23CS32T2 –CLOUD COMPUTING

Course Category:	Professional Core	**Credits:**	3
Course Type:	Theory	**Lecture-Tutorial-Practical:**	3-0-0
Prerequisite:	• Knowledge in Cloud Computing	**Sessional Evaluation:** **Univ. Exam Evaluation:** **Total Marks:**	30 70 100
Course Objectives:	**Students undergoing this course are expected:**		
	• To explain the evolving computer model called cloud computing. • To introduce the various levels of services that can be achieved by cloud. • To describe the security as pects in cloud.		

Course Outcomes:	**Upon successful completion of the course, the students will be able to:**	
	CO1	Ability to create cloud computing environment
	CO2	Ability to design applications for Cloud environment.
	CO3	Design & develop back up strategies for cloud data based on features.
	CO4	Use and Examine different cloud computing services..
	CO5	Apply different cloud programming model as perneed.
Course Content:	**UNIT-I** **Basics of Cloud computing:** **Introduction to cloud computing:** Introduction, Character is tics of cloud computing, Cloud Models, Cloud Services Examples, Cloud Based services and applications **Cloud concepts and Technologies:** Virtualization, Load balancing, Scalability and Elasticity, Deployment, Replication, Monitoring, Software defined, Network function virtualization, Map Reduce, Identity and Access Management, services level Agreements, Billing. **Cloud Services and Plat forms:** Compute Services, Storage Services, Data, base Services, Application services, Content delivery services Analytics Services, Deployment and Management Services, Identity and Access Management services, Open Source Private Cloud software **UNIT-II** **Hadoop and Python**: **Hadoop Map Reduce:** Apache Hadoop, Hadoop Map Reduce Job Execution, Hadoop Schedulers, Hadoop Cluster set up. **Cloud Application Design:** Reference Architecture for Cloud Applications, Cloud Application Design Methodologies, Data Storage Approaches. Python Basics: Introduction, Installing Python, Python data Types & Data Structures,Controlflow,Function,Modules,Packages,Filehandling,Date/TimeOperations,	

	Classes. **UNIT-III** **Python for Cloud computing Lecture :** **Python for Cloud:** Python for Amazon web services, Python for Google Cloud Platform, Python for windows Azure, Python for Map Reduce, Python packages of Interest, Python web Application Frame work, Designing a REST ful web API. **Cloud Application Developmentin Python:** Design Approaches, Image Processing APP, Document Storage App, Map Reduce App, Social Media Analytics App. **UNIT-IV** **Python for Cloud:** **Big Data Analytics:** Introduction, Clustering Big Data, Classification of Big data Recommendation of Systems. **Multimedia Cloud**: Introduction, Case Study: Live video Streaming App, Streaming Protocols, case Study: Video Trans coding App. **Cloud Application Bench marking and Tuning:** Introduction, Work load Character is tics, Application Performance Metrics, Design Considerations for a Bench marking Methodology, Bench marking Tools, Deployment Prototyping, Load Testing & Bottleneck Detection case Study, Hadoop bench marking case Study **UNIT-V** **Applications and Issues in Cloud**: **Cloud Security:** Introduction, CSA Cloud Security Architecture, Authentication, Authorization, Identity Access Management, Data Security, Key Management, Auditing. **Cloud for Industry, Health care & Education:** Cloud Computing for Health care, Cloud computing for Energy Systems, Cloud Computing for Transportation Systems, Cloud Computing for Manufacturing Industry, Cloud computing for Education. **Migrating in to a Cloud:** Introduction, Broad Approaches to migrating into the cloud, the seven– step model of migration in to a cloud. **Organizational readiness and Change Management in The Cloud Age:** Introduction, Basic concepts of Organizational Readiness, Drivers for changes: A frame work to comprehend the competitive environment, common change management models, change management maturity models, Organizational readiness self– assessment. **Legal Issues in Cloud Computing:** Introduction, Data Privacy and security Issues, cloud contracting models, Jurisdictional issues raised by virtualization and at a location, commercial and business considerations, Special Topics
Text Books & References Books:	**TEXTBOOKS:** 1. Cloud computing Ahands - on Approach ǁBy Arshdeep Bahga, Vijay Madisetti, Universities Press, 2016 2. Cloud Computing Principles and Paradigms: By RajKumar Buyya, James Broberg, Andrzej Goscinski, Wiley, 2016 **REFERENCE BOOKS:** 1. Masterin g Cloud Computing by Rajkumar Buyya, Christian Vecchiola, S Thamarai Selvi, TMH 2. Cloud computing AHands-On Approach by Arshdeep Bahga and Vijay Madisetti. 3. Cloud Computing: A Practical Approach, Anthony T.Velte, To by J.Velte, Robert

	Elsenpeter, Tata Mc Graw Hill, rp 2011. 4. Enterprise Cloud Computing, Gautam Shroff, Cambridge University Press, 2010. 5. Cloud Application Architectures: Building Applications and Infrastructure in the Cloud, George Reese,O_Reilly, SPD, rp 2011. 6. Essentials of Cloud Computing by K.Chandrasekaran. CRC Press.
E-Resources:	1. Cloud computing – Course (nptel.ac.in)