

**Research Center for Cloud Infrastructure and Security  
Program: M.Tech Cloud Computing & Security,  
First Semester**

Unit	Contents of the Course	Total Contact Hrs.
I	Linux Essentials: Basic Linus Commands: Who am I, man, pwd, ifconfig ls,cd,tail,cat, ,grep, Commands to work with file(mv,cp,rm),Text editor (vim), su, sudo, date, cal, User & fike permission commands, LVM	7
II	INTRODUCTION: Overview of Computing Paradigm, Introduction to Cloud Computing- History of Cloud Computing, Cloud service providers, Cloud Computing Characteristics & Disadvantages, Pros and Cons of Cloud Computing, Benefits of Cloud Computing. AWS, Microsoft Azure, iCloud. Cloud Computing Models	7
III	Cloud Reference Model – Architecture, Cloud Computing Models(Public , Private, Hybrid, Community), Comparison of Shared, Dedicated & Cloud Hosting, Applications of Cloud Computing. Economics of Cloud, Challenges of Cloud Computing	7
IV	Big data: Attributes of big data, Sources of Big data, Avalable technologies to handle Big Data Machine Learning:	7
V	Confidentiality, privacy, integrity, authentication, non-repudiation, availability, access control, defence in depth, least privilege, how these concepts apply in the cloud, what these concepts mean and their importance in PaaS, IaaS and SaaS. e.g. User authentication in the cloud; Cryptographic Systems- Symmetric cryptography, stream ciphers, block ciphers, modes of operation, public-key cryptography, hashing, digital signatures, public-key infrastructures, key management, X.509 certificates, OpenSSL.	8
<b>Total</b>		36

**Reference Books:**

1. Rajkumar Buyya, Christian Vecchiola, S.Tharmarai Selvi: Mastering Cloud Computing.
2. Cloud Computing Bible, Barrie Sosinsky, Wiley-India, 2010
3. Cloud Computing: Principles and Paradigms, Editors: Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, Wile, 2011
4. Cloud Computing: Principles, Systems and Applications, Editors: Nikos Antonopoulos, Lee Gillam, Springer, 2012
5. Cloud Security: A Comprehensive Guide to Secure Cloud Computing, Ronald L. Krutz, Russell Dean Vines, Wiley-India, 201