Course Code: BCACT-302	Course Title:	L T P C
	Cloud Computing	3 0 0 3

Prerequisites: None

Course Objectives:

1. To provide students with the fundamentals and essentials of Cloud Computing.
2. To provide students a sound foundation of the Cloud computing so that they are able to identify the vendors and assess the risk involved in cloud migration.
3. To enable students be aware of the various governance issues in cloud and how to manage the same.

UNIT – I : Fundamentals of Cloud Computing

Cloud Computing Basics – History of Cloud Computing, Characteristics of Cloud Computing, Need for Cloud computing, Advantages and Possible Disadvantages of cloud computing, Cloud Deployment Models – Public, Private, Hybrid, Community, Other deployment Models. Evolving Data Center into Private Cloud, Datacenter Components, Extracting Business value in Cloud Computing – Cloud Security, Cloud Scalability, Time to Market, Distribution over the Internet, Cloud Computing Case Studies.

UNIT – II: Cloud Delivery Models

Introduction to Cloud Services, **Infrastructure as a Service (IaaS)** – Overview, Virtualization, Container, Pricing Models, Service Level Agreements, Migrating to the Cloud, IaaS Networking options, Virtual Private Cloud(VPC), IaaS Storage – File and Object storage, Data Protection, IaaS security, Benefits, Risks and Examples of IaaS. **Platform as a Service (PaaS)** – Overview, IaaSvsPaaS, PaaS Examples, benefits and risks. **Software as a Service (SaaS)** – Introducing SaaS, SaaS Examples – Office 365, Google G Suite, Salesforce.com , Evaluating SaaS – user and vendor perspective, Impact of SaaS, Benefits and risks of SaaS. **Other Services on Cloud**, **Cloud Delivery Models Considerations**

UNIT – III :Cloud Platforms

Introducing Cloud Platforms, Evaluating cloud platforms, Cloud Platform technologies – Amazon Web Services, Microsoft Azure, Google Cloud Platform, Salesforce.com, and Impact of Cloud platforms. Private Cloud Platforms – Introducing Private clouds – Microsoft Azure stack, Open stack, AWS Greengrass, Impact of Private clouds. **Cloud Migration** : Delivering Business Processes from the Cloud: Business process examples, Broad Approaches to Migrating into the Cloud, The Seven-Step Model of Migration into a Cloud, Efficient Steps for migrating to cloud., Risks: Measuring and assessment of risks, Company concerns Risk Mitigation methodology for Cloud computing, Case Studies

UNIT – IV: Cloud Computing - Challenges, Risk and Mitigation

Cloud Storage, Application performance, Data Integration, Security. **Ensuring Successful Cloud Adoption**: Designing a Cloud Proof of Concept, Vendor roles and capabilities, moving to the Cloud. Impact of Cloud on IT Service Management. **Risks and Consequences of Cloud Computing** – Legal Issues, Compliance Issues,

Privacy and Security.

UNIT – V: Managing the Cloud

Managing and Securing Cloud Services, Virtualization and the Cloud, Managing Desktops and devices on the cloud, SOA and Cloud computing, Managing the Cloud environment, Planning for the Cloud – Economic Cost Model and Leveraging the Cloud, Cloud computing resources, Cloud Dos and Don'ts.

TEXTBOOKS:

1. Kirk Hausman, Susan L. Cook, TelmoSampaio, " CLOUD ESSENTIALS CompTIA® Authorized Courseware for Exam CLO-001", John Wiley & Sons Inc., 2013
2. Judith Hurwitz , Robin Bloor , Marcia Kaufman , Fern Halper, "Cloud Computing for Dummies", Wiley Publishing Inc., 2010

REFERENCES:

3. Erl," Cloud Computing: Concepts, Technology & Architecture", Pearson Education, 2014
4. Srinivasan, "Cloud Computing: A Practical Approach for Learning and Implementation "Pearson Education, 2014

Expected Course Outcomes:

After completion of the course the student will be able:

CO1:Analyze the Cloud computing setup with its vulnerabilities and applications using different architectures.

CO2: Analyze the risks involved in migrating the existing infrastructure to cloud.

CO3: Assess various cloud service providers and generate effective cloud infrastructure by optimizing the cost involved.

CO4: Broadly educate to know the impact of engineering on legal and societal issues involved in addressing the security issues of cloud computing.