



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

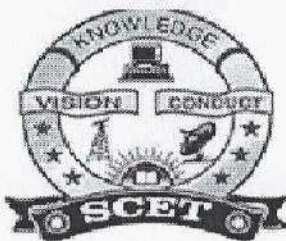
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Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF INFORMATION TECHNOLOGY

TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Periods /Week	Academic Year	Date of commencement of Semester
23CD6E01	CLOUD COMPUTING CONCEPTS	VI	CSE-DS-B	6	2025-2026	10-12-2025
COURSE OUTCOMES						
1	To explain the emerging utility computing model called cloud computing (K2)					
2	To introduce the various levels of services offered by cloud(k1)					
3	To discuss the fundamentals of cloud enabling technologies such as distributed computing, service-oriented architecture and virtualization (K2)					
4	To emphasize the security and other challenges in cloud computing(K5)					
5	To create the advanced concepts such as containers, server less computing and cloud-centric Internet of Thing(K6)					
UNIT	Out Comes / Bloom's Level	Topics No.	Topics/ Activity	Text Book/ Reference	Conta ct Hour	Delivery Method
I	CO – 1	1.1	Introduction to Cloud Computing Fundamentals	T1	1	Chalk & Board Power point presentations Assignment Test
		1.2	Cloud computing at a glance	T1	1	
		1.3	Defining a cloud	T1	1	
		1.4	Cloud computing reference model	T1	1	
		1.5	Types of services (IAAS, PAAS, SAAS)	T1	1	
		1.6	Cloud deployment models (public, private, hybrid)	T1	1	
		1.7	Utility computing	T1	1	
		1.8	Characteristics and	T1	1	
		1.9	Cloud service providers (Amazon Web Services, Microsoft Azure, Google App Engine).	T3	1	
		1.10	Cloud computing benefits	T3	1	
Content beyond syllabus		1.11	Aws, Azure, GCP	T3	1	
Total					11	
II		2.1	Ubiquitous internet	T3	1	Chalk &
		2.2	Parallel and distributed computing	T3	1	



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	CO – 2	2.3	Elements of parallel computing	T3	1	Board
		2.4	Hardware architectures for parallel computing (SISD, SIMD, MISD, MIMD)	T3	1	Power point presentations
		2.5	Elements of distributed computing	T3	1	Assignment
		2.6	Inter-process communication	T3	1	Test
		2.7	Technologies for distributed computing	T3	1	
		2.8	Remote procedure calls (RPC)	T3	1	
		2.9	Service-oriented architecture (SOA)	T3	1	
		2.10	Web services	T3	1	
		2.11	Virtualization	T3	1	
		Content beyond syllabus		2.12	Types of parallel and distributed computing	T3
Total					12	
III	CO – 3	3.1	Virtualization and Container	T3	1	Chalk & Board
		3.2	Taxonomy of virtualization techniques	T3	1	
		3.3	Virtualization and cloud computing	T3	1	
		3.4	Pros and cons of virtualization	T3	1	
		3.5	Technology examples (XEN, VMware)	T3	1	
		3.6	Building blocks of containers	T3	1	Power point presentations
		3.7	Container platforms (LXC, Docker),	T3	1	Assignment
		3.8	Container orchestration	T3	1	
		3.9	Docker Swarm and Kubernetes	T3	1	
		3.10	Public cloud VM (e.g. Amazon EC2)	T3	1	
		3.11	Container (e.g. Amazon elastic container service) offerings.	T3	1	Test
		Content beyond syllabus		3.12	Types of virtualizations	T3



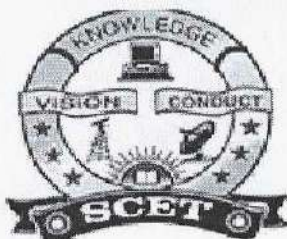
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				Total	12		
IV	CO – 4	4.1	Cloud computing challenges	T3	1	Chalk & Board Power point presentations Assignment Test	
		4.2	Economics of the cloud	T3	1		
		4.3	Cloud interoperability and standards,	T3	1		
		4.4	Scalability and fault tolerance	T3	1		
		4.5	Energy efficiency in clouds,	T3	1		
		4.6	Federated clouds,	T3	1		
		4.7	Cloud computing security	T3	1		
		4.8	Cloud computing security	T3	1		
		4.9	Fundamentals of computer security	T3	1		
		4.10	Fundamentals of computer security	T3	1		
		4.11	Cloud security architecture,	T3	1		
		4.12	Cloud shared responsibility model	T3	1		
		4.13	Security in cloud deployment models	T3	1		
Content beyond syllabus		4.14	Cloud security				
				Total	14		
V	CO – 5	5.1	Advanced Concepts in Cloud Computing	T3	1	Chalk & Board Power point presentations Assignment Test	
		5.2	Serverless computing	T3	1		
		5.3	Server less computing architecture	T3	1		
		5.4	Function-as-a-Service	T3	1		
		5.5	Public cloud (e.g. Aws lambda) and open-source (e.g. Open Faas)	T3	1		
		5.6	Serverless platforms	T3	1		
		5.7	Internet of Things (IOT)	T3	1		
		5.8	Applications	T3	1		
			5.9	Cloud-centric IOT and layers	T3		1
			5.10	Edge and fog computing	T3		1
			5.11	DevOps,	T3		1
				Infrastructure-as-code,	T3		1
		Content beyond syllabus		5.12	Quantum cloud computing		T3



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		Total	12
CUMULATIVE PROPOSED PERIODS		61	
Text Books:			
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION		
1	Rajkumar Buyya, Christian Vecchiola, Thamarai Selvi, Shivnanda Poojara, Satish N. Srirama, <i>Mastering Cloud Computing</i> , 2nd Edition, McGraw Hill, 2024.		
2	Kai Hwang, Geoffrey C. Fox, Jack J. Dongarra, <i>Distributed and Cloud Computing</i> , Elsevier, 2012.		
Reference Books:			
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION		
1	Dan C. Marinescu, <i>Cloud Computing: Theory and Practice</i> , 2nd Edition, MK Elsevier, 2018.		
2	K. Chandrasekharan, <i>Essentials of Cloud Computing</i> , CRC Press, 2014.		
Web Details:			
1	https://aws.amazon.com/what-is-cloud-computing/ -computing -tutorial		
2	https://www.geeksforgeeks.org/cloud-computing-tutorials/		

	Name	Signature with Date
i. Faculty	Mrs. R Uma Aruna Devi	R. Uma Aruna Devi 10/12/25
ii. Module Coordinator	Mrs. R Uma Aruna Devi	R. Uma Aruna Devi 10/12/25
iii. Programme Coordinator	Dr. RVSV Prasad	Dr. RVSV Prasad 10/12/25

Principal