

PDEA'S

MamasahebMohol College, PaudRoad ,Pune – 38

Computer Science Department

Course Name:SEM-II, PAPER I –Advanced Operating System (4 Credits, 48 lectures)

Course Outcomes: (CO-CSUT121)

Learning Outcomes	Teaching learning strategies /Activities	Assessment tasks/tools
CO121.1 Students learns Programming interface between Unix/Linux system.	Lecture method, Problem solving sessions, Peer Learning.	Assignment Test Exam
CO121.2 They understand the functions of Operating system.	Practical method	Practical Assignment Test Exam
CO121.3 They understand design and implementation of Operating system.	Lecture method , Practical method	Test Exam
CO 121.4 To develop and analyze simple concurrent programs using transactional memory and message passing, and to understand the trade-offs and implementation decisions	Lecture method , Practical method	Test Exam

Course Specific Outcome:

Index	Content	Course Specific OutcomeCSO
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1	Introduction to UNIX/Linux Kernel <ul style="list-style-type: none"> • System Structure, User Perspective, Assumptions about Hardware, Architecture of UNIX Operating System (TextBook-3: ChapterTopics:1.2,1.3,1.5,2.1)• Concepts of Linux Programming-Files and the Filesystem, Processes, Users and Groups, Permissions, Signals,Interprocess Communication 	Understands system structure, file system, Processes, user groups, permissions
2	File and Directory I/O <ul style="list-style-type: none"> • Bufferheaders,structureofth e buffer pool, scenarios for retrieval of a buffer, reading and writing disk blocks, inodes, structure of regular file, open, read,write, lseek, close, pipes, dup • open, creat, file sharing, atomic operations, dup2, sync, fsync, and fdatsync, fcntl, /dev/fd, stat, fstat, lstat, file types, Set-User-ID and Set-Group-ID, file access 	1. Understand file and directoryI/O. 2. Understands file system calls, permissions, ownership, access functions of file and directory.
3	Memory Management <ul style="list-style-type: none"> • The Process Address Space, Allocating Dynamic Memory, Managing Data Segment, Anonymous Memory Mappings, Advanced Memory Allocation, Debugging Memory Allocations, Stack-Based Allocations, Choosing a Memory Allocation Mechanism, Manipulating Memory, Locking Memory, Opportunistic• Swapping, Demand Paging 	Understands Memory mapping, allocation, debugging, manipulation, locking memory. Get the knowledge of swapping and demand paging

4	Signal Handling <ul style="list-style-type: none"> Signal concepts, signal function, unreliable signals, interrupted system calls, reentrant functions, SIGCLD semantics, reliable-signal technology, kill and raise, alarm and pause, signal sets, sigprocmask, sigpending, sigsetjmp and siglongjmp, sigsuspend, abort, system function revisited, sleep• Signal Concepts, Basic Signal Management, Sending a Signal, Reentrancy, Signal Sets, Blocking Signals, Advanced Signal Management, Sending a Signal with a Payload	Get the knowledge of signal concept, various different signals, advanced signals etc
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Course Name: SEM-II, PAPER II – Advanced OS (Practical)

Course	Course Specific Outcome(CSO)	Teaching Methodology	Reference
To create ‘n’ children on kernel mode	Kernel function	Practical	Internet, cprogram
To create file with hole	System call	Practical	Internet, cprogram
Demonstrate use of atexit function	Atexit() functions	Practical	Internet, cprogram
To implement Unix/linux command	By using fork(),pipe() etc.	Practical	Internet, cprogram
To perform Command Interpreter	By using count(),list() functions	Practical	Internet, cprogram
Redirection of standard output to file	Output functions	Practical	Internet, cprogram
Interprocess Communication	Shared Memory	Practical	Internet, cprogram