

Branch Name:	Computer Engineering
Program Code:	ET103
Course Title:	Distributed System Practical
Course Code:	2ET1030601P
Pre-requisite Course:	Data Structure and Algorithm, Operating System, Computer Network

Course Objectives: A distributed system is a system whose components are located on different networked computers, which communicate and coordinate their actions by passing messages to one another. The components interact with one another in order to achieve a common goal. Three significant characteristics of distributed systems are: concurrency of components, lack of a global clock, and independent failure of components. From this course, students may learn foundations of distributed systems, idea of peer to peer services and file system and security issues in distributed system.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Course Contents:

Sr.No

Practical Exercise

1. Write a Program to implement concurrent echo client server application.
2. Write a Program to implement concurrent day-time client-server application.
3. Write Programs to implement Remote Procedure call.
4. Design XML Schema and XML instance document
5. Write the Programs for Thread Programming in JAVA.
6. Implement Network File System (NFS).
7. Creation of a BPEL (Business Process Execution Language) Module and a Composite Application.
8. Create CORBA based server-client application.
9. Study of Web Service Programming
10. Study of open source key management tool.

Reference Books:

1. UNIX Network Programming by W. Richard Stevens, Prentice Hall Publication
2. Distributed Computing: Concepts & Applications : by M.L.Liu Addison Wiselly
3. SOA in Practice: The Art of Distributed System Design by Nicolai M. Josuttis, Prentice Hall Publication

List of Open-Source Software/learning website:

1. <https://github.com/theanalyst/awesome-distributed-systems>
2. <http://nptel.ac.in/courses/106106107/>

Course Learning Outcomes (CLO):

Course Outcomes	Description	Bloom's Taxonomy Level
COL1	Understand architecture and communication systems in Distributed Systems	2. Understanding
COL2	Understand synchronization and various election algorithms in Distributed Systems	2. Understanding 5. Applying
COL3	Analyze various consistency and replication protocols and methods	3 Analyze 5. Applying
COL4	Recognize security threats and apply cryptography methods for security in Distributed Systems	2. Understanding 3. Applying 5. Creating
COL-5	Understand various types of Distributed Systems	2. Understanding 5. Creating

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	M	M	M		L						L		M			
CLO2	L	H	H										M	H	M	
CLO3		H	H	H	M						M		M	M		
CLO4	H				L										H	
CLO5		M	M	L										H	H	

H: High, M: Medium, L: Low