Lecture Plan

Subject: **Distributed Operating Systems (CSE52111) [L-T-P = 3-1-0]**
Class: **II Semester M.Tech. (Computer Application)**

Sl. No.	Name of the Topics	Number of Lectures
1.	**Details of Traditional Operating System**	Prerequisite
2.	**Computer Networks**	Prerequisite
3.	**Introduction to Distributed Systems** Introduction to Distributed Computing System Models, Distributed Operating System, Difference between Network and Distributed System, Goals of Distributed System, Hardware Concept.	3
4.	**Message Passing** Desirable features, Issues in IPC, Synchronization, Buffering, Encoding and Decoding, Process Addressing, Failure Handling, Group Communication.	5
5.	**Remote Procedure Calls** RPC Model, Transparency of RPC, Implementation of RPC Mechanism, RPC Messages, Marshalling, Server Management (Stateful and Stateless Server), Parameter-Passing Semantics (Call-by-Value, Call-by-Reference), Call-Semantics, Communication Protocols for RPCs, Client-Server Binding, Special Types of RPCs.	5
6.	**Distributed Shared Memory** General Architecture of DSM Systems, Design and Implementation Issues of DSM, Structure of Shared-Memory Space, Consistency Models, Replacement Strategy, Thrashing, Advantages of DSM	5
7.	**Synchronization** Clock Synchronization, Event Ordering, Mutual Exclusion, Deadlock, Election Algorithms	5
8.	**Resource Management** Task Assignment Approach, Load-Balancing Approach, Load-Sharing Approach	5
9.	**Process Management** Process Migration, Threads	4
10.	**Distributed File Systems** File Models, File-Accessing Models, File-Sharing Semantics, File-Caching Schemes, File Replication	4
11.	**Security** Potential Attacks to Computer Systems, Cryptography, Authentication, Access Control, Digital Signatures	4
	TOTAL	40