

SEMESTER VI

COURSE TITLE: BIG DATA & PREDICTIVE DATA ANALYTICS

COURSE CODE : 05ACABD17651

CREDITS: 04

UNIT I - INTRODUCTION

Evolution of Big data – Best Practices for Big data Analytics – Big data characteristics – Validating – The Promotion of the Value of Big Data. Big Data Use Cases- Characteristics of Big Data Applications. Perception and Quantification of Value -Understanding Big Data Storage – A General Overview of High-Performance Architecture. HDFS – MapReduce and YARN – Map Reduce Programming Model

UNIT II – CLUSTER AND CLASSIFICATIONS

Advanced Analytical Theory and Methods: Overview of Clustering – K-means – Use Cases – Overview of the Method. Determining the Number of Clusters – Diagnostics – Reasons to Choose and Cautions. Classification: Decision Trees – Overview of a Decision Tree – The General Algorithm – Decision Tree Algorithms – Evaluating a Decision Tree – Decision Trees in R. Naïve Bayes – Bayes' Theorem – Naïve Bayes Classifier

UNIT III - ASSOCIATION AND RECOMMENDATION SYSTEM

Advanced Analytical Theory and Methods: Association Rules – Overview – Apriori Algorithm – Evaluation of Candidate Rules. Applications of Association Rules – Finding Association & finding similarity – Recommendation System. Collaborative Recommendation- Content Based Recommendation. Knowledge Based Recommendation- Hybrid Recommendation Approaches.

UNIT IV - STREAM MEMORY

Introduction to Streams Concepts – Stream Data Model and Architecture. Stream Computing, Sampling Data in a Stream – Filtering Streams. Counting Distinct Elements in a Stream. Estimating moments – Counting oneness in a Window – Decaying Window – Real time Analytics Platform(RTAP) applications. Case Studies – Real Time Sentiment Analysis, Stock Market Predictions. Using Graph Analytics for Big Data: Graph Analytics

SEMESTER VI

COURSE TITLE: STRATEGIC IT MANAGEMENT

COURSE CODE : 05ACAST17651

CREDITS : 04

UNIT I

Introduction to Strategic Management, Concept of Corporate Strategy, Strategic Management Process. The 7-S Framework Corporate Policy and Planning in India. Board of Directors-Role and Functions. Top Management-Role and skills Board Functioning-Indian Context.

UNIT II

Environment Scanning, Industry Analysis, Synthesis of External Factors. External factors Analysis, Summary (EFAS), Internal Scanning, Value Chain Analysis. Synthesis of Internal Factors, External factors ,Analysis Summary (IFAS), Case Study 1

UNIT III

Strategy Formulation, Strategic factors Analysis Summary (SFAS). Business Strategy, Corporate Strategy. Functional Strategy, Strategic Choice, Case Study 2

UNIT IV

Strategy Implementation, Organization Structure, Corporate Culture, Diversification, Mergers and Acquisition, Case Study 3. Evaluation and Control Strategic Information Systems. Other Strategic Issues Small and Medium Enterprises Non-Profit Organizations

SEMESTER VI
COURSE TITLE: NO SQL DATABASES

COURSE CODE : 05ACASQ17651

CREDITS : 04

UNIT I

Introduction: Overview and History of NoSQL Databases Definition of the Four Types of NoSQL Database. The Value of Relational Databases, Getting at Persistent Data, Concurrency, Integration, Impedance Mismatch, Application and Integration Databases. Attack of the Clusters, The Emergence of NoSQL, Key Points. Comparison of relational databases to new NoSQL stores, MongoDB, Cassandra, HBASE, Neo4j use and deployment, Application. RDBMS approach, Challenges NoSQL approach, Key-Value and Document Data Models, Column-Family Stores, Aggregate-Oriented Databases.

