21CSE18	HIGH PERFORMANCE COMPUTING	L	T	P	C
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Course Objectives

- To Study various computing technology architecture.
- To know Emerging trends in computing technology.
- To highlight the advantage of deploying computing technology.

UNIT I	CLUSTER COMPUTING AND ITS ARCHITECTURE	9 Hours

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)

UNIT II	CLUSTER SETUP AND ADMINISTRATION	9 Hours

Introduction-Setting up the cluster-Security-System Monitoring-System Tuning

UNIT III	INTRODUCTION TO GRID AND ITS EVOLUTION	9 Hours

Introduction to Grid and its Evolution-Beginning of the Grid-Building blocks of Grid-Grid Application and Grid Middleware-Evolution of the Grid: First, Second & Third Generation

UNIT IV	INTRODUCTION TO CLOUD COMPUTING	9 Hours

Defining Clouds-Cloud Providers-Consuming Cloud Services-Cloud Models – Iaas, Paas, SaaS -Inside the cloud-Administering cloud services-Technical interface-Cloud resources

UNIT V	NATURE OF CLOUD & CLOUD ELEMENTS	9 Hours

Tradition Data Center - Cost of Cloud Data Center - Scaling computer systems-Cloud work load-Managing data on clouds -Public, private and hybrid clouds -Infrastructure as a service -Platform as a service-Software as a service

UNIT VI	CASE STUDY	

Case Study on Latest real time applications

TOTAL PERIODS: 45

Course Outcomes:

- On successful completion of the course, the student will be having the basic knowledge of computing technology.
- Student will be able to understand architecture of computing technology.
- Student will be able to know cloud computing service models.
- Know about emerging trends in computing technology.
- Student will be able to know big data and hadoop architecture.

Text books:

1. High Performance Cluster Computing, Volume 1, Architecture and Systems, Rajkumar Buyya, Pearson Education.
2. Berman, Fox and Hey, Grid Computing – Making the Global Infrastructure a Reality, Wiley India.
3. Hurwitz, Bllor, Kaufman, Halper, Cloud Computing for Dummies, Wiley India.

Reference Books:

1. Ronald Krutz, Cloud Security, Wiley India.
2. Cloud Computing, A Practical Approach, Anthony Velte, Toby Velte, Robert Elsenpeter, McGrawHill.