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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.

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| **CAP-757** | | **CLOUD COMPUTING WITH AZURE LAB** | | **L** | **T** | **P** | **C** |
| Total Contact Hours :60 | | - | - | 4 | 2 |
| Applicable to which branch: MCA | |
| Prerequisite: Basic knowledge of Internet | | | | | |
| **Marks** | | | | | | | |
| Internal :60 | | | External:40 | | | | |
| **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** | | | | | | |
|  | Student will able to configure & deploy Web applications on cloud. | | | | | | |
|  | Able to create blogs using wordpress. | | | | | | |
|  | Able to create Virtual Machines | | | | | | |
|  | Able to understand the concept of cloud storage. | | | | | | |

**Content of the Syllabus**

**Unit –I**

1. Create Web App in Azure and publish using File Explorer
2. Create Web App in Azure and publish using third party tool.
3. Create Web App in Azure and publish using Github.
4. Create Web App in Azure and publish using Visual Studio.

**Unit -II**

1. Create Logic App in Azure
2. Create a wordpress blog using Azure.
3. Configure two web apps and manage the traffic between them using traffic manager.
4. Create a Virtual Machine and configure IIS server on VM.

**Unit- III**

1. Create and maintain cloud storage using Blob.
2. Create and maintain cloud storage using File storage.

**Content Beyond Syllabus**

1. Create and configure content delivery network (CDN).
2. Create a sql database and migrate it on cloud.
3. Azure Active Directory.