

CSCE 4600 Introduction to Operating Systems

Instructor Contact

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Student Hours: Mon/Wed/Fri 12:00pm-1:15pm or by appointment (via Zoom)
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Final: Friday 24-July

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.

In addition to open drop-in Zoom sessions you may also request an individual meeting at a time of your choosing. I use Calendly to book time (<https://calendly.com/jonathon-doran-unt/30-minute-meeting>) or you may send me email with a time preference and I will do my best to accommodate you.

For effective communication please review the [Online Communication Tips](https://clear.unt.edu/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.**

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 covered in these courses, please see me to discuss your situation.

Engagement and Pacing

This course is asynchronous, but it is not self-paced. Modules will be released on a weekly schedule, and assignments, quizzes, and exams have fixed due dates. You are responsible for managing your own time to keep up with the weekly pace.

Past experience shows that students who fall behind in an accelerated summer course rarely catch up. The 10-week schedule compresses a full semester of material, so a week of delay represents roughly 1.5 weeks of content. I strongly encourage you to engage with the material on a weekly cadence: watch the lecture videos, complete the reading, and submit work as it comes due.

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, Zybooks Edition, by Silberschatz, Galvin, and Gagne, Wiley, 2013. ISBN 979-8-203-27004-7

This course uses an interactive online textbook from zyBooks (an adaptation of *Operating System Concepts* by Silberschatz, Galvin, and Gagne). The zyBook includes embedded participation activities and challenge activities that count toward your course grade, so access is required, not optional.

To sign up, click any zyBook link in Canvas (the Getting Started with zyBooks assignment is the easiest place to start). If you do not already have a zyBooks account, you will be prompted to create one. You can purchase access directly through zyBooks during signup, or you can purchase an access code from the UNT bookstore and enter it during signup. Either path gets you the same access.

The first zyBook activity is required to unlock the rest of the semester and serves as confirmation that you have signed in successfully. Please complete it during Week 1.

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

Category	Percentage of Final Grade
Zybook	10%
5 Written Homework Assignments	20%
5 Programming Assignments	30%
Midterm Exam	20%
Comprehensive Final Exam	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. Please do not ask for unearned points as I will not grant those.

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.**

Incompletes: Require documentation of exceptional circumstances.

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	18-May to 23-May	Intro, Processes	HW1, Prog1 assigned
2	24-May to 30-May	Scheduling	Prog2 assigned, HW1 due
3	31-May to 6-Jun	Synchronization	HW2 assigned, Prog1 due
4	7-Jun to 13-Jun	Deadlocks	HW2 due, Prog 2 due
			HW3 assigned
5	14-Jun to 20-Jun	Deadlocks, Midterm	HW4 and Prog 3 assigned
			Midterm Exam
6	21-Jun to 27-Jun	Memory	HW3 due, Prog3 due
7	28-Jun to 4-Jul	Virtual Memory	HW4 due, HW5 assigned
8	5-Jul to 11-Jul	File Systems	Prog 4 assigned, HW5 due
9	12-Jul to 18-Jul	File Systems	Prog 5 assigned, Prog 4 due
10	19-Jul to 24-Jul	Distributed Systems	Prog 5 due, Final Exam

Assignments will generally be due on Friday evening. You may, of course, turn them in earlier. Canvas will accept multiple submissions. Only your latest will be graded.

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 \(https://disability.unt.edu/\)](https://disability.unt.edu/).