CLOUD COMPUTING

(Professional Elective- IV)

B.Tech. IV Year I Semester								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maxumum Marks**		
CS4110PE	**Elective**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		3	**0**	**0**	**3**	**25**	**75**	**100**
Contact classes: 60	**Tutorial Classes : NIL**	**Practical classes : NIL**				**Total Classes :60**		

Pre-requisites:

1. **A course on"Computer Networks"**
2. **A course on "Operating Systems"**
3. **A course on "Distributed Systems"**

Course Objectives:

- This course provides an insight into cloud computing
- Topics covered include-distributed system models, different cloud service models, service-oriented architectures, cloud programming and software environments, resource management.

Course Outcomes:

- Ability to understand various service delivery models of a cloud computing architecture.
- Ability to understand the ways in which the cloud can be programmed and deployed.
- Understanding cloud service providers.

COURSE SYLLABUS

UNIT- I

Computing Paradigms: High-Performance Computing, Parallel Computing, Distributed Computing,Cluster Computing, Grid Computing, Cloud Computing, Bio computing, Mobile Computing, Quantum Computing, Optical Computing, Nano computing.

UNIT- II

Cloud Computing Fundamentals: Motivation for Cloud Computing, The Need for Cloud Computing, Defining Cloud Computing, Definition of Cloud computing, Cloud Computing Is a Service, Cloud Computing Is a Platform, Principles of Cloud computing, Five Essential Characteristics, Four Cloud Deployment Models

UNIT- III

Cloud Computing Architecture and Management: Cloud architecture, Layer ,Anatomy of the Cloud, Network Connectivity in Cloud Computing, Applications, on the Cloud, Managing the Cloud, Managingthe Cloud Infrastructure Managing the Cloud application, Migrating Application to Cloud, Phases of Cloud Migration Approaches for Cloud Migration.

UNIT- IV

Cloud Service Models: Infrastructure as a Service, Characteristics of IaaS. Suitability of IaaS, Prosand Cons of IaaS, Summary of IaaS Providers, Platform as a Service, Characteristics of PaaS, Suitability of PaaS, Pros and Cons of PaaS, Summary of PaaS Providers, Software as a Service,Characteristics of SaaS, Suitability of SaaS, Pros and Cons of SaaS, Summary of SaaS Providers,Other Cloud ServiceModels.

UNIT-V

Cloud Service Providers: EMC, EMC IT, Captiva Cloud Toolkit, Google, Cloud Platform, CloudStorage, Google Cloud Connect, Google Cloud Print, Google App Engine, Amazon Web Services,Amazon Elastic Compute Cloud, Amazon Simple Storage Service, Amazon Simple Queue ,service,Microsoft, Windows Azure, Microsoft Assessment and Planning Toolkit, Share Point, IBM, Cloud Models, IBM Smart Cloud, SAP Labs, SAP HANA Cloud Platform, Virtualization Services Provided by SAP, Salesforce, Sales Cloud, Service Cloud: Knowledge as a Service, Rackspace, VMware, Manjrasoft, Aneka Platform

TEXTBOOK:

1.Essentials of cloud Computing : K. Chandrasekhran, CRC press, 2014

REFERENCE BOOKS:

1. Cloud Computing: Principles and Paradigms by Raj kumar Buyya, James Broberg and Andrzej M.Goscinski , Wiley,2011.
2. Distributed and Cloud Computing, Kai Hwang, Geoffery C.Fox, Jack J.Dongarra, Elsevier,2012.
3. Cloud Security and Privacy :An Enterprise Perspective on Risks and Compliance, Tim Mather,Subra Kumaraswamy, Shahed Latif , O'Reilly, SPD,rp2011.