BEIT801T   **DISTRIBUTED SYSTEMS**
                        (Theory Credit: 05)

Teaching Scheme: **Examination Scheme:**
Lecture: 4 Hours/week   Theory: T (U): 80 Marks T (I): 20 Marks
Tutorial: 1 Hour/week   Duration of University Exam. : 03 Hours
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UNIT I:
Introduction: Distributed Computing Models, Software Concepts, Hardware Concepts, The Client-Server model, Issues in design of a distributed operating system.

UNIT II:
COMMUNICATION: Introduction to Message Passing, Advantages and features of message passing, Message format, Message Buffering, Remote Procedure Call, Extended RPC Models, Remote Object Invocation, Message Oriented Communication.

UNIT III:
Processes And Synchronization: Threads, code migration, clock synchronization, logical clocks, global state, Election algorithms, mutual exclusion, Distributed transaction.

UNIT IV:
Distributed Deadlock Detection: System model, Resources vs. communication deadlocks, deadlock prevention, avoidance, detection and resolution, Centralized deadlock detection, distributed deadlock detection, path pushing and edge chasing algorithm

UNIT V:
Distributed Shared Memory: Introduction, General architecture of distributed shared memory, Design and implementation, Issues of DSM, Granularity, structure of shared memory space, consistency models, thrashing, advantages of DSM

UNIT VI:
Distributed File System: Introduction, Desirable features of good distributed file system, file models, file accessing, sharing, caching methods, file replication, fault tolerance, Case Study: CORBA(CORBA RMI and Services)

Text Books:
1. Andrew Tanenbaum, Maarten Van Steen, "Distributed System- Principals Paradigm", PHI Publication.
2. Singhal and Shivratri, "Advanced Concept in Operating Systems", McGraw Hill.