DISTRIBUTED OPERATING SYSTEM

UNIT -I

Distributed Computing Systems: Definition, Evolution, Models, Popularity of Distributed Computing Systems. Distributed Operating Systems: Definition, Design Issues, Introduction to Distributed Computing Environment, A TM Technology.
Message Passing: Introduction, Desirable Features of a Good Message Passing System, Issues in IPC, Synchronization, Buffering, Multidatagram Messages, Encoding and Decoding of Message Data, Process Addressing, Failure Handling, Group Communication.

UNIT-II

RPC: Introduction, Model, Transparency of RPC, Implementation, Stub Generation, RPC Messages, Marshalling Arguments and Results, Server Management, Semantics, Protocols, *CIS* Binding, Exception Handling, Security, Special Types of RPC, Heterogeneous Environment, Lightweight RPC, Optimization.
Distributed Shared Memory: Architecture of DSM Systems, Design and Implementation Issues, Granularity, Structure of Shared Memory Space, Consistency Models, Replacement Strategy, Thrashing, Other Approaches, Heterogeneous DSM, Advantages.

UNIT-III

Synchronization: Introduction, Clock Synchronization, Event Ordering, Mutual Exclusion, Deadlock, Election Algorithms.
Resource Management: Features of Global Scheduling Algorithm, Task Assignment Approach, Load Sharing Approach.

UNIT-IV

Process Management: Process Migration, Threads.
Distributed File Systems: Features, File Models, Accessing Models, File Sharing Semantics, File Caching schemes, Replication, Fault Tolerance, Atomic Transactions, design Principles.

UNIT –V

Naming System: Features, Fundamental Terminology and Concepts, System Oriented Names, Object Locating Mechanism, Human Oriented Names, Name Caches, Naming and Security.
Security: Potential Attacks to Computers, Cryptography, Authentication, Access Control, Digital Signatures, design principles.

TEXT BOOK:

Pradeep K. Sinha,"Distributed Operating System", PHI, 2002