Fall 2023

CS 332: Principles of Operating Systems

Kamlesh Naik

Course Information:	
Course Code :	CS332_003/005/101
Course Name :	Principles of Operating Systems
Term :	Fall 2023
Class Meeting Time :	**CS332_003 :** Tuesdays, Fridays (01:00 pm – 02:20 pm) **CS332_005 :** Tuesdays, Fridays (02:30 pm – 03:50 pm) **CS332_101 :** Tuesdays (06:00 pm – 08:50 pm)
Teacher :	Prof. Kamlesh Naik (M.S. Computer Science)
Office Hours : (In Person)	Office No : GITC 4307 Tuesdays : 04:15 pm – 05:45 pm Wednesdays : 04:15 pm – 05:45 pm
Email :	kamlesh.r.naik@njit.edu kamlesh.naik@njit.edu krn9@njit.edu
Phone No :	+1-2013495916

CS 332 Course Overview & Learning Outcomes:

This course gives the student the necessary background and experience with operating systems. From this course the student will be able:

- To describe and discuss the basic components of a modern computer-based operating system.
- To describe and reason about the interactions among the various basic components of a computer-based operating system.
- To define and explain the operating systems concepts of process, threads, deadlocks, synchronization, systems calls.
- To learn how different CPU scheduling algorithms work, compare and explain their relative merits.
- To understand memory organization, physical and virtual memory, and differences between segmented and paged memory, and be able to describe their usage and relative merits.
- To understand I/O and I/O device behaviour and be able to compare and explain the merits of interrupt-driven vs DMA access.

Teacher's Availability and Response Time:

Please include CS332 in the Subject line of any email you send me and thus it will make it easier to manage my emails. I will abide with the same strategy in the emails I send you. I usually check my email regularly (after every 30 minutes). If I do not respond to your email within 60 minutes (except my class hours) during the weekdays, please send the email again. If an E-mail is sent to me after 12:00 am, you will receive the response to that E-mail after 8:00 am, the next day. If you need to have an online meeting with me, please send me an email and I will make every single effort to serve your query with regards to the course.

Course Materials and Announcements:

All material related to the course, including home-works will be posted on CANVAS. Announcements and notices will also be posted. It is mandatory for students to submit their home-works online over canvas. The Teaching Assistant will grade the submissions within a week. No E-mail submissions will be entertained. Homework submissions will not be entertained beyond the due date as the solutions will be posted online after the due date.

Textbook:

Operating Systems: Internals and Design Principles 9th edition, William Stallings, Pearson.
ISBN-13: 978-0-13-467095-9, ISBN-10: 978-0-13-467095-7

Exam Rules:

The duration of each quiz will be 25 minutes. The duration of the mid-term will be 90 minutes and that of the final will be 150 minutes. Exams will be in class for face-to-face classes. If the class runs in full distance learning mode, appropriate software tools will be used for exams taken off campus. I reserve the right to take penalty points off from students whose phones/electronic gadgets are found ringing during an exam.

Mid Term Exam Chapter Distribution:

Chapter:
Chapter 1 : Computer System Overview
Chapter 2 : Operating System Overview
Chapter 3 : Process Description and Control
Chapter 4 : Threads
Chapter 5 : Concurrency : Mutual Exclusion & Synchronization
Chapter 6 : Concurrency : Deadlock and Starvation

Final Exam Chapter Distribution:

Chapter:
Chapter 7 : Memory Management
Chapter 8 : Virtual Memory
Chapter 9 : Uniprocessor Scheduling
Chapter 10 : Multiprocessor, Multicore & Real-Time Scheduling
Chapter 11 : File Management

Grading Policy:

Criteria	% Distribution
Mid Term Exam:	35%
Final Exam:	35%
4 Quizzes:	20%
Home-works:	10%
Total =	100%

Final Letter Grade is based on absolute grading with the following scale as a guide.

85%-100% = A grade
75%-84.99% = B+ grade
68%-74.99% = B grade
60%-67.99% = C+ grade
50%-59.99% = C grade
35%-49.99% = D grade
Below 35% = F grade (Fail)

Also note that most students typically get all the points on the Homework assignments. Thus, your class grade depends almost entirely on the exams.

Make-Up Exam policy:

Make Up Exam policy is based upon generally accepted policies of the NJIT CS Department and individual circumstances. Exam makeup *after* missing the exam will be only allowed in extreme cases with written proof, e.g., hospital stay, car accident with police report, and similar. Exam makeup due to travel may or may not be approved ahead of time and never after the trip. As above, trips related to an extreme emergency, e.g., death in the family, will be allowed with written proof (death announcement in a newspaper or government death certificate with *official* English translation, if from a foreign country).

Simple rules:

- Turn off your cell-phones during class hours and examinations.
- I expect you to behave professionally.
- Speak to me about any issues you have related to the course.

Ethical Conduct:

Cheating during in-class quizzes/examinations/homework is, of course, illegal and immoral. The essential quality of the NJIT University Code on Academic Integrity is that each student shall demonstrate honesty and integrity in the completion of all assignments and in the participation of the learning process. Adherence to the University Code on Academic Integrity promotes the level of integrity required within the university and professional communities and assures students that their work is being judged fairly with the work of others.

You may "talk" about Homework assignments with each other. Where does talking end and cheating start? You may NOT copy exactly the same answers written by your friends. I will be checking for plagiarism, and I will have no mercy if I catch you. The student in question will be failed out of the course. In addition, I may give questions from the homework assignments and quizzes on the midterm and final exam. If your answers on the exams are substantially wrong, even though you did the homework correctly I might question you about the homework and reduce your homework credit to zero, from whatever it was before.

Exam Schedule:

Week	Examination
Week 8	Mid Term Examination (40 points)
Week 15	Final Examination (80 points)

Quiz Schedule:

Quiz	Date Scheduled
Quiz 01	4th week (tentative)
Quiz 02	6th week (tentative)
Quiz 03	10th week (tentative)
Quiz 04	13th week (tentative)

Homework Schedule:

Homework	Assigned Week	Submission Week
Homework 01	3rd week	4th week
Homework 02	5th week	6th week
Homework 03	6th week	7th week
Homework 04	11th week	12th week
Homework 05	12th week	13th week
Homework 06	13th week	14th week

Note:

In case of emergency wherein we are not able to cover all the destined chapters mentioned in the lecture schedule, it would be wise to exclude certain chapters and be within the expected time limits.

****