



STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Approved by AICTE, New Delhi | Affiliated to Osmania University ,Hyderabad)
Address : Chapel Road, Abids ,Hyderabad

CS 563

GRID COMPUTING

UNIT-I

Introduction to Grid Computing : Grid Computing Concept, History of Distributed Computing Computational Grid Applications, Grid Computing Infrastructure Development, Grid Computing Software Interface

Job Submission : Introduction, Globus Job Submission. Transferring Files

UNIT-II

Schedulers: Scheduler Features, Scheduler Examples, Grid Computing Meta-Schedule Distributed Resource Management Application (DRMAA)

Security Concepts: Introduction, Symmetric Key Cryptography, Asymmetric Key Cryptography (Public Key Cryptography), Public Key Infrastructure. Systems/Protocols Using Security Mechanisms

Grid Security: Introduction, Grid Security Infrastructure (GSI). Delegation, Higher-Level Authorization Tools

UNIT-III

System Infrastructure I : Web Services: Service-Oriented Architecture, Web Services and Service Implementation

System Infrastructure II : Grid Computing Services: Grid Computing and Standardization Bodies Interacting Grid Computing Components, Open Grid Services Architecture (OGSA), WSRF,

User-Friendly Interfaces : Introduction Grid Computing Workflow Editors, Grid Portals

UNIT-IV

Grid-Enabling Applications: Introduction, Parameter Sweep, Using an Existing Program on Multiple Grid Computers, Writing an Application Specifically for a Grid, Using Multiple Grid Computers to Solve a Single Problem

UNIT-V

Case Studies:

Globus : Overview of Globus Toolkit 4, Installation of Globus, GT4 Configuration; Main Components and programming Model ,Using Globus

gLite : Introduction ,Internal Workings of gLite ,Logging and Bookkeeping (LB) , Security Mechanism UsinggLite

Resource management using Gridway and Gridbus

Scheduling using Condor, SGE, PBS, LSF Grid scheduling with QoS.

Suggested Reading:

1. Barry Wilkinson, "Grid Computing Techniques and Applications", CRC Press, 2010.
2. Frederic Magoules, ; lie Pan, Kiat.-An Tan, Abhinit Kumar, "Introduction to Grid Computing" CRC Press 2009'.
3. Vladimir Silva, "Grid Computing for Developers", Dreamtech Press, 2006.
4. Ian Foster, carl Kesselman, "The Grid 2 :: Blueprint for a new computing Infrastructure", Elsevir Series, 2004
5. Fran Berman. Geoffrey Fox, Anthony J.G Hey. "Grid Computing: Making the Global Infrastructure a Reality", Wiley, 2003.
6. Joshey Joseph, Craig Fellenstein, "Grid computing", IBM Press, 2004.