

## BBA (Business Analytics) III Year Course Structure for the Batch 2025-2028

### Third Year-V Semester

Course Code	Course Title	Course Type	HPW	Credits	Max Marks (IA+SEE)
DSC- 501	Data Warehousing &Data Mining	DSC- 1C	5	5	40+60
DSC- 502	Programing with R	DSC- 2C	3T+2P	5	40+60
DSC- 503	a) Financial Analytics –I(F) b) Marketing Analytics–I(M) c) HR Analytics –I(HR)	DSC- 3C	4T+1P	5	40+60
MDC	MDC- Multidisciplinary Course	MDC	4	4	20+30
SEC -1	SEC -1: Entrepreneurship and Startup	SEC -1	2	2	20+30
SEC-3	SEC- 3-Internship	SEC-3	2		
	<b>Total Marks</b>		<b>19+4</b>	<b>19+2</b>	<b>400</b>

### Third Year-VI Semester

Course Code	Course Title	Course Type	HPW	Credits	Max Marks (IA+SEE)
DSC - 601	Business Analytics Programming	DSC- 1	3T+2P	5	40+60
DSC - 602	Basics of Python Programming	DSC-2	3T+2P	5	40+60
DSC - 603	a). Financial Analytics – II(F) b). Marketing Analytics –II(M) c). HR Analytics –II(HR)	DSC- 3	4T+1P	5	40+60
SEC -2	SEC-2 Business Communication	SEC -2	2	2	20+30
SEC -4	SEC-4 Soft Skills	SEC -4	2	2	20+30
PR	Project Report	PR	2	Grade	Grade
VAC	Value Added Course	VAC	3	3	20+30
	<b>Total</b>		<b>24</b>	<b>22</b>	<b>450</b>

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**RBVRR WOMEN'S COLLEGE**  
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**Department of Business Management**  
**Year-III, Semester -V**  
**Academic Year – 2026-27**  
**Batch: 2025-28**

**COURSE NO DSC -501**  
**DATA WAREHOUSING AND DATA MINING**

**COURSE OBJECTIVES**

1. Understand concepts related to Data warehouse.
2. Understand the approaches to develop and manage data in data warehouse.
3. Understanding multidimensional data warehouses.
4. Understanding about datamining in context of data warehouse.
5. Understand Techniques and tools of Data Mining.

**COURSE OUTCOMES**

- CO1: Provide an insight into a Data Warehouse and its operational structure in a business organization. (*Understand*)
- CO2: Manage data in Data Warehousing processes such as pre-processing, data cleaning, and transformation. (*Apply*)
- CO3: Design and manage multidimensional data warehouses. (*Analyze*)
- CO4: Apply appropriate data mining tools and techniques in a data warehouse environment. (*Apply*)
- CO5: Develop a conceptual understanding of Web Mining. (*Understand*)

**UNIT1:DATA WAREHOUSING CONCEPTS**

Introduction to Data Warehousing, The need for data warehousing, Operational & Informational Data Stores, Data Warehouse Characteristics, Data Warehouse role & Structure, The cost of warehousing data. Introduction to OLAP &OLTP, Difference between OLAP &OLTP. OLAP Operations

**UNIT2: DEVELOPING DATA WAREHOUSEAND MANAGING**

Building a Data Warehouse, Design/Technical/Implementation Considerations and Data Pre-processing Overview. Data Summarization, Data Cleaning, Data Transformation, Concept Hierarchy, Structure. Patterns & Models, Artificial Intelligence (Overview).

**UNIT3: MULTIDIMENSIONAL DATAWAREHOUSES**

Multidimensional Data Model, Schemas for Multidimensional Data (Star Schema, Snowflake Schema, Fact Constellation), Data Warehouse Architecture, Data Warehouse Design OLAP Three-tier Architecture.

**UNIT 4:-DATAMININGINTRODUCTION**

Definition-Kinds of Data Can be Mined-Kinds of Patterns that Can be Mined- Technologies Used in Data Mining- Integration of a Data Mining system with a Database or a Data Warehouse Major Issues in Data Mining.

## UNIT5: DATAMINING TECHNIQUES

Association Rule Mining, Market Basket Analysis, Apriori Algorithm, Mining Multi level Association Rules-. mining various kind of association rules, from association mining to correlation analysis. Introduction to Classification, Classification by decision Tree, Attribute Selection Measure. Classification vs. prediction, Issues regarding classification and prediction, Clustering: Problem Definition, Clustering Overview, Evaluation of Clustering Algorithms, Partitioning Clustering -K-Means Algorithm, K-Means Additional issues. Web Mining: Introduction to Web Mining, Web content mining, Web usage mining, Web Structure mining.