UNIT II

Replication and Sharding, Map Reduce on databases. Distribution Models, Single Server, Sharding, Master-Slave Replication, Peer-to-Peer Replication, Combining Sharding and Replication. NoSQL Key/Value databases using MongoDB, Document Databases, What Is a Document Database? Features, Consistency, Transactions, Availability. Query Features Scaling, Suitable Use Cases, Event Logging, Content Management Systems, Blogging Platforms, Web Analytics or Real-Time Analytics, E-Commerce Applications, When Not to Use. Complex Transactions Spanning Different Operations, Queries against Varying Aggregate Structure.

UNIT III

Column- oriented NoSQL databases using Apache HBASE, Column-oriented NoSQL databases using Apache Cassandra, Architecture of HBASE. What is a Column-Family Data Store? Features, Consistency, Transactions, Availability, Query Features, Scaling, Suitable Use Cases, Event Logging. Content Management Systems, Blogging Platforms, Counters, Expiring Usage, When Not to Use. NoSQL Key/Value databases using Riak, Key-Value Databases, What Is a Key-Value Store, Key-Value Store Features, Consistency, Transactions, Query Features, Structure of Data.

UNIT IV

Scaling, Suitable Use Cases, Storing Session Information, User Profiles, Preferences, Shopping Cart Data, When Not to Use. Relationships among Data, Multioperation Transactions, Query by Data, Operations by Set. Graph NoSQL databases using Neo4. NoSQL database development tools and programming languages, Graph Databases, What Is a Graph Database? Features, Consistency, Transactions, Availability, Query Features. Scaling, Suitable Use Cases, Connected Data, Routing, Dispatch, and Location-Based Services, Recommendation Engines, When Not to Use.

SEMESTER VI

COURSE TITLE: DIGITAL MARKETING

COURSE CODE : 05ACADG17652

CREDITS : 04

UNIT I:INTRODUCTION OF THE DIGITAL MARKETING

Digital vs. Traditional Marketing - Digital Marketing Channels. Creating initial digital marketing plan – Content management - SWOT analysis - Target group analysis. Web design - Optimization of Web sites - MS Expression Web. Benefits Of Digital Marketing – Applications of Content Development & Management

UNIT II:SEARCH ENGINE OPTIMIZATION & CRM

Introduction to SEO - Writing the SEO content - Google AdWords- creating accounts - Google AdWords- types. Introduction to CRM - CRM platform - RM models. Introduction to Web analytics - Web analytics - levels - introduction of Social Media Marketing. Social Media Marketing plan (working in groups) - Business opportunities through digital marketing

UNIT III:CHANNELS OF DIGITAL MARKETING

Digital Marketing, Website Marketing, Search Engine Marketing, Online Advertising, Email Marketing, Blog Marketing, Social Media Marketing, Audio, Video and Interactive Marketing, Online Public Relations, Mobile Marketing. Marketing in the Digital Era: Segmentation – Importance of Audience Segmentation, how different segments use Digital Media. Migrating from Traditional Channels to Digital Channels-Digital Media for Customer Loyalty. Measurement of Digital Media: Analyzing Digital Media Performance, Analyzing Website Performance, Analyzing Advertising Performance

UNIT IV:DIGITAL MARKETING PLAN

Need of a Digital Marketing Plan, Elements of a Digital Marketing Plan, Importance and challenges in Marketing plan. Mission, Opportunities and Issues, Goals and Objectives in Marketing plan. Marketing Strategy, Action Plan, Budget, Writing the Marketing Plan and Implementing the plan. Digital Marketing Platforms and Strategies, Comparison of Marketing and Digital Marketing, Digital Marketing Trends.

SEMESTER VI

COURSE TITLE: MACHINE LEARNING

COURSE CODE : 05ACAML17652

CREDITS : 04

UNIT I -INTRODUCTION TO ML

Origins and used of Perl: Scalars and their operations: Assignment statements and simple input and output. Control statements; Fundamentals of arrays – Hashes – References – Functions. Pattern matching – File input and output Examples – Common Gateway Interface – CGI linkage. Query string format – CGI.pm module – A survey example – Cookies.

