C. U. SHAH UNIVERSITY,WADHWAN CITY.

Faculty of: **Computer Science**
Course: **Master of Computer Applications**
Semester**: II**
Subject Code**: 5CS02CCC1**
Subject Name: **Cloud Computing**

Sr. No	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								Total
								Theory				Practical				
								Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
			Th	Tu	Pr			Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
5	5CS02CCC1	Cloud Computing	4	--		4	4	30	1½	70	2½	--	--	--	--	100

Objectives:

- To provide an understanding of the basic concepts of parallel and distributed computing and their role in Cloud Computing.
- To study the concept of Virtualization and relevant technologies available in the market
- To understand the importance of Cloud computing for higher throughput
- To make aware about availability of various Cloud platforms
- To study different application of Cloud and Cloud management techniques

Prerequisites:

- Basic knowledge of Computer Networks and Network protocol suits
- Understanding of process and thread management

Course outline:-

Sr. No.	Course content	No. of Hours
1	The Vision Of Cloud Computing, Defining A Cloud and Closer Look,Cloud Computing Reference Model, Characteristics and Benefits, Challenges Ahead, Distributed System, Virtualization, Web 2.0, Service-Oriented Computing, Building Cloud Computing Environment. Computing Platform and Technologies – Amazon Web Services (AWS), Google AppEngine, Microsoft Azure, Hadoop, Force.Com and Salesforce.Com, Manjrasoft AnekaEras of Computing, Parallel vs Distributed Computing, Elements of Parallel Computing, Elements of Distributed Computing, Technologies for Distributed Computing	10

2	Introduction to Virtualization, Characteristics of Virtualized Environment, Taxonomy of Virtualization Techniques, Virtualization and Cloud Computing, Pros and Cons of Virtualization, Technologies Examples—Xen, VMware, Microsoft Hyper-V Introduction of Cloud computing Architecture, Cloud Reference model, Types of Clouds, Economics of the Cloud, Open Challenges	10
3	AWS Framework Overview, AWS Cloud Formation, AWS Cloud Management. Introduction to the AWS Flow Framework for Java, Implementing Workflow Applications with the AWS Flow Framework, Workflow and Activity Contracts, Workflow and Activity Type Registration, Activity and Workflow Clients, Workflow Implementation, Activity Implementation	10
4	Running Programs Written with the AWS Flow Framework for Java, Execution Context, Child Workflow Executions, Continuous Workflows, Data Converters, Passing Data to Asynchronous Methods, Testability and Dependency Injection, Error Handling, Daemon Tasks, AWS Flow Framework for Java, Replay Behavior	10
5	Amazon Web Services, Google App Engine, Microsoft Azure, Observations Scientific Applications, Business and Consumer Applications Energy Efficiency in Clouds, market based management of Clouds, federated Clouds/ Inter Cloud, Third Party Cloud Services	08
	Total	**48**

Learning Outcomes:
- Understand the role of thread and process in distributed and parallel processing and can aware about the transformation of a standalone or web based application from distributed and/or parallel to Cloud application
- Understand the principals of Cloud computing
- Gain an exposure about Amazon Simple Work Flow Service for Java
- Aware about various services provided by Cloud Computing (SaaS, IaaS, HaaS etc…)
- Gain an exposure about various Cloud platforms available in the IT market

Teaching & Learning Methodology:
- Class room and laboratory teaching using teaching and learning tools like multimedia projector, overhead projectors etc.

Books Recommended:

- Mastering Cloud Computing, Rajkumar Buyya, Christian Vechhiola, S. Thamarai Selvi, MCGraw Hill Education (India) Private Limited.

Additional Reference Book(s)
- Cloud Computing: A practical approach by Anthony T. Vetle – Tata McGraw Hill Education Private Limited (2009)
- Cloud Computing Bible - Barrie Sosinsky – Wiley India Pvt Ltd (2011)
- 3. Cloud Computing For Dummies-- Judith Hurwitz , Robin Bloor , Marcia Kaufman , Fern Halper - – Wiley India Pvt Ltd.