

CSE11154	Cloud Architecture and Deployment	L	T	P	C
Version 1.0	Contact Hours 45 Hours	3	0	0	3
Pre-requisite/Exposure	NIL				
Co-requisite	NIL				

Course Objectives:

- To enable students to have an overview of Cloud based Applications
- To provide a concept of different Cloud Architectures
- To introduce with Delivery models in Cloud Computing
- To draw a comparison among different Cloud Deployment Models

Course Outcomes:

On the completion of this course the student will be able to CO1: Understand the fundamentals of Cloud Based

ApplicationsCO2: Explain different cloud computing architectures

CO3: Analyzing the designing code for cloud CO4: Evaluating the Delivery models of Cloud ComputingCO5: Compare different Cloud Deployment Models

Course Description:

The course presents a top-down view of cloud computing, from applications and administration to programming and infrastructure. Its main focus is on parallel programming techniques for cloud computing and large-scale distributed systems that form the cloud infrastructure. The topics include Introduction to Cloud-Based Application, Cloud Architectures, Designing Code For The Cloud, Overview of the Delivery models in Cloud Computing and Public and Hybrid Cloud Deployment Models. Students will study how to design different modules and web applications using web-based technologies and deploy them over the cloud. Students will also have a concept of delivery models of cloud computing and different models to deploy over the cloud.

Course Content:

Units	Lecture Hours
Unit-I: Introduction to Cloud Based Application Introduction, Definition and evolution of Cloud Computing; Enabling Technologies, Service and Deployment Models Popular Cloud Stacks and Use Cases; Benefits, Risks, and Challenges of Cloud Computing Economic Models and SLAs. Contrast traditional software development and development for the cloud. Public v private cloudapps. Understanding Cloud ecosystems what is SaaS/PaaS, popular APIs, mobile.	9

Units	Lecture Hours
Unit-II: Cloud Architectures Service Oriented architecture, SOAP and REST architecture, Utility Computing, Web2.0, Cluster computing and Grid Computing, Web3.0 and Mashup, Distributed Computing, Cloud Computing Challenges, Cloud Computing Reference Architecture (CCRA)	9
Unit-III: Designing Code For The Cloud Class and Method design to make best use of the Cloud infrastructure; Web Browsers and the Presentation Layer: Understanding Web browsers attributes and differences. Building blocks of the presentation layer: HTML, HTML5, CSS, Silverlight, and Flash.	5
Unit-IV: Overview of the Delivery models in Cloud Computing Overview of Delivery models in Cloud Computing, IAAS: features and benefit, PAAS: features and benefit, SAAS: features and benefit, Virtualization to Cloud Transformation Roadmap, Cloud Computing Solution components and workflow, IAAS architecture case study: AWS EC2	10
Unit-V: Private, Public and Hybrid Cloud Deployment Models What is a Private Cloud?, Illustration of Private Cloud, Advantages of Private Cloud, Limitations of Private Cloud, Service Management, Journey into Private Cloud, Planning and Strategy, Standardization, Virtualization, Automation, Cloud, Case study, VMware vCloud, Case Study IBM SmartCloud Entry, Private cloud. What is a Public Cloud?, Illustration of Public Cloud, Why Public Cloud, Advantages of Public Cloud, Limitations of Public Cloud, What is a Hybrid Cloud?, Why Hybrid Cloud, Illustration of Hybrid Cloud, Advantages of Hybrid Cloud, Challenges of Hybrid Cloud	12

Examination Scheme:

Components	Mid Term	Class Assessment	End Term
Weightage (%)	20	30	50

Relationship between Course Outcomes (COs) and Program Outcomes (POs):

1 = Weakly Mapped

2 = Moderately Mapped 3 = Strongly Mapped

Course Code	Course Name	COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
CSE11	Cloud	CO1115	2	1	2	2	2	1	3	-	1	-	-	3	3	1	3

154	Architecture and Deployment	4.1															
154	Architecture and Deployment	CO1115 4.2	3	2	1	3	1	3	1	-	1	-	-	2	2	2	2
154	Architecture and Deployment	CO1115 4.3	2	3	3	2	3	2	2	-	2	-	-	3	1	3	2
154	Architecture and Deployment	CO1115 4.4	2	2	2	2	3	1	3	-	2	-	-	1	3	2	3
154	Architecture and Deployment	CO1115 4.5	3	3	3	2	1	1	1	-	1	-	-	1	3	1	3
154	Architecture and Deployment	CO1115 4	2.4	2.2	2.2	2.2	2.0	1.6	2.0	-	1.4	-	-	2.0	2.4	1.8	2.6