Instructor: Prof. Tommy Dang
Email: tommy.dang@ttu.edu
Office hours: 4 pm - 5 pm TR and available to talk right after the class
Office: EC 306C

Class: Class 5:00 pm - 6:20 pm TR T Fuller Petr Eng Research 00110 Jan 12, 2022 - May 10, 2022
Advanced Operating Systems Design - 32767 - CS 5352 - 001
Advanced Operating Systems Design - 53767 - CS 5352 - D01

TA: Zaynab Bello
Email: zbello@ttu.edu
Work phone: 806-834-0122
Office hours: 1:00 pm - 2:00 pm TR
iDVL Lab: EC 305

## Course Description:

Computer systems are undergoing a revolution. The developments of powerful microprocessors and high-speed computer networks have extended the traditional computer systems to wide-area distributed systems. The technology revolution has extended the traditional operating system roles and functionalities to an advanced and distributed manner as well. This course introduces the concepts, principles, and designs of advanced and distributed systems. Students are expected to learn the principles and gain hands-on experience on the state-of-the-art computing paradigm. The class discussions will cover architectures, communication, synchronization, fault tolerance, security, distributed file systems, as well as open research discussions in distributed and advanced operating systems. This course will consist of class lectures, assignments, programming projects, one research-oriented course project (with a written report and an oral presentation deliverables), and exams.
Extensive computer use is required.

## Prerequisites:

This course has the following prerequisites. If you are not sure whether you have enough background for taking this course, please talk to the instructor.

CS4352 Operating Systems or equivalent. Requires operating systems knowledge, Unix (Linux/OS X) operation and programming experiences.
CS3375 Computer Architecture or equivalent. Requires computer architectures knowledge and experiences.
Programming (C/C++/Java)
Please contact the instructor if you are unsure if you satisfy the prerequisites.

## Class policies:

No cell phone usage and no eating during class.
Academic dishonesty, such as cheating or plagiarism, is a serious offense. For the class projects, you are expected to come up with your own design ideas and implement your work. If you are caught cheating, the grade of F will stand as your final grade (see Part II B 2 of the *Student Handbook*). The instructor may recommend to Student Judicial Programs for more serious/ repeated violations. (*OP 34.12)*
Everything you do for credit in this subject is supposed to be your own work. Whenever you have doubts about the problems in assignments, discussions with other students and the instructor are encouraged. However, you need to write the solution yourself and list the contributions from other people.
Student evaluation of course learning outcomes.
Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. (*OP 34.22*)
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. (*OP 34.19*)

## Evaluation:

The numeric breakdown of your final grade is computed as follows::

| | Percentage | Notes |
|---|---|---|
| Random Class Quiz: | 20% | Seven quizzes of 3% each |
| Project: | 20% | Individual programming project |
| In-class Presentation and report: | 30% | (20% + 10%) |
| Final exam: | 30% | Lectures and student presentations |

| | |
|---|---|
| | A = 90 - 100%<br>B = 80 - 89%<br>C = 70 - 79%<br>D = 60 - 69%<br>F = 0 - 59% |

## Schedule:

| | Topics<br>Lecture slides and presentation materials will be provided on the class website.<br>Topics and/or dates may be changed during the semester at the instructor's discretion because of scheduling issues, developments in the discipline, or other contingencies. |
|---|---|

## Textbooks:

Distributed Systems: Principles and Paradigms (3rd Edition, 2017) by Andrew S. Tanenbaum and Maarten Van Steen
Publisher: CreateSpace Independent Publishing Platform
ISBN-10: 153028175X
ISBN-13: 978-1530281756

Modern Operating Systems (4th Edition) by Andrew S. Tanenbaum
Publisher: Prentice Hall
ISBN-10: 013359162X
ISBN-13: 978-0133591620

## Absence due to religious observance:

The Texas Tech University Catalog states that a student may be excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused for this purpose may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused. (see p.51)

## Absence due to officially approved trips:

The Texas Tech University Catalog states that the person responsible for a student missing class due to a trip should notify the instructor of the departure and return schedule in advance of the trip. The student may not be penalized and is responsible for the material missed. (see p.50)

## Late Work:

Assignments are due when specified, **no** submission will be accepted

after the due date.

## Student with Disabilities:

I would appreciate hearing from anyone who has a disability that may require special accommodations. I am sure we can work out whatever arrangements are necessary. Please see me during my office hours.
Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructorâ€™s office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405.

## Other infomation:

COVID-19 Related Issues
COVID-19 Related Items (Updated 2022)