Course Code	Course Name	Credits
26CM012	BIG DATA ANALYTICS FOR ONLINE RETAIL	04

Course Objectives

- To introduce concepts of big data and its relevance in online retail.
- To develop understanding of data collection, storage, and processing techniques.
- To analyze customer behavior using big data tools and techniques.
- To apply analytics for decision-making in e-commerce operations.
- To explore emerging trends like AI, personalization, and recommendation systems in retail.

Learning Outcomes

- Understand big data concepts, characteristics, and applications in online retail.
- Analyze different data sources and technologies used in e-commerce platforms.
- Apply big data tools for customer segmentation and behavior analysis.
- Evaluate data-driven strategies for improving sales, marketing, and customer experience.
- Design basic analytics models for recommendation systems and retail decision-making.

Unit I - Introduction to Big Data in Retail (12 Hrs)

Meaning and importance of big data - Characteristics of big data (Volume, Velocity, Variety, Veracity, Value) - Role of big data in online retail - Overview of e-commerce ecosystem - Data-driven decision making in retail.

Unit II - Data Sources and Data Management: (12 Hrs)

Types of data in online retail (structured, unstructured, semi-structured) - Data sources: customer data, transaction data, web logs, social media - Data collection techniques - Introduction to databases and data warehouses - Basics of Hadoop ecosystem and cloud storage

Unit III - Customer Analytics and Segmentation (12 Hrs)

Customer behavior analysis - FM (Recency, Frequency, Monetary) analysis - Customer segmentation techniques - Personalization strategies - Churn prediction basics.

Unit IV - Retail Analytics Applications (12 Hrs)

Recommendation systems (collaborative & content-based filtering) - Pricing analytics and dynamic pricing - Inventory and supply chain analytics - Sentiment analysis from reviews and feedback - Marketing analytics and campaign effectiveness.

Unit V - Tools, Trends and Ethics (12 Hrs)

Tools: Python basics, Excel analytics, Power BI/Tableau (overview) - AI and machine learning in retail: Concept - Meaning- Uses in retail business - Predictive and prescriptive analytics - Data privacy, security, and ethical issues - Future trends in online retail analytics.

Reference Books:

1. Michael Minelli, Michele, Ambiga Dhiraj - Big Data Big Analytics - Emerging Business Intelligence and Analytic Trends for Today's Businesses.
2. Saurabh Brajesh, Big Data Analytics in Retail Supply Chain, 2016.
3. Ramesh Sharda, Dursun Delen, Efraim Turban, business intelligent, analytics and data science, fourth edition.
4. Foster Provost & Tom Fawcett, Data Science for Business, Publisher: O'Reilly Media First published: 2013.
5. Author: Judah Phillips, E-Commerce Analytics (2013), Publisher: Pearson FT Press, Focus: Data analytics for e-commerce optimization. ISBN: 978-0-13-337546-1.

Websites and eLearning Sources:

1. https://www.youtube.com/watch?v=LOuAOZWJ9RA&list=PLxCzCOWd7aiHUUi6ZlansKbDw_cXut0El
2. https://www.youtube.com/watch?v=18RyuK7Pa0o
3. https://www.youtube.com/watch?v=BFxc65qGh5g
4. https://www.youtube.com/watch?v=EYLOnDlD45w
5. https://www.youtube.com/watch?v=6yDr7CWLJ8c

COs and Bloom's Taxonomy Mapping – 26CM012		
Course Outcomes	**On successful completion of this course, students will be able to**	**BTL**
CO1	Understand big data concepts, characteristics, and applications in online retail.	K1 & K3
CO2	Analyze different data sources and technologies used in e-commerce platforms.	K4
CO3	Apply big data tools for customer segmentation and behavior analysis.	K6
CO4	Evaluate data-driven strategies for improving sales, marketing, and customer experience.	K5
CO5	Design basic analytics models for recommendation systems and retail decision-making	K1, K2

BTL Bloom's Taxonomy Level) - K1 – Remembering, K2 – Understanding, K3- Applying, K4 – Analyse, K5- Evaluate and K6 - Create

Relationship Matrix – 26CM012													
Course Outcomes	**Programme Outcomes (POs)**						**Programme Specific Outcomes (PSOs)**						**Mean Score of Cos**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	**PSO6**	
CO1	2	2	2	3	1	2	1	3	1	2	2	1	1.83
CO2	2	2	3	2	3	2	1	3	2	3	2	2	2.25
CO3	3	3	2	3	2	1	2	2	3	3	2	2	2.33
CO4	2	3	1	2	3	2	2	3	2	3	3	1	2.25
CO5	3	3	3	3	3	2	2	3	3	3	3	2	2.75
												Total	2.28

Mean Score: 3- High, 2- Medium/Moderate, 1-Low