### SUGGESTED BOOKS

1. Data Warehousing, Data Mining, and OLAP, Alex Berson, First Edition, Tata McGraw Hill.
2. Modern Data Warehousing, Mining & Visualization: Core Concepts, George M. Marakas, First Edition, Pearson Education.
3. Data Warehousing: Architecture & Implementation, Hawkin, Prentice Hall.
4. Data Mining, Data Warehousing and OLAP, Sharma, Gajendra, Second Edition.
5. Data Mining: Modelling Data for Marketing, Risk and Customer Relationship Management, Rud, Olivia, Paperback Edition.

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**COURSE NO DSC -502**  
**PROGRAMMING WITH R**

**Course Objectives/Course Description**

1. This course is used to provide an introduction to the R programming language that combines standard programming capabilities with statistical analysis.
2. The course also gives students the ability to perform data analysis and statistical computing.
3. The course also covers basic data types and operations.
4. The course includes functions and packages.
5. The course also covers charts and graphs.

**Course Outcome**

**CO1:** Analyze data using the statistical tool R. (Analyze)

**CO2:** Create vectors, lists, matrices, arrays and data frames using R. (Apply)

**CO3:** Apply the different Arrays and Data using different data frames (Apply)

**CO4:** Evaluate the Flow controls and functions of R Programming (Evaluate)

**CO5:** Draw and Evaluate the different Charts using different graph functions. (Evaluate)

**Unit-I: Introduction:**

Features of R – How to install and run R – Comments in R – Reserved words – Identifiers – Constants, Variables – Operators (Arithmetic, Relational, Logical, Assignment, Miscellaneous Operators) – Operator Precedence – Strings.

**Unit-II: Basic Data Types, Vectors, Lists and Matrices**

Basic Data Types (Numeric, Integer, Complex, Logical, Character) – Creating, combining vectors – Accessing Vector Elements – Modifying Vectors – Deleting Vectors- Vector arithmetic and Recycling – Vector Element Sorting – Reading Vectors – Creating Lists – Accessing List elements – Updating List Elements – Merging Lists – List to Vector conversion – Creating matrices – Accessing Matrix Elements – Matrix Arithmetic – Matrix Manipulation – Matrix Operations.

**Unit-III: Arrays, Factors and Data Frames:**

Creating Arrays – Accessing Array Elements – Array Element Manipulation – Array Arithmetic – Creating factors – Accessing Factor Components – Modifying factors – Creating Data Frames – Accessing Data Frames Components – Modifying Data Frames – Aggregating Data – Sorting Data Merging Data – Reshaping data – Sub-setting data – Data Type Conversion

**Unit-IV: Flow Control & Functions**

Decision making (using if statement - if...else statement - Nested If...Else statement –if else function Switch statement) – Loops (for loop – while Loop – repeat Loop) – Loop Control statements

break statement – next statement – Function definition and Function Calling – Function without

arguments, Built-in functions (Mathematical functions – Character functions – statistical functions – date and time functions – other functions – Recursive function)

### Unit-V: Charts & Graphs

Bar charts (Plotting bars vertically and horizontally – Plotting categorical data – Grouped bar chart Stacked bar chart) – Histogram (Simple histogram – Histogram with labels, breaks and density lines) Line graphs (Simple line graph & Graphs with Multiple lines) - Pie charts (Simple Pie chart –Pie chart with slice percentages – 3D Pie charts)

### SUGGESTED BOOKS

1. An Introduction to R, W. N. Venables & D. M. Smith, R Core Team, 2018.
2. Simple R: Using R for Introductory Statistics, John Verzani, CRC Press, Taylor & Francis Group, 2005.
3. R for Data Science, Hadley Wickham & Garrett Golemund, O'Reilly Media, 2017.
4. The Art of R Programming, Norman Matloff, No Starch Press, 2011.
5. Practical Statistics for Data Scientists, Peter Bruce & Andrew Bruce, O'Reilly Media, 2020.

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**COURSE NO DSC -503**  
**COURSE:(A): FINANCIAL ANALYTICS–I(F)**

**COURSE OBJECTIVES:**

1. Understand the critical role of financial analytics and contemporary workplace situation.
2. Use appropriate methodology for conducting analytics of financial data.
3. Use simple and multiple regression for forecasting purpose.
4. Apply advanced technique of time series for predicting the future trend.

**COURSEOUTCOMES**

CO1: Explain the concepts of financial analytics and apply basic Excel tools for financial data analysis. (*Understand*)

CO2: Prepare and analyze financial statements using Excel for decision-making. (*Apply*)

CO3: Apply forecasting techniques such as percent of sales and regression for financial prediction. (*Apply*)

CO4: Develop integrated financial models including income statement, balance sheet, and cash flow statement in Excel. (*Apply*)

CO5: Analyze financial performance using ratio analysis and interpret trends using Excel. (*Analyze*)

**UNITI: INTRODUCTION:**

What is Financial Analytics? Importance of Financial Analytics, Types of Financial Analytics, Financial Analysis Tools and Techniques. Understanding Excel for Financial Analytics – Parts of the Excel Screen, Navigating the Worksheet, Entering Formulae, Using Excel Built-in Functions, Creating Graphics and Formatting Charts.

**UNITII: BASIC FINANCIAL STATEMENTS:**

Introduction–Income Statement, Balance Sheet, building a Basic Income statement and Balance Sheet in Excel, Improving readability, Custom number formats. Perform a basic analysis and interpretation of the financial statements.

Creating common-size income statement and Common size balance sheet using Excel, Creating Common size statement of Cash flows using Excel's Outlier.

**UNITIII: FINANCIAL STATEMENT FORECASTING:**

The Percent of Sales Method, forecasting the income statement, forecasting the assets side, forecasting the liabilities side, and other forecasting methods such as linear trend extrapolation and regression analysis are important techniques used in financial forecasting. These methods help in estimating future financial performance based on historical data and trends, enabling better planning and decision-making.

#### **UNITIV: COMPREHENSIVE FINANCIAL MODELING USING EXCEL:**

**Introduction – How Financial Models Work:**Collecting and analyzing historical data, selecting the key forecast drivers, modelling the income statement, modelling the balance sheet, modelling interest and circular references, and modelling the cash flow statement are essential components of financial modelling. These steps help in building a structured financial model that supports accurate forecasting and effective financial decision-making.

**UNIT – V: ANALYSIS OF FINANCIAL STATEMENTS:** Ratio analysis including liquidity, activity, leverage and profitability ratios. Using ratios for Trend Analysis, Year-wise comparison, Comparison to Industry Averages using Excel.


#### **SUGGESTED BOOKS**

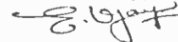
1. Arora, Financial Risk Analytics Measurement Management Examples-Wiley
2. MarkJ. Bennet, DirkL. Hugen(2016), Financial Analytics with R, Cambridge: Cambridge University Press.
3. Chandan Sengupta (2011), Financial Analysis and Modeling using Excel and VBA, New Delhi: Wiley India.
4. Scott Proctor K (2010), Building Financial Models with Microsoft Excel, New Delhi: Wiley India
5. Timothy Mayes, Financial Analysis with Microsoft Excel, Cengage Publishers


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**COURSE NO DSC -503**  
**COURSE:(B) MARKETING ANALYTICS–I(M)**

**COURSE OBJECTIVES**

1. Appreciate the importance of competitive advantages leveraged by analytics
2. Understand the existence of the tools, the advantages and limitations of each tool;
3. Can apply these tools, interpret the input and communicate the output from these tools and models, and apply them to assist marketing and other business decisions.

**COURSE OUTCOMES:**

- CO1:** Understand marketing metrics such as market share, customer satisfaction, and brand indices, and use Excel tools for summarizing marketing data. (*Understand*)
- CO2:** Apply pricing techniques including demand estimation, price optimization, and pricing strategies for decision-making. (*Apply*)
- CO3:** Apply forecasting techniques such as simple and multiple regression for predicting sales. (*Apply*)
- CO4:** Analyze forecasting methods in special events by modelling trend, seasonality, and advanced techniques. (*Analyze*)
- CO5:** Evaluate product-related decisions using conjoint analysis, logistic regression, and discrete choice models. (*Evaluate*)

**UNIT – I: INTRODUCTION TO METRICS:**

Share of Hearts Minds and Markets – Market Share, Relative Market Share, Market Concentration, Brand Development Index, Category Development Index, Penetration, Share of Requirements, Heavy Usage Index, Awareness Attitudes and Usage, Customer Satisfaction, Willingness to Recommend Net Promoter, Willingness to Search. Using Excel to Summarize Marketing Data: Slicing and Dicing Marketing Data with Pivot Tables – Using Excel Charts to Summarize Marketing Data – Using Excel Functions to Summarize Marketing Data.

**UNIT – II: PRICING:**

Estimating Demand Curves and Using Solver to Optimize Price –Price Bundling Nonlinear Pricing – Price Skimming and Sales.

