Course Title	**Cloud Computing Lab**
Course Code	**EI-339-L**
Credit Hours	1 (0,3)
Category	Domain Elective
Prerequisite	CC-214: Computer Networks
Co-Requisite	None
Follow-up	None
Course Introduction	Nowadays cloud computing becomes popular for individuals' users as well as for the business community. It provides on-demand huge computation and storage resources which is attractive for a large number of users mainly due to pay-per-usage charging model. This course will introduce topics related to Cloud Computing and also expose students to the latest tools and technologies used in Cloud Computing. The aim of this course is to provide an in-depth knowledge of Cloud Computing topics. The course would also expose students to important methods and tools used Cloud Computing.

Course Learning Outcomes (CLOs)	At the end of the course, the students will be able to:	**BT**	**PLO**
	CLO1: Explain Cloud computing, virtualization, Dockers and scalable web applications.	C2 (Explain)	1,2
	CLO2: Familiarize with Load Balancing AWS ELB, Nginx, Ipvsadm, Ldirectord.	C1 (Know)	1,2
	CLO3: Demonstrate the use of NoSQL, MongoDB and DynamoDB, Revision, MapReduce	C3 (Apply)	3,4,5
	CLO4: Explain Big Data transformation methods.	C2 (Explain)	2,4,5

Syllabus	Implementation of the concepts/topics discussed in the course. Introduction To Cloud Computing, Introduction To Cloud Computing (Cont.), AWS Services, EC2 hands, Accessing AWS S3 , Virtualization , Containerization/Dockers, Scalable Web Application in The Cloud, Scalable Web Application in The Cloud (Cont.), Load Balancing AWS ELB, Nginx, Ipvsadm, Ldirectord, Web Application Deployment Models, Introduction to Big Data, Introduction to Big Data (Cont.), Introduction to NoSQL, MongoDB and DynamoDB, Revision, MapReduce, Distributed Systems, Consistency and Fault Tolerance in Distributed Systems, Big Data Transformation Methods , Blockchain, Practical Considerations in Cloud Computing, Future of the Cloud Computing and Big Data
Suggested Instructional/ Reading Material	1. JothyRosenberg and Arthur Mateos;The Cloud at Your Service;Manning Publications. ISBN: 1935182528 2. Paul Zikopoulos and Chris Eaton; Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data; McGraw-Hill. ISBN: 0071790535 3. Kyle Banker, Peter Bakkum, Shaun Verch, Douglas Garrett, and Tim Hawkins; MongoDB in Action, Second Edition. 4. Clinton W. Brownley; Foundations for Analytics with Python from Non-Programmer to Hacker.