

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Computer Engineering (IT Systems and Network Security)

Semester: I

Subject Name: **Parallel programming (Elective I & II- Group 1)**

Subject Code: **715106**

Course Content:

Concepts of parallelism, Introduction Amdahl's law and Gustafson's law, Dependencies, Interconnection networks, Race conditions, mutual exclusion, synchronization, and parallel slowdown, Fine-grained, coarse-grained, and embarrassing parallelism, Types of parallelism, Bit-level parallelism, Instruction-level parallelism Data parallelism, Task parallelism, Classes of parallel computers, Multicore computing, Symmetric multiprocessing, Distributed computing, Cluster computing, Massive parallel processing, Grid computing Specialized parallel computers.

Text Book:

1. **Parallel Programming:**
Techniques And Applications Using Networked Workstations And Parallel Computers by Barry Wilkinson, Pearson

Reference Book:

1. **Parallel Programming:**
For Multicore And Cluster Systems, I/r, Gudula Ranger, Springer