

Value Added Course, 2022-23 on “CLOUD COMPUTING”

DEPARTMENT OF COMPUTER SCIENCE, BJB AUTONOMOUS COLLEGE, BHUBANESWAR

UNIT-I

Overview of Computing Paradigm, Recent trends in Computing, Grid Computing, Cluster Computing, Distributed Computing, Utility Computing, Cloud Computing, Evolution of cloud computing, History of Cloud Computing, Cloud service providers Properties, Characteristics & Pros and Cons of Cloud Computing, Benefits of Cloud Computing.

UNIT-II

Cloud Computing Architecture: Cloud computing stack Comparison with traditional computing architecture (client/server), Services provided at various levels, How Cloud Computing Works, Role of Networks in Cloud computing, protocols used, Infrastructure as a Service(IaaS), Platform as a Service(PaaS), Software as a Service(SaaS) Deployment Models: Public cloud, Private cloud, Hybrid cloud, Community cloud.

UNIT-III

Virtualization - Introduction to virtualization, Different approaches to virtualization, Hypervisors, Machine Image, Virtual Machine(VM) Process VM vs System VM, Resource Virtualization: Server, Storage, Network Full Virtualization vs Para Virtualization, Operating System Support for Virtualization Virtual Machine(resource) Provisioning and Manageability VM Placement, VM Migration, Amazon EC2, Google App Engine, Microsoft Azure.

UNIT-IV

Cloud Security - Cloud Security Risks, Trust, Operating System Security, VM Security, Security of Virtualization, Security Risks Posted by Shared Images, Security Risks Posted by Management OS, Data privacy and security Issues, Identity & Access Management, Access Control, Authentication in cloud computing.

Text Books

1. Cloud Computing Bible, Barrie Sosinsky, Wiley-India, 2010.
2. Cloud Computing: Principles and Paradigms, Author Edited By Raj Kumar Buyya, James Broberg, Andrzej M. Goscinski, Publisher John Wiley Edition 1st Edition, 2011.
3. Distributed and Cloud Computing Author Kai Hawang, Geoffrey C. Fox, Jack J. Dongarra Publisher Elsevier Edition 1st Edition, 2011.
4. Dan C Marinescu, Cloud Computing, Theory and Practice, MK Elsevier.