C-DAC &Gujarat Technological University
M.E. Computer Engineering
(Wireless Mobile Computing)
Gandhinagar

Semester: I

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

Subject Code: 2715308

Course Content:

Introduction to Parallel Architectures, Why Parallel Architectures, Diversity and Convergence of Parallel Architectures, Fundamental Design Issues, Parallel Programming and Workload-Driven Evaluation The Parallelization Process, Workload-Driven Evaluation, Cache Coherent Bus-Based Multiprocessors Cache Coherence and Bus Snooping ,Design Space for Snooping Protocols, Single-Level Caches with an Atomic Bus , Multilevel Cache Hierarchies , Split-Transaction, Bus Design, Memory Consistency Sequential Consistency, Relaxed memory consistency models, Synchronization Mutual Exclusion, Event, and Barrier Synchronization, Algorithms for locks and Barriers Directory-Based Cache Coherent Multiprocessors, Directory-Based Approaches, Memory-Based Directory Protocols, Cache-Based Directory Protocols, Hierarchical Coherence, Vector Processors Vector Programming Model, Vector Instruction Set and its advantages, Vector Arithmetic Execution, Vector Memory System, Interconnection Networks, Organizational Structure, Topologies, Routing, Switch Design, Flow Control, Communication Performance

Text Book:

1. Fundamentals of Parallel Processing by Jordan Harry, Alaghband Gita/PHI Learning

Reference Books:

1. Introduction to Parallel Processing by Prakash P. Ravi/PHI learning
1. 2. Fundamentals of Parallel Processing by Jordan/Pearson