CLOUD COMPUTING

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PRE-REQUISITES : Basics of Computer Architecture and Organization, Networking

INTENDED AUDIENCE : CSE, ECE, EE

INDUSTRIES APPLICABLE TO : IT industries

COURSE OUTLINE :

Cloud computing is a scalable services consumption and delivery platform that provides on-demand computing service for shared pool of resources, namely servers, storage, networking, software, database, applications etc., over the Internet. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly provisioned and released with minimal management effort. This course will introduce various aspects of cloud computing, including fundamentals, management issues, security challenges and future research trends. This will help students (both UG and PG levels) and researchers to use and explore the cloud computing platforms.

ABOUT INSTRUCTOR :

Prof. Soumya K. Ghosh received the Ph.D. and M.Tech. degrees from Department of Computer Science and Engineering, Indian Institute of Technology (IIT), Kharagpur, India. Presently, he is a Professor with Department of Computer Science and Engineering, IIT Kharagpur. Before joining IIT Kharagpur, he worked for the Indian Space Research Organization in the area of satellite remote sensing and geographic information systems. He has more than 200 research papers in reputed journals and conference proceedings. His research interests include spatial data science, spatial web services and cloud computing.

COURSE PLAN :

Week 1**:** Introduction to Cloud Computing

Week 2**:** Cloud Computing Architecture

Week 3**:** Service Management in Cloud Computing

Week 4**:** Data Management in Cloud Computing

Week 5**:** Resource Management in Cloud

Week 6**:** Cloud Security

Week 7**:** Open Source and Commercial Clouds, Cloud Simulator

Week 8**:** Research trend in Cloud Computing, Fog Computing

Week 9: VM Resource Allocation, Management and Monitoring

Week 10: Cloud-Fog-Edge enabled Analytics

Week 11: Serverless Computing and FaaS Model

Week 12: Case Studies and Recent Advancements