East West University
Department of Computer Science and Engineering
Course Outline
Spring 2021 Semester

Course Information

Course: CSE325 Operating Systems

Credit and Teaching Scheme:

	Theory	Laboratory	Total
Credits	3	1	4
Contact Hours	3 Hours/Week for 13 Weeks	2 Hours/Week for 13 Weeks	5 Hours/Week for 13 Weeks

Prerequisite: CSE106

Course Objective

This course introduces the principles and techniques for the design and implementation of operating systems. This course also emphasizes the implementation of various techniques required for management, scheduling, allocation and communication of resources used in operating system. Knowledge of this course will be needed as prerequisite knowledge for future courses such as CSE360 Computer Architecture and CSE452 Distributed Systems and Algorithms.

Course Outcomes (COs)

After completion of this course students will be able to:

CO1	**Interpret** and **use** different components of modern operating system for understanding their design goals.
CO2	**Interpret** and **use** different process management techniques for effective operating system design.
CO3	**Interpret** and **use** different memory and I/O management strategies for desirable resource utilization.
CO4	**Implement** different operating system techniques; **perform** and **demonstrate** these knowledge and **write** report for realistic system design.

Course Topics, Teaching-Learning Method, and Assessment Scheme

Course Topic	Teaching-Learning Method	CO	Assessment			
			C2	C3	T	Exam
Operating System Components	Lecture, Class Discussion, Discussion Outside Class with Instructor/ Teaching Assistant	CO1	2	5	7	Midterm Exam I (15)
Process and Thread	DO	CO1	3	5	8	
Scheduling Algorithms for Multi-tasking	DO	CO2		8	8	Midterm Exam II (20)
Inter Process Communication (IPC) and Synchronization	DO	CO2	4	8	12	
Deadlock Handling	DO	CO2	3	5	8	Final Exam (25)
Memory Management	DO	CO3		9	9	
File, I/O and Disk Management	DO	CO3		8	8	

Laboratory Experiments/Project

Experiment	Teaching-Learning Method	CO	Mark of Cognitive Learning Levels	Mark of Psychomotor Learning Levels	Mark of Affective Learning Levels		CO Mark
			C3	P2	P3	A2	

DOS &UNIX shell concepts such as command expansion and filters. DOS Command Prompt, Linux Shell, Process Commands	Discussion, Report Writing, Coding and Running Program	CO4	0.25	0.25	0.25	0.25	1
Process Management Linux, GCC.	Do	CO4	0.5	0.5	0.5	0.5	2
Thread Management Linux, GCC, POSIX	Do	CO4	0.5	0.5	0.5	0.5	2
Lab Exam	Individual Lab Exam	CO4	1.5	0.5	0.5	0.5	3
Process Scheduling Simulator. PS Simulator	Do	CO4	0.25	0.25	0.25	0.25	1
Threads Synchronization (Mutex & Semaphore).	Do	CO4	0.25	0.25	0.25	0.25	1
Memory Management	Do	CO4	0.25	0.25	0.25	0.25	1
File Management Or Disk Scheduling	Do	CO4	0.25	0.25	0.25	0.25	1
Lab Exam	Individual Lab Exam	CO4	1.5	0.5	0.5	0.5	3
Total			**5.25**	**3.25**	**3.25**	**3.25**	**15**

Mini Project

Mini Project	Teaching-Learning Method	CO	Mark of Cognitive Learning Levels	Mark of Psychomotor Learning Levels		Mark of Affective Learning Levels	CO Mark
			C3	P2	P3	A2	
Mini Lab Project including Report and Presentation	Group-based moderately complex Project with report writing, and	CO4	4	2	2	2	10

	oral/poster presentation						

Overall Assessment Scheme

Assessment Area	Course Outcomes				Assessment Area Mark
Assessment Area	CO1	CO2	CO3	CO4	
Class Participation					5
Class Test/Quiz					10
Midterm Exam - I	15				15
Midterm Exam -II		20			20
Final Exam		8	17		25
Laboratory Experiments and Lab Exam.				15	15
Mini Project				10	10
Total Mark	**15**	**28**	**17**	**25**	**100**

Grading System

Marks (%)	Letter Grade	Grade Point	Marks (%)	Letter Grade	Grade Point
97-100	A+	4.00	73-76	C+	2.30
90-96	A	4.00	70-72	C	2.00
87-89	A-	3.70	67-69	C-	1.70
83-86	B+	3.30	63-66	D+	1.30
80-82	B	3.00	60-62	D	1.00
77-79	B-	2.70	Below 60	F	0.00

Academic Code of Conduct

Academic Integrity:
Any form of cheating, plagiarism, personification, falsification of a document as well as any other form of dishonest behavior related to obtaining academic gain or the avoidance of evaluative exercises committed by a student is an academic offence under the Academic Code of Conduct and **may lead to severe penalties as decided by the Disciplinary Committee of the university.**

Special Instructions:
- Students are expected to attend all classes and examinations. A student MUST have at least 80% class attendance to sit for the final exam.
- Students will not be allowed to enter into the classroom after 20 minutes of the starting time.
- For plagiarism, the grade will automatically become zero for that exam/assignment.

- Normally there will be **NO make-up exam**. However, in case of **severe illness, death of any family member, any family emergency, or any humanitarian ground**, if a student misses any exam, the student MUST get approval of makeup exam by written application to the Chairperson through the Course Instructor **within 48 hours** from the exam time. Proper supporting documents in favor of the reason of missing the exam have to be presented with the application.
- For **final exam**, there will be NO makeup exam. However, in case of **severe illness, death of any family member, any family emergency, or any humanitarian ground**, if a student misses the final exam, the student MUST get approval of **Incomplete Grade** by written application to the Chairperson through the Course Instructor **within 48 hours** of the final exam time. Proper supporting documents in favor of the reason of missing the final exam have to be presented with the application. **It is the responsibility of the student to arrange an Incomplete Exam within the deadline mentioned in the Academic Calendar in consultation with the Course Instructor**.
- All mobile phones MUST be turned to silent mode during class and exam period.
- There is **zero tolerance for cheating** in exam. Students caught with cheat sheets in their possession, whether used or not; writing on the palm of hand, back of calculators, chairs or nearby walls; copying from cheat sheets or other cheat sources; copying from other examinee, etc. would be treated as cheating in the exam hall. The only penalty for cheating is **expulsion for several semesters as decided by the Disciplinary Committee of the university**.