COURSE TITLE	**CLOUD COMPUTING SERVICES**
COURSE CODE	**01AI0503**
COURSE CREDITS	**2**

Objective:

1 To provide students with the fundamentals and essentials of Cloud Computing.
2 To understand the movement from a traditional network infrastructure to a Cloud service provider
3 Learn AWS Managed Services to enable greater flexibility and resiliency in an infrastructure
4 This course is intended to analyze the basics of cloud computing, and make students aware with diversified technologies working for cloud architecture. Course will be focusing on architecture, service models, and AWS platform in cloud.
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Course Outcomes: After completion of this course, student will be able to:

1 Use and Examine different cloud computing services and its Basics(Understanding)
2 Understand and analyze system virtualization and its role in cloud computing. (Analyze)
3 Understand and analyze the architecture of Cloud (Analyze).
4 Identify and apply deployment and management options of AWS Cloud Architecture (Apply).

Pre-requisite of course: Operating System, Computer Networks

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	4	50	0	0	25	25

Contents : Unit	Topics	Contact Hours
Total Hours		

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Introduction of Cloud Computing:** What is Cloud Computing?, How it works?, Types of Cloud, Goals & Challenges, Leveraging Cloud Computing, Cloud Economics and Total Cost of Ownership, Cloud Service Models, Deployment Models, trends in cloud GCP, AWS, AZURE Comparisons advantages, disadvantages ,market share., Install any operating system using Virtualization Tool and understand its application	
2	**Virtualization and Abstraction:** What is Virtualization and how abstraction is provided in cloud, Advantages and Disadvantages, Types of Hypervisor, Load balancing, Creating Amazon EC2 instances with Microsoft Windows	
3	**Amazon Web Services - Compute and Storage:** Introduction to AWS, AWS Compute: Amazon EC2, Amazon Elastic Container Service, AWS Elastic Beanstalk etc.,, Storage: AWS Database Options, AWS Elasticity and Management Tools, Deploy a web application using AWS Elastic Beanstalk	
4	**Amazon Web Services - Networking and Security:** AWS Networking: Amazon VPC, Amazon Cloud Front, Amazon Route 53, AWS Security, Identity, and Access Management, Users, groups, and roles - Understanding credentials, Security policies, Working with Amazon Elastic Block Store (EBS), Build Your Virtual Private Cloud (VPC) and Launch a Web Server	
5	**Architecting on AWS** Introduction to System Design: AWS Essentials Review, System Design for High Availability, Well-Architected Best Practices: Security, Reliability, Performance Efficiency, Working with AWS Identity and Access Management (IAM), Using multiple Amazon Web Services, create a project to demonstrate its collaborative use.	
Total Hours		

Textbook :

1 “Cloud Computing for Dummies”, Judith Hurwitz, R Bloor, M.Kanfman, F.Halper, Wiley India Edition, -

References:

1 Judith Hurwitz, R Bloor, M.Kanfman, F.Halper “Cloud Computing for Dummies”, Wiley India Edition, First Edition

2 Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, ”Cloud Computing: Principles and Paradigms”, Wiley Publication,2011

3 Tim Mather, SubraKumara swamy, Shahed Latif, “Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance”, O’ReillyMedia Inc, 2009

4 Mickey Iqbal 2010, “ IT Virtualization Best Practices: A Lean, Green Virtualized Data Center Approach”, MC Press

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References:

5 Frank H. P. Fitzek, Marcos D. Katz, “Mobile Clouds: Exploiting Distributed Resources in Wireless, Mobile and Social Networks”, Wiley Publications, ISBN: 978-0-470-97389-9, Jan 2014

Suggested Theory Distribution:

The suggested theory distribution as per Bloom’s taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
10.00	15.00	25.00	20.00	30.00	0.00

Supplementary Resources:

1 NPTEL online course : https://onlinecourses.nptel.ac.in/noc17_cs23/preview

2 Coursera: https://www.coursera.org/specializations/cloud-computing

3 AWS Academy: AWS Cloud Computing Architecture at https://aws.amazon.com/training/awsacademy/cloud-computing-architecture/

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