3/4 B.Tech - SECOND SEMESTER

IT6T5FE3   **DISTRIBUTED OPERATING SYSTEMS**   **Credits:3**
Lecture: 3 Periods/week   **Internal assessment: 30 marks**
Practice/Interaction: 1Period/week   **Semester end examination: 70 marks**

Objectives:

- To provide an overview of the concepts of distributed operating systems.
- To discuss about different types of communication procedures in a distributed operating systems environment.
- To explain the synchronization mechanism.
- To know about processor allocation and threads.
- To demonstrate the distributed file system.

Outcomes:

Students will be able to

- Understand the concepts of distributed operating systems.
- Gain knowledge on different communication protocols.
- Understand the concepts of synchronization and deadlocks.
- Gain knowledge on threads, processor allocation and scheduling algorithms.
- Understand the distributed file system.

Prerequisite:

   Operating System Concepts

Syllabus:

Unit -I

Introduction to distributed systems:
Goals, Hardware concept, Software concept, Design issues.

Unit -II

 Communication in Distributed systems:
Layered protocols, The client-server model, Remote procedure call, Group communication

Unit- III

Synchronization in Distributed systems:
Clock Synchronization, Mutual Exclusion, Election Algorithms, Deadlocks in distributed systems

Unit -IV

Processes and Processors in distributed systems:
Threads, System models, Processor Allocation, scheduling in distributed systems

Unit- V

Distributed File Systems:
Distributed file system design, trends in distributed file systems, What is shared memory, case study- MACH

Text book:
1. Distributed Operating Systems, Andrew S.Tanenbaum, Pearson education.

Reference Books:
1. Abraham Silberschatz, Peter B. Galvin, G. Gagne, " Operating System Concepts", 8th Eition, Addison Wesley publishing Co.
2. Andrew S. Tanenbaum, "Modern Operating Systems", 2001.
3. Mukesh Singhal and N.G. Shivaratri, "Advanced Concepts in Operating Systems", McGraw – Hill, 2000.

e-Learning Resources:
1. http://nptel.ac.in/downloads/106106107/
2. http://www.youtube.com/watch?v=hNOEL3SM9No&list=PL765D8EEE5113BA3E
3. http://www.jntuk-coeerd.in/