COURSE MODULE OF THE SUBJECT TAUGHT FOR THE SESSION 2025-26 (ODD SEM)

Course Syllabi with CO's

Academic Year: 2025 - 2026

Department: CSE (Data science)

Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
BAD714B	**Business Analytics**	Elective		3	0	0	40

Learning Objectives:

CLO 1. Understand the nature of data, statistical Modelling and visualization.
CLO 2. Learn concepts of Business analytics and Data Warehousing.
CLO 3. Gain knowledge on Data mining process and SNA, text & Web analytics.

Topics Covered as per Syllabus

Module- 1

An Overview of Business Intelligence, Analytics, Data Science, and AI: Changing Business Environments and Evolving Needs for Decision Support and Analytics, Decision-Making Processes and Computerized Decision Support Framework, Evolution of Computerized Decision Support to Analytics/Data Science, A Framework for Business Intelligence, Analytics Overview. Artificial Intelligence - Concepts, Drivers, Major Technologies, and Business Applications: Artificial Intelligence: Concepts, Drivers, Major Technologies, and Business Applications, Conversational AI—Chatbots.

[Note: Analytics in action – Excluded] Chapter 1 (1.2-1.6), Chapter 2(2.4-2.6, 2.9)

Module -2

Descriptive Analytics I -Nature of Data, Big Data, and Statistical Modeling: The Nature of Data in Analytics, A Simple Taxonomy of Data, The Art and Science of Data Preprocessing, Definition of Big Data, Fundamentals of Big Data Analytics, Big Data Technologies, Big Data and Stream Analytics, Statistical Modeling for Business Analytics, Regression Modeling for Inferential Statistics.

[Note: Analytics in action – Excluded] Chapter 3 (3.2-3.10)

Module -3

Descriptive Analytics II: Business Intelligence Data Warehousing, and Visualization: Business Intelligence and Data Warehousing, Data Warehousing Process, Data Warehousing Architectures, Data Management and Warehouse Development, Data Warehouse Administration, Security Issues, and Future Trends, Business Reporting, Data Visualization, Different Types of Charts and Graphs, The Emergence of Visual Analytics, Information Dashboards.

[Note: Analytics in action – Excluded] Chapter 4 (4.2-4.11)

Module -4

Predictive Analytics I - Data mining process, methods, and Algorithms: Data Mining Concepts and Applications, Data Mining Applications, Data Mining Process, Data Mining Methods. Prescriptive Analytics - Optimization and Simulation: Model-Based Decision-Making, Structure of Mathematical Models for Decision Support, Certainty, Uncertainty, and Risk, Decision Modeling with Spreadsheets.

[Note: Analytics in action – Excluded] Chapter 5 (5.2-5.5), Chapter-8 (8.2-8.5)

Module -5

Predictive Analytics II - Text, Web, and Social Media Analytics: Text Analytics and Text Mining Overview, Natural Language Processing (NLP), Text Mining Applications, Text Mining Process, Sentiment Analysis and Topic Modeling, Web Mining Overview, Search Engines, Web Usage Mining (Web Analytics), Social Analytics.

[Note: Analytics in action – Excluded] Chapter 6 (6.2-6.10)

TextBooks:

1. Ramesh Sharda, Dursun Delen and Efraim Turban, "Business Intelligence, Analytics, Data Science and AI – A Managerial Perspective", 5th edition, Global Edition, Pearson Education Limited, 2024.

Reference Books

1. Steve Williams, Business Intelligence Strategy and Big Data Analytics - A General Management Perspective, Morgan Kaufmann (Elsevier), 2016.
2. Vincent Charles, Pratibha Garg, Neha Gupta and Mohini Agarwal, Data Analytics and Business Intelligence - Computational Frameworks, Practices, and Applications, CRC Press, 2023.
3. Ira J. Haimowitz, DATA ANALYTICS FOR BUSINESS - Lessons for Sales, Marketing, and Strategy, Routledge (Taylor & Francis), 2023.

List of URL's

1. https://onlinecourses.nptel.ac.in/noc24_cs65/preview
2. https://onlinecourses.nptel.ac.in/noc21_cs45/preview
3. https://www.geeksforgeeks.org/what-is-data-analytics/
4. https://onlinecourses.nptel.ac.in/noc20_mg11/preview
5. https://onlinecourses.nptel.ac.in/noc23_mg104/preview
6. https://onlinecourses.nptel.ac.in/noc20_mg24/preview

Course outcomes: The students should be able to:

CO1. Explain the role of business analytics in a dynamic business environment.
CO2. Demonstrate modern tools for Statistical Modelling and Visualization.
CO3. Illustrate analytics for Business Analytics and Data Warehousing.
CO4. Implement algorithms for data mining techniques and processes.
CO5. Develop scripts for Text & Web mining and social network analysis.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50) and for the SEE minimum passing mark is 35% of the maximum marks (18 out of 50 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Department of Computer Science Engineering – (Data Science)

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code	BAD714B			Title: Business Analytics								
List of Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO 8	PO9	PO10	PO 11	PO12	To tal
CO-1	1	-	2	-	-	2	-	1	-	-	-	-	06
CO-2	1	-	-	2	2	-	-	1	-	-	-	-	06
Co-3	2	-	-	2	3	2	-	1	-	-	-	-	10
CO-4	3	-	1	3	3	3	-	1	-	-	-	-	11
CO-5	3	-	1	2	1	-	-	1	-	-	-	-	08
Total	10	-	04	09	09	08	-	5	-	-	-	-	41

The Correlation of Program Specific Outcome's (PS0's) and Course Outcome (CO's)

Subject Code	BAD714B	Title: Business Analytics	
List of Course Outcome's	PSO1	PSO2	Total
CO-1	3	-	3
CO-2	1	-	1
CO-3	2	-	2
CO-4	3	-	3
CO-5	3	-	3
Total	12	-	12

Note: 3 = Strong Contribution 2 = Average Contribution 1= Weak Contribution - = No Contribution