

**UNIT I CONCEPTS AND ARCHITECTURE 9**

Introduction-Parallel and Distributed Computing-Cluster Computing-Grid Computing-Anatomy and Physiology of Grid- Web and Grid Services-Grid Standards - OGSA-WSRF - Trends, Challenges and applications.

**UNIT II GRID MONITORING 9**

Grid Monitoring Architecture (GMA) - An Overview of Grid Monitoring Systems- R-GMA - GridICE – MDS- Service Level Agreements (SLAs) - Other Monitoring Systems-Ganglia, GridMon, Hawkeye and Network Weather Service.

**UNIT III GRID SECURITY AND RESOURCE MANAGEMENT 9**

Grid Security-A Brief Security Primer-PKI-X509 Certificates-Grid Security-Grid Scheduling and Resource Management, Gridway and Gridbus Broker-principles of Local Schedulers- Overview of Condor, SGE, PBS, LSF-Grid Scheduling with QoS.

**UNIT IV DATA MANAGEMENT AND GRID PORTALS 9**

Data Management-Categories and Origins of Structured Data-Data Management Challenges-Architectural Approaches-Collective Data Management Services-Federation Services-Grid Portals-Generations of Grid Portals.

**UNIT V GRID MIDDLEWARE 9**

List of globally available Middlewares - Case Studies-Recent version of Globus Toolkit and gLite - Architecture, Components and Features. Features of Next generation grid.

**REFERENCES:**

1. Ian Foster, Carl Kesselman, The Grid 2: Blueprint for a New Computing Infrastructure, Elsevier Series, 2004.
2. Vladimir Silva, Grid Computing for Developers, Charles River Media, January 2006.
3. Parvin Asadzadeh, Rajkumar Buyya, Chun Ling Kei, Deepa Nayar, and Srikumar Venugopal, [Global Grids and Software Toolkits: A Study of Four Grid Middleware Technologies](#), High Performance Computing: Paradigm and Infrastructure, Laurence Yang and Minyi Guo (editors), Wiley Press, New Jersey, USA, June 2005.
4. [Jarek Nabrzyski](#), [Jennifer M. Schopf](#), [Jan Weglarz](#), Grid Resource Management: State of the Art and Future Trends , (International Series in Operations Research & Management Science), Springer; First edition, 2003
5. Srikumar Venugopal, Krishna Nadiminti, Hussein Gibbins and Rajkumar Buyya, [Designing a Resource Broker for Heterogeneous Grids](#), Software: Practice and Experience, Wiley Press, New York, USA, 2008.
6. [Fran Berman](#) , [Geoffrey Fox](#), [Anthony J.G. Hey](#), Grid Computing: Making The Global Infrastructure a Reality,Wiley, 2003
7. [Maozhen Li](#) , [Mark Baker](#) , The Grid: Core Technologies, Wiley, 2005
8. [Joshy Joseph](#) , [Craig Fellenstein](#) Grid Computing, IBM Press, 2004
9. [Borja Sotomayor](#) , [Lisa Childers](#), Globus Toolkit 4 : Programming Java Services , The Elsevier Series in Grid Computing, Morgan Kaufmann, 2005