

Branch Name:	Information and Communication Technology
Program Code:	ET107
Semester/Year:	Semester VIII/ Fourth Year
Course Name:	Open Elective - III: Cloud Computing
Course Code:	2ET1070881T
Pre-requisite Course:	Fundamentals of Distributed Computing

Course Objectives:

1. To understand Cloud Computing Fundamentals.
2. To understand Virtualization, Load Balancing and Security Concepts in Cloud Computing.
3. To understand Tools and Programming concept of Cloud architecture using Simulation.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min	Max.	Min.	Max.	
3	3	-	-	3	24	60	16	40	-	-	-	-	100

Subject Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	Introduction to Cloud Technologies Introduction to the Cloud Computing, History of cloud computing, Cloud service options, Cloud Deployment models, Business concerns in the cloud.	6	10
2	Virtualization and Cloud Platforms Exploring virtualization, Load balancing, Hypervisors, Machine imaging, Cloud marketplace overview, Comparison of Cloud providers.	7	13
3	Introduction to AWS-Identity services, security and compliance AWS history, AWS Infrastructure, AWS services, AWS ecosystem, Users, groups, and roles - Understanding credentials, Security policies, IAM abilities and limitations, AWS physical security - AWS compliance initiatives, Understanding public/private keys, Other AWS security capabilities.	8	18
4	Programming, management console and storage on AWS Basic Understanding APIs - AWS programming interfaces, Web services, AWS URL naming, Matching interfaces and services, Elastic block store - Simple storage service, Glacier - Content delivery platforms	7	16
5	AWS computing and marketplace Elastic cloud compute - Introduction to servers, Imaging computers, Auto scaling, Elastic load balancing, Cataloging the marketplace, AMIs, Selling on the marketplace.	9	25

6	AWS networking and databases Virtual private clouds, Cloud models, Private DNS servers (Route 53), Relational database service – Dynamo DB, Elasti Cache, Red shift. Analytics services, Application services, Cloud security, Cloud Watch, Cloud Formation, Cloud Trail, Ops Works.	8	18
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List of Reference Books:

1. Cloud Computing Bible. Barrie Sosinsky, John Wiley & Sons 2011
2. Rajkumar Buyya, Cloud Computing: Principles and Paradigms, John Wiley & Sons 2013
- 3 Amazon Web Services For Dummies Bernard Golden 2013
- 4 Cloud Computing Design Patterns by Thomas Erl, Prentice Hall 2015

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Compare the strengths and limitations of cloud computing	1. Remembering
CLO2	Identify the architecture, infrastructure and delivery models of cloud computing	4. Analyze 5. Evaluate
CLO3	Apply suitable virtualization concept	4. Analyze
CLO4	Choose the appropriate cloud player, Programming models and approach	2. Understanding 4. Analyze
CLO5	Address the core issues of cloud computing such as security, privacy and interoperability	3. Applying 6. Creating

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1					L	M						H	H	M	L	
CLO2		H	M	M	L					L		H		M		
CLO3		M	H		L									H		L
CLO4		M	H		L			L					L			
CLO5	H	M	H		L				L			H	L		M	H

H: High, M: Medium, L: Low