VALUE ADDED COURSE

Swarrnim School of Computing & IT

Year: 2023-2024

Subject: Cloud Computing   **Subject Code: VACCC**
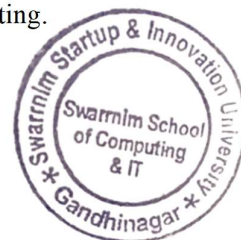
Program:	BCA/B.SC.-IT	Branch:	All

Hours:- **30 hrs.**

Objective:-

- To introduce students to the fundamental concepts and architecture of cloud computing.
- To provide hands-on exposure to various cloud services and their applications in real-world scenarios.
- To equip students with the knowledge of deploying and managing applications on cloud platforms.
- To familiarize students with security and privacy concerns in cloud computing.

Detail Syllabus:-

Sr. No.	Module & Content	Total Hrs
1	**Module-1: Introduction to Cloud Computing** - Overview of Cloud Computing: Definition, Characteristics, and Importance. - History and Evolution of Cloud Computing. - Cloud Service Models: IaaS, PaaS, SaaS. - Cloud Deployment Models: Public, Private, Hybrid, and Community Cloud. - Benefits, Challenges, and Future Trends in Cloud Computing.	06
2	**Module-2: Cloud Computing Architecture and Virtualization** - Cloud Computing Architecture and Components: Frontend, Backend, Network. - Basics of Virtualization: Definition, Hypervisors, Virtual Machines. - Types of Virtualization: Server, Storage, Network, and Application Virtualization. - Role of Virtualization in Cloud Computing. - Case Studies of Virtualization in Real-world Cloud Services.	06
3	**Module-3: Cloud Services and Providers** - Introduction to Leading Cloud Service Providers: AWS, Microsoft Azure, Google Cloud Platform (GCP). - Overview of Core Cloud Services: Compute, Storage, Networking, Database, and Security Services. - Hands-on Lab: Setting up a Cloud Account and Exploring Basic Services. - Introduction to Serverless Computing and its Applications. - Pricing Models and Cost Management in Cloud Services.	06
4	**Module-4: Cloud Storage and Networking** - Overview of Cloud Storage: Concepts, Types (Block, Object, File Storage), and Use Cases. - Managing Data in the Cloud: Backup, Restore, and Data Lifecycle Management. - Cloud Networking Basics: Virtual Networks, Load Balancers, and Content Delivery Networks (CDNs). - Hands-on Lab: Configuring Cloud Storage and Networking Services.	06
5	**Module-5: Cloud Security, Privacy, and Best Practices** - Introduction to Cloud Security: Risks and Best Practices. - Identity and Access Management (IAM) in the Cloud.	06

	- Disaster Recovery and High Availability in Cloud Environments. - Hands-on Lab: Implementing Basic Security Measures and Monitoring in the Cloud.	

Reference Books

1. Buyya, Rajkumar, Vecchiola, Christian, and Selvi, Thamarai. Mastering Cloud Computing: Foundations and Applications Programming, 1st Edition, McGraw Hill Education, 2013.

2. Erl, Thomas, Mahmood, Zaigham, and Puttini, Ricardo. Cloud Computing: Concepts, Technology & Architecture, Pearson, 2013.

3. Jamsa, Kris. Cloud Computing: SaaS, PaaS, IaaS, Virtualization, Business Models, Mobile, Security, and More, 1st Edition, Jones & Bartlett Learning, 2013.

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HoD-SSCIT