

Introduction to Operating Systems (CIS 345/545, Sec. 300)
Summer 2018 (M/T/W/TH)
2: 20 pm to 3: 55 pm, FH 102
Department of Electrical Engineering and Computer Science
Cleveland State University

Instructor: Dr. Sanchita Mal-Sarkar

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Work phone number: 216 523 7524

Office Time: 4:00 pm – 5:00 pm (T/W), other time by appointment.

Course URL: <http://grail.cba.csuohio.edu/~sanchita/sanchita.html>

Blackboard Learn: <https://bblearn.csuohio.edu/MACAuth/login.jsp>

TA: (Name: Jungyuam Liang, Email: liangjy10@gmail.com)

Number of Credits: 3

Prerequisite: CIS 340 and MTH 181

Course Catalog Description:

This course discusses the relationship between computer architecture and the operating system including interrupts, I/O handling, and memory management. Study of operating system functions, specifically, the management of computer resources such as processor scheduling; memory; I/O device scheduling; and file system structure, protection, and network connections.

Key Concepts:

Operating systems, process management, memory management, file systems, I/O systems and services, resource allocation, Deadlocks, multiprocessing, system performance, protection and security

Expected Outcomes:

Upon successful course completion, a student will be able to:

1. Be familiar to operating systems
2. Understand how operating systems manage processes (scheduling, synchronization, deadlocks)
3. Understand how operating systems manage memory (virtual memory)
4. Be familiar to file system interface and implementation, disk management
5. Understand the protection and security mechanisms
6. Be familiar with various types of operating systems including UNIX

Course Requirements:

Textbook:

- Modern Operating Systems, 4th Edition, Andrew S. Tanenbaum, Publisher: Pearson Prentice-Hall, 2014, ISBN: ISBN-10: 0-13-359162-X , ISBN-13: 978-0-13359162-0
- Linux for Programmers and Users, Graham Glass and King Ables, ISBN-13: 978-0131857483

Reference book:

Operating System Concepts, 7th Edition, Silberschatz, Galvin, and Gagne, Publisher: John Wiley & Sons, Inc., ISBN: ISBN-0-471-69466-5.

Blackboard: The course will be administered using Blackboard Learn (the updated version of Blackboard CE 6.0). The syllabus, calendar, homework assignments, notes, exams, pertinent links and grades are available on the blackboard.

Blackboard Learn: <https://bblearn.csuohio.edu/MACAuth/login.jsp>

For Blackboard help: <http://help.blackboard.com/Blackboard-Learn/9.1/SP08/EN-US/NAHE/Student/index.htm>

Student Expectations:

Make sure you meet the following criteria. These are essential for you to be able to complete this course successfully.

1. Assignments/Projects – Several group/individual assignments (5-7) will be assigned throughout the semester.

Group Assignments: All group assignments and group projects will be posted on blackboard, and students are required to complete them with the appropriate software and submit them by email to the TA (Name: Jungyuam Liang, Email: liangjy10@gmail.com) and the instructor through blackboard course message. All group members must submit their assignments to the group leader by 11:59 pm on Thursday of the week they are due. ONLY group leader will submit the final version to the TA and the instructor by 11:59 pm on Sunday of the week they are due. Group leader should mention all group members' names who have submitted their work, along with the class, section, and assignment number. The group members who did not submit to their group leader by Thursday will get zero for that group assignment/project. Group collaboration is encouraged for this course since it is the key for success in business world.

Individual In-class Assignments: All in-class assignments must be individually and independently completed and must represent the effort of the student turning in the assignments. For each individual assignment, you are required to mention your name, class, section, and assignment number. Should two or more students turn in a substantially similar solution, in the judgment of the Instructor, the solution will be

considered a group effort. Both or all involved in a group effort will receive a zero for that assignment. A student submitting a group effort assignment more than once will automatically receive an "F" for the course.

