



Syllabus		
Unit No.	Contents	Mapped CO
I	<p><b>Characterization Of Distributed Systems:</b> Introduction, Examples of distributed systems, Trends in distributed systems, Focus on resource sharing, Challenges</p> <p><b>System Models:</b> Introduction, Physical models, Architectural models, Fundamental models.</p>	CO1,CO2
II	<p><b>Inter process Communication:</b> Introduction, The API for the Internet protocols, External data representation and marshalling, Multicast communication, Network virtualization: Overlay networks.</p> <p><b>Remote Invocation:</b> Introduction, Request-reply protocols, Remote procedure call, Remote method invocation.</p> <p><b>Indirect Communication:</b> Introduction, Group communication, Publish-subscribe systems, Message queues, Shared memory approaches.</p>	CO1,CO2
III	<p><b>Operating System Support:</b> Introduction, The operating system layer, Protection, Processes and threads, Communication and invocation, Operating system architecture, Virtualization at the operating system level.</p> <p><b>Distributed Objects and Components:</b> Introduction, Distributed objects, Case study: CORBA, From objects to components.</p>	CO1,CO3
IV	<p><b>Time And Global States:</b> Introduction, Clocks, events and process states, Synchronizing physical clocks, Logical time and logical clocks, Global states, Distributed debugging</p> <p><b>Coordination And Agreement:</b> Introduction, Distributed mutual exclusion, Elections, Coordination and agreement in group communication, Consensus and related problems</p>	CO1,CO4
V	<p><b>Distributed Transactions:</b> Introduction, Flat and nested distributed transactions, Atomic commit protocols, Concurrency control in distributed transactions, Distributed deadlocks, Transaction recovery</p> <p><b>Replication:</b> Introduction, System model and the role of group communication, Fault-tolerant services</p>	CO1,CO4

Learning Resources
<b>Text Book</b>
1. Distributed System: Concepts and Design, Coulouris, Dollimore, Kindberg, 2006, Pearson Education.
<b>References</b>
1. Distributed Operating System, Tanenbaum S, 2005, Pearson Education.
2. Distributed System: Concepts and Design, P K Sinha, 2004, PHI.
3. Advanced Concepts in Operating Systems, Mukesh Singhal & Niranjana G Shivaratri, 2001, Tata McGraw Hill.
<b>e-Resources and other Digital Material</b>
1. <a href="https://www.cdk5.net/wp/">https://www.cdk5.net/wp/</a>
2. <a href="http://www.distributedsystemscourse.com">www.distributedsystemscourse.com</a>
3. <a href="https://ocw.mit.edu/">https://ocw.mit.edu/</a>