

GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. SEMESTER : VIII
INFORMATION & COMMUNICATION TECHNOLOGY

Subject Name: Advance networking protocols

Subject Code: 173202

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
4	0	2	6	70	30	30	20

Sr No	Course Contents	Total Hrs
1	Parallel Computing at a Glance: Motivating Parallelism, Scope of Parallel Computing, Implicit Parallelism: Trends in Microprocessor Architectures, Limitations of Memory System Performance, Dichotomy of Parallel Computing Platforms, Architecture of an Ideal Parallel Computer	04
2	Distributed Systems at a glance: Introduction, Distributed computing models, software concepts, Design Issues in distributed systems, Client Server Model, WWW 1.0 and 2.0.	03
3	Latest Trends in Communication: Spread – Spectrum Technology, CDMA versus GSM, Third Generation Networks, Wi-Fi V/s 3G, Mobile ad Hoc networks, voice over Internal protocol and convergence, Mobile VoIP.	05
4	Cluster Computing at Glance : Ease of Computing, Scalable Parallel Computer Architecture, Towards Low Cost Parallel Computing & Motivation, Windows opportunity, A Cluster Computer And Its Architecture, Cluster Classification, Commodity Components for Clusters, Network Services/Communication SW, Cluster Middleware and Single Systems Image, Resource management & Scheduling (RMS), Programming environment Tools, Cluster Applications, Representative Cluster Systems, Clusters of SMPS	04
5	Administration and Scalable Services Security, System Monitoring, System Tuning, Environment, Resource sharing, Resource sharing enhanced locality	04
6	Introduction to Grid and its Evolution Beginning of the grid, building blocks of the grid, grid applications and application middleware, future of the grid, Evolution of the Grid: first, second and third generation.	05
7	Implementing Production Grids: Grid context, Grid support for collaboration, Building an initial multisite, computational and data grid, cross site trust management.	04
8	Anatomy of Grid : Virtual organizations, Nature of grid architecture, Grid architecture description and practice, intergrid protocols, relation to other technologies, other perspective on grids.	06
9	Introduction to Cloud Computing :	04

	Defining Clouds. Cloud Providers, Consuming Cloud Services, Cloud Models – IaaS, PaaS, SaaS, Inside the cloud, Administering cloud services, technical interface, cloud resources	
10	Nature of cloud : Tradition data center, cost of cloud data center, Scaling computer systems, economics, cloud work load, managing data on clouds, public, private and hybrid clouds.	08
11	Cloud elements : Infrastructure as a service, Platform as a Service, Software as a Service.	05

Text Books:

1. Introduction to Parallel Computing, Ananth Grama, Anshul Gupta, George Karypis, Vipin Kumar, By Pearson Publication.
2. Distributed Computing, Sunita Mahajan and Seema Shah, Oxford University Press.
3. Mobile Computing , Asoke K Telukder, Roopa R Yavagal, TMH.
4. High Performance Cluster Computing, Volume 1, Architecture and Systems,Rajkumar Buyya, Pearson Education.
5. Grid Computing – Making the Global Infrastructure A Reality, Edited by Berman,Fox and Hey, Wiley India.
6. Cloud Computing for Dummies, Hurwitz, Bllor, Kaufman, Halper, Wiley India.

Reference Books:

1. Introduction To Parallel Programming - By Steven Brawer.
2. Distributed Systems: Principles and Paradigms, Taunenbaum.
3. Principles of Mobile Computing, - Hansmann, Merk, Nicklous and Stober, Springer.
4. Cloud Computing, A Practical Approach, Anthony Velte, Toby Velte, Robert Elsenpeter, McGrawHill.
5. Clouding Computing with Windows Azure Plaform, Roger Jennings, Wiley India.
6. Virtualization for Dummies – Bernand Golden, Wiley India.
7. Cloud Computing – Bible, Berrie Sonsisky, Wiley (India).
8. Cloud Security – Ronald Krutz, Wiley (India).