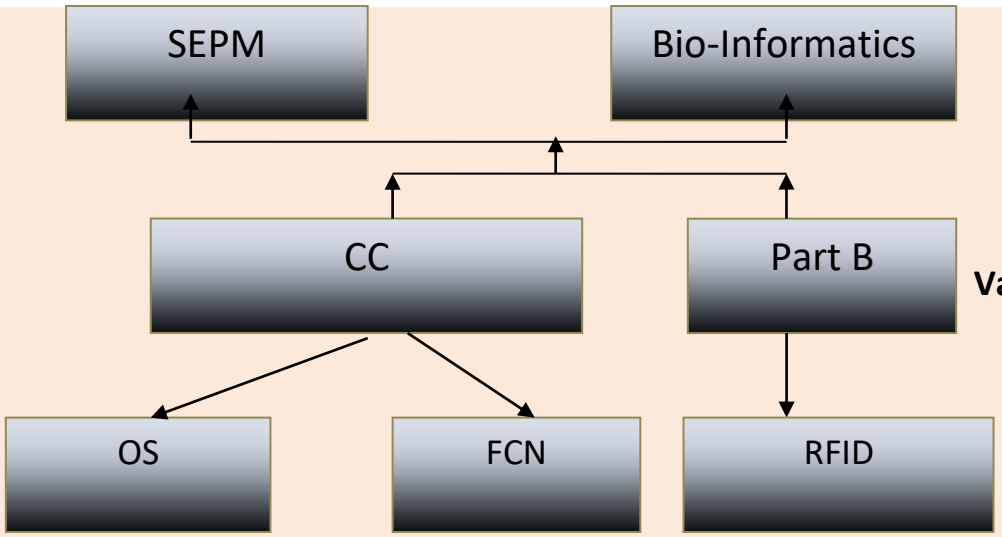
SNJB's Late Sau. Kantabai Bhavarlalji Jain College of Engineering, Chandwad

DEPARTMENT OF INFORMATION TECHNOLOGY

Name of Faculty : Santosh B. Mahale	**Course Name : Cloud Computing**
Designation : Assistant Professor	**Class : TE IT Lectures (Hrs/Week) : 3 Credit:03**
Academic Year : 2018-19	



Content Beyond Syllabus

SEPM : Software Engineering & project Management
CC :Cloud Computing
OS : Operating Systems
FCN : Fundamentals of computer networks
RFID :radio-frequency identification

Content beyond Syllabus

SN	Topic	Mode of Conduction	Name of Expert	CO/PO
1	Digital Signature	Practical	Santosh Sonawane	CO 4
2	RFID	Practical	Prof. Pankaj S. Desai	CO 4

Value Addition

SN	Topic	Mode of Conduction	Name of Expert	CO/PO
1	RFID Demonstration	Demo	Pankaj S. Desai	CC CO 4

SPPU Syllabus: Cloud Computing

314453: CLOUD COMPUTING

Teaching Scheme:

Lectures: 3 Hours/Week

Credits Examination Scheme:

03 In-Semester : 30 Marks

End-Semester: 70 Marks

Prerequisites:

1. Operating Systems
2. Fundamentals of Computer Networks

Course Objectives:

1. To become familiar with Cloud Computing and its ecosystem.
2. To learn basics of virtualization and its importance.
3. To evaluate in-depth analysis of Cloud Computing capabilities.
4. To give technical over view of Cloud Programming and Services.
5. To understand security issues in cloud computing.
6. To be exposed to Ubiquitous Cloud and Internet of Things.

Course Outcomes :

7. To understand the need of cloud based solution
8. To understand Security mechanisms & issues in various cloud systems
9. To explore effective techniques to program cloud systems
10. To understand the current challenges and trade-off in cloud computing
11. To find the challenges in cloud computing and it to effective solutions
12. To understand the emerging trends in cloud computing.

