Subject Code	Subject Name	Credits
26CS112	BIG DATA SECURITY	4

Course Objectives:

1. To understand the field of Big Data and its sphere of Privacy Ethics and security issues
2. To know the Hadoop security design and security options in it
3. To understand Data Security and Event Logging

Learning Objectives:

On successful completion of the course, students will be able to:

1. To learn about security compliance auditing and protection

Unit 1 - Big Data Privacy, Ethics and Security (12 hrs.):
Privacy – Reidentification of Anonymous People – Why Big Data Privacy is self-regulating? – Ethics – Ownership – Ethical Guidelines – Big Data Security – Organizational Security.

Unit 2 - Security, Compliance, Auditing, and Protection (12 hrs.):
Steps to secure big data – Classifying Data – Protecting – Big Data Compliance – Intellectual Property Challenge – Research Questions in Cloud Security – Open Problems.

Unit 3 - Hadoop Security Design (12 hrs.):
Kerberos – Default Hadoop Model without security - Hadoop Kerberos Security Implementation & Configuration.

Unit 4 - Hadoop Ecosystem Security (12 hrs.):
Configuring Kerberos for Hadoop ecosystem components – Pig, Hive, Oozie, Flume, HBase, Sqoop.

Unit 5 - Data Security & Event Logging (12 hrs.):
Integrating Hadoop with Enterprise Security Systems - Securing Sensitive Data in Hadoop – SIEM system – Setting up audit logging in hadoop cluster

Reference Books:

1. Mark Van Rijmenam, “Think Bigger: Developing a Successful Big Data Strategy for Your Business”, Amazon, 1 edition, 2014.
2. Frank Ohlhorst John Wiley & Sons, “Big Data Analytics: Turning Big Data into Big Money”, John Wiley & Sons, 2013.
3. SherifSakr, “Large Scale and Big Data: Processing and Management”, CRC Press, 2014.
4. Sudeesh Narayanan, “Securing Hadoop”, Packt Publishing, 2013.
5. Ben Spivey, Joey Echeverria, “Hadoop Security Protecting Your Big Data Problem”, O’Reilly Media, 2015.

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