UNIT II - SUPERVISED LEARNING

Learning a Class from Examples. Vapnik-Chervonenkis (VC) Dimension. Learning Multiple Classes-examples, Model Selection and Generalization. Dimensions of a Supervised Machine Learning Algorithm.

UNIT III -BAYESIAN DECISION THEORY (BDT) AND DECISION TREES(DT)

BDT-Introduction, Classification, Losses and Risks, Discriminant Functions Utility Theory, Association Rules. DT-Introduction, Univariate trees. Classification Trees, Regression Trees, Pruning, Rule Extraction from Trees, Learning Rules from Data, Multivariate Trees

UNIT IV - CLUSTERING

Introduction, Mixture Densities, k-Means Clustering, Expectation-Maximization Algorithm-examples, Hierarchical Clustering, Case study-examples

SEMESTER VI

COURSE TITLE: ADVANCED JAVA

COURSE CODE : 05ACAAJ17652

CREDITS : 04

UNIT I : CORE JAVA OVERVIEW

Features of Java, Object Oriented Programming concepts, Creating classes and objects, Constructors. Static members, Wrapper classes, Method overloading, Inheritance, Method overriding. Interfaces, Exception handling, Packages, Creating custom packages. Stream classes, Graphics classes, Enums and Annotations.

UNIT II: GUI PROGRAMMING

Designing GUIs in Java, Components and Containers, Basics of Components, Using Containers, Layout Managers. AWT Components, Menus, Using Swing Components, Java Utilities (java.util Package). The Collection Framework: Collections of Objects, Collection Types, Sets, Sequence, Map, Understanding Hashing, Use of ArrayList & Vector. Event Driven Programming: Basics, event handling process, event handling mechanism, The Delegation Model of Event Handling, Event Classes, Event Sources, Event Listeners, Adapter Classes as Helper Classes in Event Handling.

UNIT III: APPLETS AND DATABASE PROGRAMMING

Introduction to Applets, How Applets differ from Applications, Applet Life Cycle, Including an applet on a web page. Displaying images using Applet, Playing audio using applet, animations in applet, applying graphics methods in Applets. Introduction to JDBC, JDBC Drivers & Architecture, JDBC Connections, JDBC Statements, Result sets. JDBC Transactions, Exceptions in JDBC, Stored Procedures, Streaming data in database.

UNIT IV: JAVA SERVLETS

Java Web basics, Introduction to Servlets, Servlet Life Cycle, Servlet example and deployment. Managing form data, servlet client request and server response, servlet HTTP codes. Servlet Exceptions, Writing filters, File Uploading, Cookies handling, Session handling. Sending mails with servlets, Developing & Deploying Servlets, Descriptor file(web.xml).

SEMESTER VI

COURSE TITLE: PROGRAMMING IN R

COURSE CODE : 05ASECO17631

CREDITS : 04

UNIT I -INTRODUCTION TO R

Introduction- History, R-GUI, Features of R. Installing and Loading R Packages, Basic Syntax. Reading Data-Reading text data. Data Types, Missing, Indefinite and Infinite Value. Distributions and Simulation.

UNIT II - R OBJECTS, VECTORS AND LISTS

Data Objects in R. Vectors- Creation, usage and examples. Matrices- Creation, Operations and examples. Manipulating Data: Accessing Elements of a Vector or Matrix, Sorting, Dates and times, Tables, Split-with, subset and transform functions. Lists, and Case Study

UNIT III -GRAPHICS, TIME SERIES AND LINEAR MODELS

Anatomy of a Plot, overview of Graphics functions. Displaying Univariate data and Bivariate data and High Dimensional Data. Working with Time Series Objects-example. Classical Linear Models- linear regression, non linear regression-examples. Case study on Time Series and Linear Models

UNIT IV - PREDICTIVE ANALYTICS USING DT AND NEURAL NETWORKS

Classification Trees-Decision Tree Methodology. Pruning Trees and Predictions. Neural Networks: An Introduction, Methodolog. Regression Function in Neural Networks, Examples. Case study on DT and Neural Networks