Coordinator. For more information about sexual harassment, including resources available to assist students, please visit smu.edu/sexualmisconduct.

Pregnant and Parenting Students

Under Title IX, students who are pregnant or parenting may request academic adjustments by contacting the Office of Student Advocacy and Support by calling 214-768-4564. Students seeking assistance must schedule an appointment with their professors as early as possible, present a letter from the Office of the Dean of Students, and make appropriate arrangements. Please note that academic adjustments are not retroactive and, when feasible, require advance notice to implement.

Academic Policies

Religious Observance

Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. [Click here for a list of holidays.](#)

Medical-Related Absences

To ensure academic continuity and avoid any course penalties, students should follow procedures described by their instructors in order to be provided with appropriate modifications to assignments, deadlines, and exams.

Excused Absences for University Extracurricular Activities

Students participating in an officially sanctioned, scheduled university extracurricular activity should be given the opportunity to make up class assignments or other graded assignments that were missed as a result of their participation. It is the responsibility of the student to make arrangements for make-up work with the instructor prior to any missed scheduled examinations or other missed assignments. (See current Catalog under heading of "Academic Records/Excused Absences.")

Final Exams

Final course examinations shall be given in all courses where appropriate, and some form of final assessment is essential. Final exams and assessments must be administered as specified in the official examination schedule. Exams cannot be administered or due during the last week of classes or during the Reading Period. Syllabi must state clearly the form of the final exam or assessment, and the due date and time must match the official SMU exam schedule. Final exams are not required to be provided online.

Academic Dishonesty

Students are expected to embrace and uphold the SMU Honor Code. Violations of the Honor Code will be acted upon in accordance with the policies and procedures outlined in the Mustang Student Handbook.

Student Support Services

Student Academic Success Programs

Students needing assistance with writing assignments for SMU courses may schedule an appointment with the Writing Center through Canvas. Students who would like support for subject-specific tutoring or success strategies should contact SASP, Loyd All Sports Center, Suite 202; 214-768-3648; smu.edu/sasp.

Caring Community Connections Program

CCC is a resource for anyone in the SMU community to refer students of concern to the Office of the Dean of Students. The online referral form can be found at smu.edu/deanofstudentsccc. After a referral form is submitted, students will be contacted to discuss the concern, strategize options, and be connected to appropriate resources. Anyone who is unclear about what steps to take if they have concerns about students should contact the Office of the Dean of Students at 214-768-4564.

Mental Health Resources: On-Call and Ongoing Counseling Services

Throughout the academic year, students may encounter different stressors or go through life experiences which impact their mental health and academic performance. Students who are in distress or have concerns about their mental health can schedule a same-day or next-day appointment to speak with a counselor by calling [Counseling Services](). Counselors are available at any time, day or night for students in crisis at this number: 214-768-2277 (then select option 2) They will be connected with a counselor immediately. Students seeking ongoing counseling should call the same number (214-768-2277, then select option 1) during normal business hours to schedule an initial appointment.

Campus Carry Law

In accordance with Texas Senate Bill 11, also known as the 'campus carry' law, and following consultation with entire University community, SMU chooses to remain a weapons-free campus. Specifically, SMU prohibits possession of weapons (either openly or in a concealed manner) on campus. For more information, please see: [smu.edu/campuscarrylaw]().