P.T.V.A.'s

M.L.Dahanukar College of Commerce

Teaching Plan: 2025 – 2026

Department: Information Technology

Class: M.Sc. (I.T.) (Part I) – Sem-II

Subject: BIG DATA ANALYTICS

Name of the Faculty: Supritha Bhandary

Month	Topics to be Covered	Internal Assessment	Number of Lectures
Nov	Introduction to Big Data, Characteristics of Data, and Big Data Evolution of Big Data, Definition of Big Data, Challenges with big data, Why Big data? Data Warehouse environment, Traditional Business Intelligence versus Big Data. Examples of big Data Analytics. Big Data Analytics, Classification of Analytics, Challenges of Big Data, Importance of Big Data, Big Data Technologies, Data Science, Responsibilities, Soft state eventual consistency. Data Analytics Life Cycle Analytical Theory and Methods: Clustering and Associated Algorithms, Association Rules		12
Dec	Apriori Algorithm, Candidate Rules, Applications of Association Rules, Validation and Testing, Diagnostics, Regression, Linear Regression, Logistic Regression, Additional Regression Models Analytical Theory and Methods: Classification, Decision Trees, Naïve Bayes, Diagnostics of Classifiers, Additional Classification Methods, Categorizing Documents by Topics, Determining Sentiments		18
Jan	Data Product, Building Data Products at Scale with Hadoop, Data Science Pipeline, Hadoop Ecosystem, Operating System for Big Data, Concepts, Hadoop Architecture Distributed Analysis and Patterns, Computing with Keys,		14
Feb	Design Patterns, Last-Mile Analytics, Data Mining and Warehousing, Structured Data Queries with Hive, HBase, Data Ingestion, Importing Relational data with Sqoop, Ingesting stream data with flume. Analytics with higher level APIs, Pig, Spark's higher level APIs		16

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(AUTONOMOUS)

Teaching Plan: 2025 - 26

Department: I.T. Class: M.Sc.(I.T.) Part-I Semester: II

Subject: Modern Networking

Name of the Faculty: Ms. Sayali Parab

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	Elements of Modern Networking: The Networking Ecosystem, Example Network Architectures, Global Network Architecture, A Typical Network Hierarchy Ethernet Applications of Ethernet Standards Ethernet Data Rates Wi-Fi Applications of Wi Fi, Standards Wi-Fi Data Rates 4G/5G Cellular First Generation Second Generation, Cloud Computing Cloud Computing Concepts The Benefits of Cloud Computing Cloud Networking Cloud Storage, Internet of Things on the Internet of Things, Requirements and Technology Types of Network and Internet Traffic, Elastic Traffic, Inelastic Traffic, Real-Time Traffic Characteristics Demand: Big Data, Cloud Computing, and Mobile TrafficBig		14
December	Mobile Traffic, Requirements, Software-Defined Networks SDN, SDN Control Plane Architecture, Border Gateway Protocol Routing and QoS Between Domains, Virtualization, Network Functions Virtualization, Architecture NFV Management and Orchestration, IEEE 802.1Q VLAN Standard,		12
January	Defining and Supporting User Needs, Quality of Service, Background, QoS Architectural Framework, Data Plane, Control Plane, Management Plane, Integrated Services Architecture, ISA Approach, QoE: User Quality of Experience, QoE-Related Standardization Projects, Definition of Quality of Experience		16
February	The QoE/QoS Layered Model, QoS and QoE Classification of QoE/ QoS Mapping Models, Black Box Media-Based QoS/QoE Mapping Models, Glass-Box Parameter-Based QoS/QoE Mapping Models,Gray-Box QoS/QoE Mapping Models, Tips for QoS/QoE Mapping Model Selection,IP-Oriented Parameter-Based QoS/QoE Mapping Models		14
March	Networks, The System-Oriented Actionable QoE Solution, The Service-Oriented Actionable QoE Solution, QoE Versus QoS Service Monitoring, QoS Monitoring Solutions, QoE Monitoring Solutions, QoE-Based Network and Service Management		04

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M.L. Dahanukar College of Commerce (Autonomous)

Teaching Plan: 2025 - 26

Department: I.T. **Class: M.Sc. (I.T.)** **Semester: II**

Subject: Microservices Architecture

Name of the Faculty: Ms. Jeenal Jain

Month	Topics to be Covered	Internal Assessment	Number of Lectures
NOVEMBER	Understanding Microservices Adopting Microservices The Microservices Way Microservices Value Proposition Deriving Business Value Defining a Goal-Oriented Layered Approach		7
DECEMBER	Applying the Goal-Oriented Layered Approach Designing Microservice Systems The Systems Approach to Microservices A Microservices Design Process Establishing a Foundation Goals and Principles Platforms, Culture		8
JANUARY	Service Design, Microservice Boundaries API design for Microservices Data and Microservices Distributed Transactions and Sagas Asynchronous Message-Passing and Microservices dealing with Dependencies System Design and Operations		7
FEBRUARY	Independent Deployability More Servers, Docker and Microservices Role of Service Discovery Need for an API Gateway, Monitoring and Alerting		4
MARCH	Adopting Microservices in Practice Solution Architecture Guidance Organizational and Culture Guidance Tools and Process Guidance, Services Guidance.		4

Ms. Jeenal Jain

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ML Dahanukar College of Commerce (Autonomous)

Teaching Plan: 2025 - 26

Department: I.T **Class: MSc.(I.T.) Part-I** **Semester: II**

Subject: Computer Vision

Name of the Faculty: Ms. Rasika Sawant

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Unit 1:** Perform Geometric transformations Perform Image Stitching Perform Camera Calibration		16
December	**Unit 2:** Perform the following: a. Face detection b. Object detection c. Pedestrian detection d. Face recognition Construct 3D model from images Implement object detection and tracking from video		14
January	**Unit 3:** Perform Feature extraction using RANSAC Perform Colorization		16
February	**Unit 4:** Perform Text detection and recognition Perform Image matting and Composting		14

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