VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
T Y B. Sc. (Computer Science)
Syllabus for T. Y. B. Sc. Semester-VI
Effective From: June-2022
Course: 601: Cloud Computing Fundamentals

Course code	601
Course Title	Cloud Computing Fundamentals
Credit	2
Teaching per week	2 hrs
Minimum week per semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2019
Purpose of the course	• To provide fundamental knowledge of cloud computing system • To provide idea of various types of services of cloud computing • To provide idea of various deployment models • To provide idea of virtualization
Pre-requisite	Basic understanding of operating system and computer network
Course out come	CO1:Students will understand History and Evolution of cloud computing along with that they will come to know merits and demerits of cloud computing. CO2:Students will understand core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the variousmodels and services in cloud computing. CO3:Students will get idea of use of virtualization in cloud computing and know about its various types.

	CO4: Students will get idea of applications of various services models. CO5: Students will get idea of system virtualization and outline its role in enabling the cloud computing system model
Mapping between COs and PSOs	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1						
CO2						
CO3						
CO4						
CO5						

Course Content

Unit 1: Introduction to cloud computing

1.1 Introduction to Cloud Computing

1.2 History and Evolution of Cloud Computing,

1.3 Merits of Cloud computing

1.4 Obstacles for cloud technology, Cloud vulnerabilities, Cloud Migration

1.5 Cloud service provider – role and responsibility

1.6 Cloud service consumer – Expectations

1.7 Service level agreement (SLA)

Unit 2: Cloud system and Virtulization

2.1 Types of clouds- Private Public, hybrid and community cloud

2.2 Cloud Computing architecture

2.3 Cloud computing infrastructure

2.4 Virtulization

2.4.1 Basics of Virtualization

	2.4.2 Types of Virtualization 2.4.3 Virtualization of CPU, Memory, I/O Devices 2.5 Virtual Clusters and Resource management **Unit 3: Introduction to Cloud computing delivery models and services** 3.1 Iaas – Use, Merits and Demerits of Iaas, Characteristics, Application of Iaas : Azure, 3.2 Paas – Use, Merits and Demerits ,Characteristics , Applications : Azure, Google AppEng 3.3 SaaS – Use, Merits and Demerits, Characteristics, Application : Google Apps, Salesforce **Unit 4 Various aspects related to Cloud services** 4.1 Service oriented architecture 4.2 Diversified services 4.3 Performance issues in cloud computing services 4.4 Role of data centre in cloud services 4.5 Legal issues in cloud computing service provision
Reference Books	**1.** Cloud Computing: Principles and Paradigms - R. Buyya et al - Wiley 2010 **2.** Cloud Computing : Principles Systems and Application - L Gillam et al - Springer 2010 **3.** Cloud Computing Bible - Sosinsky - Wiley - India, 2011 **4.** Cloud Computing Second Edition Dr. Kumar Saurabh - Wiley - India, 2012 **5.** Service Oriented Architeture: Concepts , Technology and Design - Thomas Erl - Prentice Hall publication, 2005 **6.** Understanding Enterprise SOA - Enterprise Service Oriented Architecture - Eric Pulier, Hugh Taylor - Dreamtech Press 2008 **7.** Cloud Computing - Insight into New Era Infrastructure - Dr Kumar

	Saurabh - Wiley India 2012 **8.** Understanding SOA with Web Services - SanjivaWeerawarana, FransciscoCubera, Frank Leymann, Tony Storey, Donald F Ferguson, Eric Newcomer, Greg Lomow - AddisionWesely Publication, 2004 **9.** Enterprise Service Bus - Dave Chappelll - O'Reilly Publications 2004 **10.** Amazon Web Services For Dummies. Bernard Golden. For Dummies. ISBN-13: 978- 111857183
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment