



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

COURSE CONTENT

BUSINESS ANALYTICS								
III Semester: MBA								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
CMBE29	Core	L	T	P	C	CIA	SEE	Total
		4	-	-	4	40	60	100
Contact Classes: 45	Tutorial Classes: 01	Practical Classes: Nil			Total Classes: 45			
Prerequisite: Management Information Systems								
SDGs Mapped: SDG 9 (Industry, Innovation and Infrastructure), SDG 4 (Quality Education)								

I. COURSE OVERVIEW:

This course equips with knowledge and skills required for business analytics, including data handling, data science concepts, and analytics techniques. It provides exposure to data warehousing, data mining, text and web analytics, simulation, prescriptive analytics, and decision support systems. Students will also gain insights into big data technologies, Python, machine learning, and AI applications to facilitate effective business decision-making.

II. COURSES OBJECTIVES:

The students will try to learn:

- I. The handling data and business analytical tools that can be used for decision- making in an organization.
- II. The data warehousing concepts, data mining techniques.
- III. The relationships between business processes and analytics applications.
- IV. The prescriptive analytics and its applications across business domains.

III. COURSE OUTCOMES:

At the end of the course students should be able to:

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| CO1 | Contrast on concepts, challenges and framework of business analytics for making effective business decisions. |
| CO2 | Demonstrate data warehousing architecture and data marts for reporting and performance measurement through visual analytics. |
| CO3 | Summarize data mining and text mining techniques to extract and analyze information from structured and unstructured sources. |
| CO4 | Develop suitable system for web mining process to web analytics and easy access of data. |
| CO5 | Experiment with prescriptive analytics and its models to develop effective decision making support system. |
| CO6 | Distinguish the Finance, HR and Marketing analytics and big data technologies for applying them in their respective fields. |

IV. COURSE CONTENT:

MODULE - I: INTRODUCTION TO BUSINESS ANALYTICS (08)

Introduction to Data, Importance of Analytics, Data for Business Analytics, Big Data, Business Analytics in Practice. Data Visualization, Data Visualization Tools, Data Queries, Statistical Methods for Summarizing Data, Exploring Data using Pivot Tables.

MODULE - II: DESCRIPTIVE STATISTICS ANALYTICS (10)

Population and Samples, Measures of location, Measures of Dispersion, Measures of Variability, Measures of Association. Probability Distribution and Data Modeling, Discrete Probability Distribution, Continuous Probability Distribution, Random Sampling from Probability Distribution, Data Modeling and Distribution fitting.

MODULE - III: PREDICTIVE ANALYTICS (09)

Karl Pearson Correlation Technique, Multiple Correlation, Spearman's Rank Correlation, Simple and Multiple Regression, Regression by the Method of Least Squares.

Building Good Regression Models. Regression with Categorical Independent Variables, Linear Discriminant Analysis, One-Way and Two-Way ANOVA.

MODULE - IV: DATA MINING (10)

Scope of Data Mining, Data Exploration and Reduction, Unsupervised Learning, Cluster Analysis, Association Rules, Supervised Learning, Partition Data, Classification Accuracy, Prediction Accuracy, K-Nearest Neighbors, Classification and Regression Trees, Logistics Regression.

MODULE - V: SIMULATION (08)

Random Number Generation, Monte Carlo Simulation, What If Analysis, Verification and Validation, Advantages and Disadvantages of Simulation, Risk Analysis, Decision Tree Analysis.

V. TEXT BOOKS:

1. James E.Sallis, Geir Gripsrud, Ulf Henning Olsson, Ragnhild Silkset, "Research Methods and Data Analysis for Business Decisions": A Primer Using SPSS, Springer International Publishing, 1e, 2021.
2. Anil Maheswari, Big Data, Tata McGraw Hill, New Delhi, 2e, 2019.
3. U.DineshKumar, "Business Analytics", Wiley, 2017.
4. Laursen, Thorlund, "Business Analytics for Managers", Wiley, 2nd edition, 2017.
5. Sahil Raj, "Business Analytics", Cengage Learning, 3rd edition, 2015
6. Albright, Winston, "Business Analytics - Data Analysis and Decision Making", Cengage Learning, 5th edition, 2015.

VI. REFERENCE BOOKS:

1. Artun, Levin, "Predictive Marketing", Wiley, 2nd edition, 2015.
2. RN Prasad, Seema Acharya, "Fundamentals of Business Analytics", Wiley, 2011.

VII. WEB REFERENCES:

1. <https://www.pdfdrive.com/business-analytics-for-managers-taking-business-intelligence-beyond-reporting-e167628994.html>

VIII. E-TEXT BOOKS:

1. <https://www.pdfdrive.com/business-intelligence-and-analytics-e56416503.html>