2. Graduate student (CIS 545) will choose a topic from the last few years of the OS conference, called "USENIX Symposium on operating Systems Design and Implementation". Read one or more papers and make a 10-min PPT presentation on the Wednesday before midterm test and another on the Wednesday before the final exam.
3. Late Assignment/projects – Late assignment will receive a penalty of 10% per day, unless excused. No late submission is accepted after one week of the due date. No make-up in-class assignments will be given in case of absence.
4. Exams and Make-up Exam - There will be two quizzes, one midterm exam and one final exam. Make-up exams will be given only in the case of serious need and only when the instructor is notified PRIOR to the exam time. In case of a missed exam, valid reason must be provided along with supporting document (e.g. doctor's note). The doctor's note MUST state that you were unfit to take the exam, not just that you visited the doctor that day. Without proper documentation, no marks will be given for a missed exam. No make-up quizzes will be given in case of absence.
5. Grading Scheme:
Your course grade is based on your overall performance through the entire semester. The relative weights for the final grade are the following:

CIS 345

Assignments/projects	15 %
Class Attendance and Participation	5%
Quizzes	20%
Midterm	30 %
Final Exam	30%

CIS 545

Assignments/projects	15 %
Class Attendance, Class participation & In-class Assignments	5%
Quizzes	20%
Midterm	25 %
Final Exam	25%
Presentation	10%

6. Grading Scale:

90 – 100% = A, 87- 89.9% = A-
83 – 86.9% = B+, 80-82.9 = B, 77-79.9 = B-
73 – 76.9% = C+, 70-72.9 = C
60 - 69.9% = D
<60% = F

Graduate students: D will be considered as F grade

Student Conduct: Students are expected to do their own work. Academic misconduct, student misconduct, cheating and plagiarism will not be tolerated. Violations will be subject to disciplinary action as specified in the CSU Student Conduct Code. A copy can be obtained by contacting Valerie Hinton Hannah, Judicial Affairs Officer in the Department of Student Life or at <http://www.csuohio.edu/studentlife/StudentCodeOfConduct.pdf>

It is important that all students do their own work on the exams and assignments. Failure to do so will result in a Failing Grade for the course.

Last day to drop: (Without W grade) Monday, July 9, 2018

Last day to withdraw: (With W grade) Sunday, July 29, 2018

Final Exam: Thursday, August 9, 2018 2:20 pm – 3:55 pm

Examination Policy: The use of books, class notes, cell phones, calculators, and any electronic devices is prohibited during the examinations. Any form of communication during examinations is prohibited.

Student work for Course Portfolio: The professor reserves the right to retain, for pedagogical reasons, either the original or a copy of your work submitted either individually or as a group project for this class. Students' names will be deleted from any retained items.

Student Responsibilities:

- Class participation and regular attendance are expected and are counted towards your grade.
- Students are responsible for bringing themselves up-to-date on class materials and assignments.

- Examinations will be a combination of material presented in lectures, class notes and handouts, and supplements posted on Blackboard.
- No make-up quizzes will be given in case of absence.
- Assignments and projects must be completed with the appropriate software and submitted by email to your TA (Name: Jungyuam Liang, Email: liangjy10@gmail.com) and instructor through blackboard course message. No handwritten assignments will be accepted.
- Turn off your cell phone or beeper during the class.
- Turn in your cell phone or any electronic devices to TA/instructor before the tests.

Course Schedule:

The tentative schedule of topics and their order of coverage is given below. Every effort will be made to follow the schedule, but topics covered may vary depending upon the progress made and an unavoidable emergency.

<i>Date</i>	<i>Chapter Title</i>	<i>Important Dates</i>
Week 1 07/02 – 07/06	Ch 1: Introduction to Operating Systems Ch 2: Processes and Threads	07/04: July 4 th Day: - No Class
Week 2 07/09 – 07/13	Ch 2: Processes and Threads	
Week 3 07/16 – 07/20	Ch 3: Memory Management Review for Quiz	07/18: Quiz I (Ch 1 & Ch 2)
Week 4 07/23 – 07/27	Ch 4: File Systems Review for Midterm Ch 5: Input/Output	07/24: Midterm (Ch 1, Ch 2, & Ch 3)
Week 5 07/30 – 08/03	Ch 7: Virtualization and the Cloud Ch 8: Multiple Processor Systems & Distributed Systems	08/02: Quiz II (Ch 4 & 5)
Week 6 08/06 – 08/10	Ch 9: Security Review for Final Exam	Final Exam: Thursday, August 9, 2018 2:20 pm – 3:55 pm