

Branch Name:	Computer Engineering (Software Engineering)
Program Code:	ET203
Course Title:	Advance Cloud Computing
Course Code:	2ET2030202T
Pre-requisite Course:	Fundamentals of Distributed Computing

Course Objectives:

The main objective of this course is: To make the students familiar with the fundamentals and essential components of Cloud Computing. The course aims to make the students use and adopt Cloud services and tools in their real life scenarios. The course intends to enable students exploring GoogleApps, Microsoft Azure and Amazon Web Services and other businesses cloud applications

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

Course Contents:

Unit No	Topics	Total Hours	Weightage (%)
1	Introduction to Cloud Computing: NIST definition, Service/Deployment Models, Architecture, Features, Advantage/Disadvantage	02	10
2	Cloud as a Service: Infrastructure as a Service, Platform as a Service, Software as a Service, Identity as a Service, Security as a Service, Compliance as a Service.	02	10
3	Resource Management: Virtualization, Hypervisors, Load balancing, Server Consolidations, VM Migration	04	18
4	SLA Management: Introduction, Traditional Approaches, Types & Life Cycle of SLA, SLA Management in Cloud	04	18
5	Workflow Engine for Clouds: Introduction, Workflow Management Systems and Clouds, Architecture of Workflow Management Systems	03	12
6	Cloud Security: Cloud Security Overview, Issues / Challenges, Data security, Identity & Access Management, Distributed intrusion and anomaly detection.	03	12

7	Legal Issues in Cloud Computing: Data Privacy and Security Issues, Jurisdictional Issues, Commercial and Business Considerations	02	10
8	Reviewing case studies (E.g. AWS, Eucalyptus) and understanding simulations tools (E.g. Cloudsim)	04	10

Text Books / Reference Books :

1. Cryptography and Network Security Principles and Practices by William Stallings, Prentice Hall
2. Cryptography and Network Security Atul Kahate, TMH
3. Information Security Principles and Practice, Deven Shah, Wiley-India
4. Cryptography & Network Security, Forouzan
5. Security in Computing by Pfleeger, PHI hopadhyay, McGrawHill

List of Open-Source Software/learning website:

- ☐ [Dl.acm.org](http://dl.acm.org)
- ☐ Springer.com
- ☐ Sciencedirect.com
- ☐ Elsevier.com
- ☐ Ieeexplore.ieee.org
- ☐ Scholar.google.co.in
- ☐ Scopus.com

Course Learning Outcomes (CLO):

Course Outcomes	Description	Bloom's Taxonomy Level
COL1	To explain and characterize different cloud computing models.	Understanding (2) Applying (3)
COL2	To identify security concerns in cloud computing.	Applying (3)
COL3	To analyze the trade-offs inherent in Cloud Computing.	Applying (3)
COL4	To identify appropriate design choices when solving real-world cloud computing problems.	Applying (3)
COL5	To make recommendations on cloud computing solutions for an enterprise	Applying (3)

Mapping of CLO with PO and PSO

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	H	M	M		M											
CLO2	H	M			M							L				
CLO3	H	M	M		M											
CLO4	M	M	M		M							L				
CLO5	M	M										L				

H: High, M: Medium, L: Low