

# St. Ann's College of Engineering & Technology::Chirala

## Department of Computer Science and Engineering

### LESSON PLAN

Subject : DISTRIBUTED SYSTEMS

ACADEMIC YEAR: 2017-18

Faculty: M. BABU RAO

Year: IV CSE-A-II Sem.

#### Course Objectives:

1. Provides an introduction to the fundamentals of distributed computer systems.
2. Assuming the availability of facilities for data transmission.
3. IPC mechanisms in distributed systems.
4. Remote procedure calls.
5. Expose students to current technology used to build architectures to enhance distributed computing infrastructures with various computing principles.

#### Course Objectives:

1. Develop a familiarity with distributed file systems.
2. Describe important characteristics of distributed systems and the salient architectural features of such systems.
3. Describe the features and applications of important standard protocols which are used in distributed systems.
4. Gaining practical experience of inter-process communication in a distributed environment.

S. No.	Unit	Topic	No.of Classes
1	I	<b>Characterization of Distributed systems:</b> Introduction Examples of Distributed Systems Resource Sharing and The Web Challenges <b>System Models:</b> Introduction Architectural Models-Software Layers System Architecture Variations Interface and Objects Fundamental models-Interaction Model Failure Model Security Model	10
2	II	<b>Interprocess Communications:</b> Introduction The API for the Internet Protocols The Characteristics of Interprocess communications Sockets, UDP Datagram Communication TCP Stream communication External Data Representation and marshalling Client server communication Group communication IP Multicast- an implementation of Group communication Reliability and Ordering of Multi cast	7
3	III	<b>Distributed Objects and Remote Invocation:</b> Introduction communication between Distributed Objects Object model, Distributed Object Model Design Issues for RMI, Implementation of RMI Distributed garbage Collection Remote Procedure call Events and notifications Case Study JAVA RMI	8
4	IV	<b>Operation system Support:</b> Introduction The Operating System Layer Protection Process and Threads; Address Space Creation of a New Process Threads	6

5	V	<b>Distributed file Systems</b> IntroductionFile service ArchitecturePEER- to-PEER SystemsNapster and its LegacyPEER-to-PEER, Middle wareRouting Overlays Coordination and Agreement: IntroductionDistributed mutual ExclusionMulti cast communications	12
6	VI	<b>Transactions &amp; Replications:</b> IntroductionSystem Model And Group communicationConcurrency Controlling Distributed TransactionsDistributed Dead locks, Transaction RecoveryReplication-introduction, Passive (primary) ReplicationActive Replication	7
		<b>Total Classes</b>	50

### Text Books

1. Ajay D Kshemaklyani, Mukesh signal, "distributed Computing, Principles, Algorithms & Systems", Cambridge.
2. George Colouries ,Jean Dollimore. Tim Kindberg, "Distributed Systems Concepts and Design", Fourth Edition ,Pearson Publications.

**Faculty**

**HOD**