**UNIT – III: FORE CASTING:** Simple Linear Regression and Correlation – Using Multiple Regression to Forecast Sales.

**UNIT – IV: FORECASTING IN THE EVENT OF SPECIAL EVENTS:**

Modelling Trend and Seasonality & Other Forecasting Methods [Ratio to Moving Average Winter Method / Neural Networks].

**UNIT – V: PRODUCT RELATED DECISION:**

Product Attribute Analysis [Conjoint] –Logistic Regression – Discrete Choice Analysis

&Random Utility Theory.

### SUGGESTED BOOKS

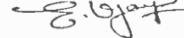
1. Gupta – Marketing Analytics – Wiley.
2. Principles of Marketing Engineering, 3rd Edition, Gary L. Lilien, Arvind Rangaswamy, and Arnaud De Bruyn.
3. Wayne L. Winston – Marketing Analytics: Data-Driven Techniques with Microsoft Excel, John Wiley & Sons.
4. Marketing Data Science: Modelling Techniques in Predictive Analytics with R and Python, Thomas W. Miller, Pearson.
5. Data-Driven Marketing: The 15 Metrics Everyone in Marketing Should Know, Mark Jeffery, Wiley.

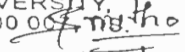
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**COURSE NO DSC -503**  
**COURSE:(C) HR ANALYTICS–I(HR)**

**COURSE OBJECTIVES:**

1. To understand HR Analytics
2. To design metrics for HR Analytics
3. To perform HR Analytics using Excel

**COURSE OUTCOMES:**

- CO1: Explain the concept, evolution, importance, and challenges of HR Analytics in modern HRM. *(Understand)*
- CO2: Apply HR analytics frameworks and design metrics aligned with organizational strategy. *(Apply)*
- CO3: Analyze HR data using appropriate data collection, cleaning, and analytical techniques. *(Analyze)*
- CO4: Perform and interpret statistical analysis of HR data using Excel tools. *(Apply)*
- CO5: Develop and implement workforce analytics approaches for effective decision-making and Performance improvement. *(Create)*

**UNIT I: INTRODUCTION TO HR ANALYTICS**

Introduction, Traditional HRM, Changing trends in HRM and emergence of strategic HRM, HR analytics phase (2010 onward), Importance of HR Analytics, Challenges of HR Analytics

**UNIT II: UNDERSTANDING HR ANALYTICS**

The Analytics Process Model (APM) and Its Phases, Understanding HR indicators, metrics and data, Frameworks for HR Analytics: LAMP Framework, HCM 21 Framework, Approaches for Designing HR Metrics -- The Inside-Out Approach -- The Outside-In Approach – Align HR Metrics with Business Strategy, Goals and Objectives -- Link HR to the Strategy Map

**UNIT III: HR ANALYTICS TOOLS AND TECHNIQUES**

Importance of data, Types of data, Data capturing methods, Data examination and purification, Data analysing techniques

**UNIT IV: USING EXCEL FOR HR ANALYTICS**

Statistics for HRM, Statistical analysis for HR (regression analysis, measures of central tendency), Graphs, tables, spreadsheets

**UNIT V: HOW TO CONDUCT A PURPOSEFUL WORKFORCE ANALYTICS**

Key Influencers in the HR Analytics Process, Model for adoption of HR Analytics, Application and status of HR analytics

**SUGGESTED BOOKS:**


1. Rama Shankar Yadav and Sunil Maheshwari, HR Analytics Connecting Data and Theory, Wiley
2. Fitz-Enz, J., The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments, American Management Association
3. Bassi, L., Carpenter, R., and Mc Murrer, D., HR Analytics Handbook, Reed Business
4. Prasad, B.V.S., and Sangeetha, K., HR Metrics: An Introduction, IUP
5. Becker, B.E., Huselid, M.A., Ulrich, D., The HR Scorecard: Linking People, Strategy and Performance, Harvard Business School Press

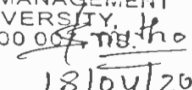
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**SEC-1- ENTREPRENEURSHIP AND START-UPS**

**COURSE OUTCOMES**

After the completion of this course, the students will be able to:

**CO1:** Understand the concept of Entrepreneur, Startup- nature growth and startup ecosystem. (Understand)

**CO2:** Analyse the steps in Startup Establishment. (Analyse)

**UNIT-I: ENTREPRENEURSHIP & START-UP:**

Concept of Entrepreneur, Characteristics of an Entrepreneur. Start-up -Nature and significance, Growth of start-ups in India, Start-up ecosystem in India-Govt Policies, Start-up funding, Incubation Centres, Training programs.

