

Department of Computer Science & Engineering

16-Jan-2019

CIRCULAR

VALUE ADDED COURSE (CLOUD COMPUTING) – B.Tech. CSE

Students of B.Tech. (CSE) II/III/IV years are hereby informed that value added course "Cloud Computing" is scheduled from 25 January 2019 in your respective classroom, Academic Block – II.


Schedule:


- Time Slot: 03:00 PM to 05:00PM
- Key Speaker: Dr.Gaurav Agarwal
- Duration: 2 hrs.

Program Overview:

This course is a capstone course that introduces the latest Cloud computing, Artificial Intelligence (AI), and Web3 Decentralized Applications technologies that can be combined to create next-generation multi-cloud innovative Intelligent Autonomous Networked (IAN) business solutions. Students will learn about services provided on the top "Big Clouds", namely Amazon AWS Cloud, Google Cloud, Microsoft Azure Cloud, IBM Cloud, Salesforce, and others. Related services provided on the Cloud and covered in the course include computing and hosting services, storage services, networking services, big data services, and machine/deep learning services. Once familiar with Cloud services, Students will learn how to combine them to support cognitive computing and enable the creation of IAN solutions that cater to the practical needs of next-generation mobile devices and social media users in novel and creative ways. As they create these IAN solutions, students will learn about immersive Augmented/Virtual Reality (AR/VR) User Experience and Interfaces (UX/UI), hybrid decentralized computing and DApps, Edge and Fog computing and Internet of Things (IoT), Mobility/5G networking and Software Defined infrastructures, and various key aspects of digital security that are critical to ensure the safety of modern software.


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VALUE ADDED COURSE

COURSE DETAIL:

Name of the Course: Cloud Computing

Course code: BCSE01

Course Offered to: CSE

Duration: 50 Hours

Course Coordinator: Mr. Suhail Javed

Objective:

The course gives an overview of the field of Cloud Computing, and an in-depth study into its enabling technologies and main building blocks, also promotes a better learning environment for students, and create a better working environment for educators.

Overview:

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Learning Outcome:

After the completion of the course, the students will be able to understand the idea behind cloud computing services i.e host web services, store and backup data, host and stream media & many more.

Module-I: Cloud Computing Overview

Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service, Broad network access, Location independent resource pooling ,Rapid elasticity , Measured service, Comparing cloud providers with traditional IT service providers, Roots of cloud computing.

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Module-II: Cloud Insights

Architectural influences – High-performance computing, Utility and Enterprise grid computing, Cloud scenarios – Benefits: scalability, simplicity, vendors, security, Limitations – Sensitive information - Application development- security level of third party - security benefits, Regularity issues: Government policies.

Module-III: Cloud Architecture- Layers and Models

Layers in cloud architecture, Software as a Service (SaaS), features of SaaS and benefits, Platform as a Service (PaaS), features of PaaS and benefits, Infrastructure as a Service (IaaS), features of IaaS and benefits, Service providers, challenges and risks in cloud adoption. Cloud deployment model: Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing.

Module-IV: Cloud Simulators- CloudSim and GreenCloud


Introduction to Simulator, understanding CloudSim simulator, CloudSim Architecture (User code, CloudSim, GridSim, SimJava) Understanding Working platform for CloudSim, Introduction to GreenCloud

Module-V: Introduction to VMWare Simulator

Basics of VMWare, advantages of VMware virtualization, using VMware workstation, creating virtual machines-understanding virtual machines, create a new virtual machine on local host, cloning virtual machines, virtualize a physical machine, starting and stopping a virtual machine.

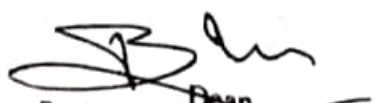
Learning Outcomes:

- Virtual Private Cloud Networking
- High-Performance, Scalable Load Balancing
- Cloud API Gateways
- Global Content Delivery Networks
- Cloud-Managed High-Performance Network Address Translation
- Network Edge Connectivity
- Reliable, Resilient, Low-Latency DNS Serving on the Cloud
- Network Performance and Availability Optimization on the Cloud
- Big Cloud Service Platforms Convergence and Service Offerings (Amazon AWS, Google GCP, Microsoft Azure, IBM Cloud, Force.com Cloud, Clouds at SGI, NASA, and CERN).


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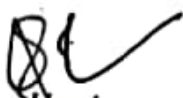


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Course Outline:

	Title	No. of hours allocated
Module I	Introductory	10
Module II	Cloud Insights	10
Module III	Cloud Architecture- Layers and Models	10
Module IV	Cloud Simulators- CloudSim and GreenCloud	10
Module V	Introduction to VMWare Simulator	10



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