CSCE 4600 Introduction to Operating Systems

Instructor Contact

Name: **Jonathon Doran**
Office: **NTDP E250J**
Student Hours: **Mon 11:00am to 1:00pm, Thursday 10:00am to 12:00pm, NTDP 250J or by appointment**
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Meets: **Monday/Wednesday 8:30am to 9:50am in NTDP B155**
Recitations:

R201: Monday 5:30pm to 6:20pm in NTDP B140
R203: Wednesday 5:30pm to 6:20pm in NTDB F236
R205: Friday 2:30pm to 3:20pm in NTDP F222

Final: **Monday 4-May, 7:30am to 9:30am in NTDP B155**

Communication Expectations

The best way to reach me outside of class or student hours is via email. During the week, I will respond to your email within 24 hours. On the weekends, the response time may extend up to 48 hours. You may discuss personal concerns or questions about the class or an assignment. I strive to get grades back between 1 to 1.5 weeks from the due date, although that may vary depending on class size. Communication is expected to be professional and respectful.

For effective communication please review the Online Communication Tips (https://clear.unt.edu/online-communication-tips) which cover key aspects of respectful and clear online interactions. **Please include "CSCE 4600" in the subject line of all emails for easier identification and a prompt response. If you are discussing a recitation, please include the recitation day.**

Course Description

Concepts in operating system analysis and design. General topics of process, resource and file management are presented and analyzed in the context of different system architectures and performance constraints.

Course Prerequisites or Other Restrictions

You are required to have passed the following courses:

- CSCE 3600 (Systems Programming)
- CSCE 2100 (Computing Foundations I),
- CSCE 1040 (Computer Science II).

If you are not comfortable with the material covers in these courses, please see me to discuss your situation.

Attendance and Participation

Attendance at both lectures and recitations is mandatory. In the past, low attendance has correlated with poor overall performance, which we aim to improve.

Regular attendance at lectures is crucial for understanding the material and keeping up with the course. In-class activities, such as iClicker polls, cannot be made up. Half of your iClicker grade is extra credit, which allows a few missed lectures without serious consequences, and can boost your overall grade if you have good attendance and study the material.

Recitations are designed to reinforce lecture content through hands-on practice and discussion. Attendance is mandatory and will be tracked. Missing recitations will negatively impact your final grade. Specifically, for every two missed recitations, your final grade will be reduced by one letter grade. However, absences with valid excuses with appropriate documentation will not be penalized.

Course Objectives

Course outcomes are measurable achievements to be accomplished by the completion of a course. These outcomes are evaluated as part of our ABET accreditation process. By the end of this course, students will be able to:

1. Use the principles of processes and threads for abstraction of real-world events
2. Formulate solutions for mutual exclusion and process synchronization
3. Understand the concept of deadlock to develop deadlock free systems of processes
4. Understand principles of memory and resource management
5. Identify different process scheduling paradigms and utilize them in system development
6. Develop fundamental security features to protect systems and data

Required Materials

Operating Systems Concepts - Essentials, 2nd Edition, by Silberschatz, Galvin, and Gagne, Wiley, 2013. ISBN 978-1-11-880492-6

Teaching Philosophy

This course is very hands-on. I expect you to apply material from prior courses as well as learn new skills appropriate to the assignments. My slides are talking points and are not replacements for the textbook. They should not be the sole material that you study.

Grade Components

Assignment	Points Possible	Percentage of Final Grade
Attendance, Participation, iClicker	Variable	5%
Recitation assignments	Variable	5%
6 Written Homework Assignments	600	20% (about 3% each)
3 Programming Assignments	300	30% (10% each)
Midterm Exam	100	20%
Comprehensive Final Exam	100	20%

Grading Policy

If you believe that there is a mistake in the grading of one of your assignments, you must bring these inquiries to the professor within one week of when the assignment is returned. After this period, it is too late to consider, except for an arithmetic error in calculating the score.

I guarantee that these percentages will be the maximum required for a letter grade. I usually lower these as needed to avoid having a large number of students on a grade boundary. Anyone I feel is on a boundary will receive the higher of the two grades.

Grading Scale

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

Late Submission and Extension Policy

Written Homework Assignments: Homework assignments are due on Canvas on the assigned due date. Under no circumstances should you email submissions without permission. Late homework will not be graded.

Programming Assignments: Program source code must be written in C or C++, and must be submitted on Canvas on the assigned due date to avoid a late penalty. There is a penalty of 20% per day after the due date. This means after 5 days, a late program submission has no value. Please note that under this policy programs are accepted late, but written homework is not.

Makeup Exams and Incompletes: Makeup exams and incompletes will only be given as a result of a verified emergency.

Extensions: **ALL** requests for extensions on assignments must be made prior to the due date and must be for a valid "emergency" reason. In extreme circumstances, contact after the due date may be accepted if there is a **COMPELLING** reason.

Tentative Course Calendar

Week	Date	Major Topics	Assignments
1	12-Jan	Processes	
	13-Jan	Processes	
2	20-Jan	No class, MLK	
	22-Jan	Processes	
3	27-Jan	Scheduling	
	29-Jan	Scheduling	HW1 due
4	3-Feb	Process Dependencies	
	5-Feb	Synchronization	P1 due
5	10-Feb	Synchronization	
	12-Feb	Synchronization	HW2 due
6	17-Feb	Synchronization	
	19-Feb	Synchronization	P2 due
7	24-Feb	Synchronization	
	26-Feb	Deadlock	HW3 due
8	3-Mar	Deadlock	
	5-Mar	Deadlock	
9	10-Mar	Spring break	
	12-Mar	Spring break	
10	17-Mar	Midterm Exam	
	19-Mar	Physical Memory	HW4 due
11	24-Mar	Physical Memory	
	26-Mar	Virtual Memory	P3 due
12	31-Mar	Virtual Memory	
	2-Apr	Virtual Memory	
13	7-Apr	Mass Storage	
	9-Apr	Mass Storage	HW5 due
14	14-Apr	Filesystems	
	16-Apr	Filesystems	P4 due
15	21-Apr	Filesystems	
	23-Apr	Filesystems	
16	28-Apr	Security	
	30-Apr	Security	P5 due

Syllabus Change Policy

The instructor reserves the right to change the course as needed, including but not limited to topics, due dates, and assignments/assessment items. The pace of the course may also be adjusted based on student progress and understanding. Any changes will be made after careful consideration of the course objectives and student progress.

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. When SPOT becomes available (generally in the last week or so of the course) you will receive an email. I offer a small amount of extra credit if class participation is over 80% of the students.

UNT Policies

Academic Integrity Policy

According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions from admonition to expulsion from the University.

Based on this policy, any form of "unauthorized assistance" constitutes cheating. If the use of artificial intelligence is not authorized for the assignment in question, then a violation has occurred.

Please also review the department policies on academic integrity and the use of AI.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodations must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding specific course needs. Students may request accommodations at any time; however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for each semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).