

CSE 5306: Distributed Systems

Spring 2017

Instructor: Chance Eary

Office Number: Engineering Research Building, Room 647

Email Address chance.eary@uta.edu

Office Hours: Monday / Wednesday: 1:00pm to 2:00pm

Section Information: CSE 5306-004

Time and Place of Class Meetings: PKH 102, Tuesday / Thursday, 2:00pm to 3:20pm

TA: Shangeetha Ravichandran

TA Office Number: ERB 501

TA Email: shangeetha.ravichandran@mavs.uta.edu

TA Office Hours: Monday / Wednesday: 4:30pm to 5:30pm

Description of Course Content:

Hardware and software issues in modern distributed operating systems, distributed and networked operating systems, and real time operating systems. Topics may include multithreading, distributed systems, device drivers, object oriented operating systems, advanced file systems, parallel virtual machines, and load balancing. Examples from current popular modern systems and research operating systems will be analyzed.

Student Learning Outcomes:

From this class the student will gain enough understanding of distributed operating systems to be able to estimate the impact on various systems of the design, services, policies, etc. of Distributed and Networked Operating Systems. The student will know how to investigate this impact and what alternative tools and services might be useful.

Prerequisite: CSE 3320 – Operating Systems

Required Textbooks:

“Distributed Systems: Principles and Paradigms,” 2ed, Andrew S. Tanenbaum, Maarten Van Steen.

A free, digital copy of this textbook can be found by visiting <http://www.distributed-systems.net> and following the link to ‘Books.’

Attendance: Attendance is not mandatory. All students are responsible for all course material, whether they choose to attend the lectures or not.

Grading:

Three labs	33% (11% each)
Mid-term	33%
Final	34%

90-100 A

80-90 B

70-80 C

60-70 D

<60 F

Make-up Exams:

- If a student sits any exam, this means the student accepts the responsibility for that exam. Once taken, the exam will not be given again, and no make-up will be scheduled.
- If a student cannot make the midterm exam, and the student brings adequate documentation of why they did not attend, (such as a doctor's note), a make-up exam will be scheduled.
- If a student informs the instructor they cannot make the Final Exam before it is given, then a make-up exam will be scheduled. If they miss the Final Exam, and the student brings adequate documentation of why they did not attend, (such as a doctor's note), a grade of Incomplete will be given and a make-up exam will be scheduled. If neither action is taken, the Final Exam will be a zero.

A dental appointment or other non-emergency health situation is not an acceptable excuse for missing an examination you know about months in advance.

Grade Grievances:

If a student believes an error has been made in the grading of an assignment, the student has ***one week after an assignment is returned*** to resubmit an assignment for re-grading if they believe there is an error. *Papers will not be re-graded in the classroom!*

Late Policy

For every 24 hour period an assignment is late, 10-points will be deducted from the graded result.

Drop Policy: 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://wwwb.uta.edu/aao/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.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses 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.

UT Arlington faculty members 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, §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.

Any student found guilty of academic dishonesty will receive a -100% (negative one hundred) for that work (project, exam, homework, etc.) as well as having the course grade lowered one full letter grade - in addition to any other penalties assessed (suspension, expulsion, probation).

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 an online 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>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

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 exits, which are located on the east, west, and south sides of the building. 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.

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.

Writing Center. : The Writing Center, 411 Central Library, offers individual 40 minute sessions to review assignments, *Quick Hits* (5-10 minute quick answers to questions), and workshops on grammar and specific writing projects. Visit <https://uta.mywconline.com/> to register and make appointments. For hours, information about the writing workshops we offer, scheduling a classroom visit, and descriptions of the services we offer undergraduates, graduate students, and faculty members, please visit our website at www.uta.edu/owl/.

Course Schedule – The course schedule is *tentative*, and likely to change.

Date	Day	Topic	Chapter
17-Jan	Tuesday	Syllabus	
19-Jan	Thursday	Introduction	1
24-Jan	Tuesday	Introduction	1
26-Jan	Thursday	Architectures	2
31-Jan	Tuesday	Architectures	2
02-Feb	Thursday	Processes	3
07-Feb	Tuesday	Processes	3
09-Feb	Thursday	Communication	4
14-Feb	Tuesday	Communication	4
16-Feb	Thursday	Naming	5
21-Feb	Tuesday	Naming	5
23-Feb	Thursday	Synchronization	6
28-Feb	Tuesday	Synchronization	6
02-Mar	Thursday	Mid-term Review	1 - 6
07-Mar	Tuesday	Mid-term	
09-Mar	Thursday	Return / Discuss Exams	
14-Mar	Tuesday	SPRING BREEEEEEEAK!!!	
16-Mar	Thursday		
21-Mar	Tuesday	Consistency and Replication	7
23-Mar	Thursday	Consistency and Replication	7
28-Mar	Tuesday	Fault Tolerance	8
30-Mar	Thursday	Fault Tolerance	8
04-Apr	Tuesday	Security	9
06-Apr	Thursday	Security	9
11-Apr	Tuesday	Distributed Object-Based Systems	10
13-Apr	Thursday	Distributed Object-Based Systems	10
18-Apr	Tuesday	Distributed File Systems	11
20-Apr	Thursday	Distributed File Systems	11
25-Apr	Tuesday	Distributed Web-Based Systems	12
27-Apr	Thursday	Distributed Web-Based Systems	12
02-May	Tuesday	TBD	
04-May	Thursday	Final Review	7 - 12
09-May	Tuesday	Final Exam: 2:00pm to 4:30pm	

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911.