GUJARAT UNIVERSITY
K. S. SCHOOL OF BUSINESS MANAGEMENT
[Five Years' (Full-time) Integrated Degree Course]

Semester-9 [M.Sc. (CA & IT)]

Subject Code: - KS_C_CC-596
Subject Name: - Distributed Operating System
Course Credit: - 3.

Objective:
Distributed computing system is the platform for the virtualization and provides fundamental concepts related to distributed working environment. Also, It aims to build base for cloud computing concept. Concepts like resource utilization, file sharing semantics and message passing communication are robust in current computing scenarios.

Unit No.	Course Content	Weight-age (%)
1	**Distributed Systems:-** Distributed systems-definition, evolution, system models, advantages, design issues, Distributed computing environment **Computer Networks:-** ATM Technology. **Message passing:-**Synchronization, buffering, multi-datagram messages, process addressing, failure handling, group communication.	**(20%)**
2	**Remote Procedure Calls:-** The RPC model - transparency, implementation, stub generation, server management, parameter passing, RPC protocols, client/server binding, exception handling, security, etc.	**(20%)**
3	**Distributed shared memory:-** Architecture, design issues, granularity, consistency, placement strategy, thrashing etc. **Synchronization:-** Clock synchronization, event ordering, mutual exclusion, deadlock, election algorithms	**(20%)**
4	**Resource Management:-** Features of global scheduling algorithms, Task assignment approach, load balancing approach, load sharing approach, **Process Management:-** Process migration, Threads.	**(20%)**

| 5 | **Distributed File Systems**:-Desirable features of good distributed file system, file models, file accessing models, file sharing semantics, file caching schemes, file Replication, Fault tolerance, Atomic Transactions
Naming:- Desirable features of good naming system, human-oriented names, system-oriented names, object-locating mechanisms, name caches, | **(20%)** |

Recommended Lecture Scheme: Approximately 40 to 45 hours in a semester

Recommended Practical Scheme: Not Applicable

Assignment: Minimum five assignments should be given.

Main Reference Book:

1. Distributed Operating Systems: Concepts and Design, Pradeep Sinha, Prentice-Hall India,1997.