

Cloud Computing Foundations (IC)

Course Code	L:T:P:S	Credits	Exam marks	Exam Duration	Course Type
18CSI442	3:0:2:0	4	CIE:50 SEE:50	3 Hours	FC

Course Objectives:

This course will enable students to :

- Explain the phases of transition from classic data center to virtual data center and then to the Cloud
- Explain the key characteristics, services, and deployment models of Cloud
- Describe the Cloud infrastructure components and service management processes
- Describe the Cloud security concerns and solutions
- List the key considerations for migration to the Cloud

Syllabus

Module - I

Journey to the Cloud: Drivers for cloud computing, cloud definition and characteristics, building cloud infrastructure – a phased approach from Classic data center to virtual data center to Cloud, virtualization and its benefits, advantages and disadvantages of cloud computing. **08 Hours**

Module - II

Cloud Computing Primer: Cloud deployment models private, public, hybrid and community cloud, cloud services – SaaS, PaaS, and IaaS, cloud economics and challenges, advantages and disadvantages of cloud computing. **08 Hours**

Module - III

Cloud infrastructure and Management: Cloud infrastructure framework and components, infrastructure management and service creation tools, cloud service management processes asset and configuration management, service catalog management, financial management, capacity, performance and availability Management. **08 Hours**

Module - IV

Cloud Security: Basic information security concepts, cloud security concerns and threats, security mechanisms in cloud at compute, storage, and network layer, Governance, Risk and compliance in Cloud. **08 Hours**

Module - V

Cloud Migration Considerations: Considerations for choosing right application and cloud model, service provider specific considerations, cloud adoption phases, Financial and technical feasibility assessment, migration and optimization considerations. **08 Hours**

Course Outcomes:

On completion of this course, the students are able to :

- Explain the phases of transition from classic data center to virtual data center and then to the Cloud.
- Explain the key characteristics, services, and deployment models of Cloud.
- Describe the Cloud infrastructure components and service management processes.
- Describe the Cloud security concerns and solutions.
- List the key considerations for migration to the Cloud.

Reference Books:

1. Thomas Erl: "Cloud Computing", Pearson Education, 1st Edition, 2014, ISBN-13: 978-9332535923.
2. Judith Hurwitz, Marcia Kaufman, Fern Halper: "Cloud Computing for dummies", Wiley, 1st Edition, 2009, ISBN-13: 978-0470484708.
3. Cloud Computing: Principles and Paradigms, Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, John Wiley and Sons Publications, 2011.

E-Resources:

1. <http://www.buyya.com/MasteringClouds/ToC-Preface-TMH.pdf>