

## Distributed Computing

Code: **IT 703 D**

Contacts: 3L

**Credits: 3**

### Fundamentals [4L]

Introduction, Models and Features, Concept of distributed operating system, Issues in design of a distributed operating system.

### Message Passing [8L]

Good message passing system, IPC, Synchronization, Buffering, Multi datagram messages, Encoding & decoding techniques, Process addressing, Failure handling, Group communication; Remote procedure calls (RPC) - Models, Communication protocols, RPC, Lightweight RPC.

### Distributed Shared Memory [4L]

Architecture, Thrashing, Granularity, Advantages.

### Synchronization [4L]

Introduction, Clock Synchronization, Event handling, Mutual Exclusion; Deadlock – Conditions, Avoidance, Prevention, Recovery.

### Resource & process Management [8L]

Features of a good scheduling algorithm, Task assignment approach, Load balancing & load sharing approach, Introduction to process management, Process migration, Threads.

### Distributed Files Systems [8L]

Introduction, Features, Models, Accessing models; sharing Semantics & caching schemes, replication, Fault Tolerance, Atomic transactions.

### Naming [5L]

Introduction, Features, Fundamental Terminologies & concepts, System oriented names, Human oriented names, Name caches.

### Security [4L]

Potential attacks to computer system, Cryptography, Authentication, digital signatures, Access Control.