UNIT – I FUNDAMENTALS OF CLOUDCOMPUTING 06Hours

OriginsandInfluences,BasicConceptsandTerminology,GoalsandBenefits,RisksandChallenges,Rolesand Boundaries, Cloud Characteristics, Cloud Delivery Models, Cloud Deployment Models, Federated Cloud/Intercloud, Types ofClouds.

Cloud-Enabling Technology: Broadband Networks and Internet Architecture, DataCenter Technology, Virtualization Technology, Web Technology, Multitenant Technology, Service Technology.

UNIT–II VIRTUALIZATIONANDCOMMONSTANDARDSINCLOUDCOMPUTING 06Hours

Implementation Levels of Virtualization, Virtualization Structures/Tools and Mechanisms, Types of Hypervisors,VirtualizationofCPU,Memory,andI/ODevices,VirtualClustersandResourceManagement, Virtualization for Data-CenterAutomation.

CommonStandards:TheOpenCloudConsortium,OpenVirtualizationFormat,StandardsforApplication Developers: Browsers (Ajax), Data (XML, JSON), Solution Stacks (LAMP and LAPP),Syndication (Atom, Atom

PublishingProtocol,andRSS),StandardsforSecurity.

UNIT-III CLOUDPROGRAMMING,ENVIRONMENTSANDAPPLICATION 06Hours

FeaturesofCloudandGridPlatforms,ProgrammingSupportofGoogleAppEngine,ProgrammingonAmazon AWS and Microsoft Azure, Emerging Cloud Software Environments, Understanding CoreOpenStack Ecosystem.

Applications: Moving application to cloud, Microsoft Cloud Services, Google Cloud Applications,Amazon Cloud Services, Cloud Applications (Social Networking, E-mail, Office Services, Google Apps, CustomerRelationshipManagement).

UNIT–IV CLOUDSECURITYANDISSUES 06Hours

Basic Terms and Concepts, Threat Agents, Cloud Security Threats and Attacks, Additional Considerations.

Cloud Security Mechanisms: Encryption, Hashing, Digital Signature, Public Key Infrastructure (PKI), Identity and Access Management (IAM), Single Sign-On (SSO), Hardened Virtual Server Images.

Cloud Issues: Stability, Partner Quality, Longevity, Business Continuity, Service-Level Agreements, Agreeing ontheServiceofClouds,SolvingProblems,QualityofService,RegulatoryIssuesandAccountability.

UNIT–V UBIQUITOUSCLOUDSANDTHEINTERNETOFTHINGS 06Hours

CloudTrendsinSupportingUbiquitousComputing,PerformanceofDistributedSystemsandtheCloud , EnablingTechnologiesfortheInternetofThings(RFID,SensorNetworksandZigBeeTechnology,GPS), InnovativeApplicationsoftheInternetofThings(SmartBuildingsandSmartPowerGrid,Retailingand Supply-ChainManagement,Cyber-PhysicalSystem),OnlineSocialandProfessionalNetworking.

UNIT–VI FUTURE OFCLOUDCOMPUTING 06Hours

Howthe Cloud Will Change Operating Systems,Location-Aware Applications, Intelligent Fabrics,Paints,and More,TheFutureofCloudTV,FutureofCloud-BasedSmartDevices,FasterTimetoMarketforSoftware Applications, Home-Based Cloud Computing, Mobile Cloud, Autonomic Cloud Engine, Multimedia Cloud, Energy Aware Cloud Computing,Jungle Computing.

DockerataGlance: Process Simplification, Broad Support and Adoption, Architecture, Getting the Most from Docker, TheDockerWorkflow.

References:

Srinivasan,J.Suresh,CloudComputing:Apracticalapproachforlearningandimplementation, Pearson, ISBN:9788131776513.

1. Brian J.S. Chee and Curtis Franklin, Jr., Cloud Computing: Technologies and Strategies of the UbiquitousDataCenter,CRCPress,ISBN:9781439806128.
2. http://nptel.ac.in/courses/106106129/18
3. http://nptel.ac.in/courses/106106129/21