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| **CAT-752** | | **CLOUD COMPUTING WITH AZURE** | | **L** | **T** | **P** | **C** |
| Total Contact Hours :45 | | 3 | 1 | **-** | 3.5 |
| Applicable to which branch: MCA | |
| Prerequisite: Basic knowledge of Internet | | | | | |
| **Marks** | | | | | | | |
| Internal :40 | | | External:60 | | | | |
| **Course Objective** | | | | | | | |
| The course discusses the concepts and features related to Virtualized datacenter and cloud, Information storage security and design, storage network design and cloud optimized storage. | | | | | | | |
| **Unit** | **Course Outcome** | | | | | | |
|  | Evaluate the deployment of web services from cloud architecture . | | | | | | |
|  | Compare and contrast the economic benefits delivered by various cloud models based on application requirements, economic constraints and business requirements. | | | | | | |
|  | Critically analyze case studies to derive the best practice model to apply when developing and deploying cloud based applications | | | | | | |
|  | Analyze the role technology plays in the design of a storage solution in a cloud architecture | | | | | | |

**Content of the Syllabus**

**UNIT I**

**Cloud Computing Fundamentals**: Computing paradigms, Definition, NIST Model, Types of Cloud Computing: Public, Private, Hybrid, Community, Layered Architecture of Cloud Computing and compare it with traditional Client/Server architecture. Pros and Cons of Cloud Computing, applications

**Cloud Service Management:** Service Level Agreement, Service Provider, Role of service provider in Cloud computing, Scalability: Scale up and Scale Down Services. Cloud Economics and adopt services using by Amazon, Google App Engine, Microsoft, etc.

**Microsoft Azure:** Introduction, architecture, Difference between Azure Resource Manager (ARM) & Classic Portal, Configuration, Diagnostics, Monitoring and Deployment of web apps.

**UNIT II**

**Resource Management:** Introduction to Resource Management, Provision of resource allocation in cloud computing.

**Virtualization:** Concept of virtualization, Taxonomy of Virtualization Techniques, Pros and cons of Virtualization, Virtual Machine provisioning and lifecycle, Load Balancing.

**Traffic Manager:** Introduction, Benefits, How to manage traffic between datacenters.

**UNIT-III**

**Data Management:**  Challenges with data. Data centers, Storage of data and databases, Data Privacy and Security Issues at different level.

**Cloud storage: S**torage account, Storage Replications: LRS, ZRS, GRS, RAGRS, Types of storage: blob, file, table, queue.

**Security:** Benefits, security service providers, Identity and Access Management, AAA administration for Clouds

**Text Books-**

* Mastering Cloud Computing, Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi.
* Cloud Computing: Black Book ; Kailash Jayaswal, Jagannath Kallakuruchi, Donald J. Houde, Dr. Devan Shah.
* Cloud Computing: Principles and Paradigms, Editors: Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, Wile, 2011

**Reference Materials-**

* Microsoft Documents: <https://docs.microsoft.com/en-us/azure/>
* <https://channel9.msdn.com/Azure>
* Research Papers.