23 AN 105: ESSENTIALS OF BUSINESS ANALYTICS

Course Code	**23 AN 105**	Course Delivery Method	Classroom / Blended Mode
Credits	04	CIA Marks	30
No. of Lecture Hours / Week	05	Semester End Exam Marks	70
Total Number of Lecture Hours	75	Total Marks	100
Course Focus	Employability	Entrepreneurship	Skill Development.

COURSE OUTCOMES: By the end of the course, students will be able

CO-1 To equip with types of business analytics, application of analytics in business and to take business decisions.

CO-2 To understand various concepts in business analytics like ETL, Data mining, business intelligence data visualization, etc.

CO-3 To learn about the data and how to deal with different aspects of data processing.

CO-4 To understand how business analytics is used in functional areas and its practical application.

CO-5 To analyse the differences supervised and unsupervised machine learning procedures.

COURSE CONTENT

UNIT-I: Introduction to Business Analytics: Evolution of Business Analytics, Importance of Business Analytics, Integrating Analytics with business operations, Types of Business Analytics: Descriptive, Predictive, Diagnostic and Prescriptive Analytics; Business Analytics Applications, Business Analytics for Competitive Advantage. **(15 Hours)**

UNIT-II: Data Visualization and Business Intelligence: Importance of data visualization Principles of Effective Visualization Techniques, Principles of Effective Data Dashboards; Concept of Business Intelligence, Prerequisites of BI, Popular BI Tools, ETL (Extract-Transform-Load), Business Analytics Process Cycle. **(15 Hours)**

UNIT-III: **Data Mining:** Data Collection Methods, Data Preparation, Data Sampling, Treatment of Missing Data, Identification of Outliers and Errors in Data, Variable Representation, Visual representation, Boxplot , Boxen , Stir, violin, column Profile, Data Summary. **(15Hours)**

UNIT-IV : Analytics in Business Operations : Financial Analytics, Role of Financial Manager, *Financial Models*, Three Statement Model, Discounted Cash Flow (DCF) Model, Consolidation Model, Budget Model; *Human Resource (HR) Analytics*, Importance of HR

Analytics, The 8-box model by Paul Boselie, The HR Value Chain; *Marketing Analytics*, Importance of Marketing Analytics; *Supply Chain Analytics* and its Metrics , Scheduling of resources and assets, Landed Costing ,Transportation Analysis, Demand Planning, Fulfillment Process Analysis, Vendor Analysis, Purchase Order Analysis. **(15 Hours)**

UNIT -V: Big Data and Machine Learning: Introduction to Big Data, Big Data Concepts, 5Vs of Big Data, Big Data in Business, Business Analytics vs Big Data; Introduction to Machine Learning Concept, Importance of Machine Learning, Types of Machine Learning; Introduction to Supervised Learning , Unsupervised and Reinforcement Learning; Application of Machine Learning Models in Business, Machine Learning Application , Regression, Clustering & Segmentation. **(15 Hours)**

PRACTICAL COMPONENT:

1. Student need to identify and present the scenario of analytics in industry,
2. Students need to collect various data sets and identify its properties and limitations.
3. Students have to understand various business processes and define the ways to prepare the database and extend it to data mining.
4. Students need to go through multiple samples of Dashboards and understand its relevance.

REFERENCES:

1. Analytics at Work by Thomas H. Davenport, Jeanne G.Harris and Robert Morison, Harvard Business Press, 2010.
2. Getting Started with Business Analytics: Insightful Decision – Making by David Hardoon, GalitShmueli, Chapman & Hall/CRC, 2013.
3. Essentials of Business Analytics by Jeffrey Ohlmann, James J. Cochran, Michael Fry, Jeffrey D. Camm, David Anderson, Thomas Arthur Williams, Dennis Sweeney, Southwestern 2015.
4. Business Intelligence: A Managerial Approach by Efraim Turban, Ramesh Sharda, DursunDelen and Daid King, Pearson Publication, 2012.
5. Business Intelligence Making Decision through Data Analytics, Jerzy Surma, Business Expert Press, 2011.
6. Successful Business Intelligence: Secrets to Making BI a Killer App by CindiHowson, Tata McGraw Hill Edition 2012.
7. R for Everyone: Advanced Analytics and Graphics, Jared Lander, Addison Wesley