**UNIT-II: STEPS IN STARTUP ESTABLISHMENT:**

Steps in startup establishment: Ideation-Generating a business idea, Validation -Testing the idea in the market, Planning - Preparing a business model and strategy, Development-Creating the product (MVP), Launch - Introducing the product to customers, Growth - Increasing sales and customers, Scaling - Expanding the business, Exit- Selling or sustaining the business

**SUGGESTED BOOKS:**

1. Vasanth Desai, "DynamicsofEntrepreneurialDevelopmentandManagement",2007, HPH, Millenium Edition.
2. S.S. Khanka, "EntrepreneurialDevelopment",2007, S. Chand & Co. Ltd.
3. Poornima. M Charantimath, "EntrepreneurialDevelopmentandSmallBusinessEnterprises"2006, Pearson Education.
4. DavidH. Hott, "Entrepreneurship New Venture Creation", 2004, PHI.
5. Arya Kumar, "Entrepreneurship: Creating and Leading an Entrepreneurial Organization." Pearson India
6. Robert D. Hisrich, Michael P. Peters, "**Entrepreneurship**" (11th Edition) McGraw Hill

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**COURSE CODE: DSC-601**  
**COURSE**  
**BUSINESSINTELLIGENCEANDDATA VISUALIZATION**

**COURSE OBJECTIVES**

1. To understand the concepts of Business Intelligence
2. To understand the relevance of Data Visualization in Business
3. To provide hands-on working with Tableau software
4. To understand the methods of presentation, creating dashboards and animations

**COURSE OUTCOMES**

- CO1: Explain the concepts, architecture, and components of Business Intelligence and its analytical process. (*Understand*)
- CO2: Interpret data using various visualization techniques and dashboards for business decision-making. (*Analyze*)
- CO3: Create basic and advanced charts and maps in Tableau using multiple data sources. (*Apply*)
- CO4: Apply calculations and data manipulation techniques in Tableau using user-defined fields. (*Apply*)
- CO5: Design and customize interactive dashboards and visualizations in Tableau for effective data presentation. (*Create*)

**UNIT I: INTRODUCTION TO BUSINESS INTELLIGENCE**

Definition of BI – Historical Perspective of BI – Architecture of BI – Data Warehouse, Business Analytics, Business Performance Management, User Interface, Cyclical process of a business intelligence analysis

**UNIT II: DATA VISUALIZATION**

Data and Information Visualization – A brief history of Data Visualization – Data Visualization for businesses – Different types of Charts – Business Activity Monitoring through Dashboard – Emergence of Data Visualization and Visual Analytics

**UNIT III: DATA VISUALIZATION WITH TABLEAU (1)**

Working with Tableau Data Source and Basic Charts: Introduction to Tableau, Connecting to Data Source: Text Files, Excel, Access, other databases, merging multiple data sources, Univariate Charts – Creating tables, bar graphs, pie charts, histograms, line charts, stacked bar graphs, box plots, Showing aggregate measures

Bivariate Charts – Creating tables, scatter plots, swapping rows and columns, adding trend lines, selecting color palettes, using dates

Multivariate Charts and Maps: Facets, area charts, bullet graphs, dual axes charts, Gantt charts, heat maps. Maps – Setting geographical roles, placing marks on map, overlaying demographic data, choropleth maps, polygon shapes, customizing maps

## UNIT IV: DATA VISUALIZATION WITH TABLEAU (2)

User defined fields: Using predefined fields, calculating percentages, applying if-then logic, applying logical functions, showing totals and percentages, discretizing data, manipulating text, aggregate data

## UNIT V: DATA VISUALIZATION WITH TABLEAU (3)

Customization: Adding title and caption, font size and colors, adding various marks, adding reference lines, using presentation mode, adding annotation, adding drop-down selectors, search box selectors, slider selectors, creating dashboards, creating animated visualizations

## SUGGESTED BOOKS

- 1) Efraim Turban, Ramesh Sharda, Dursun Delen, "Decision Support and Business Intelligence Systems", Pearson
- 2) Nandeshwar, A., Tableau Data Visualization Cookbook, Mumbai: PACKT/ Shroff Publishers.
- 3) Iliinsky, N.& Steele, J., Designing Data Visualizations, Mumbai: O "Reilly/ Shroff Publishers.
- 4) Milligan, N. J., Learning Tableau, Mumbai: PACKT/Shroff Publishers.
- 5) Jones, B., Communicating Data with Tableau, Mumbai: PACKT/Shroff Publishers.

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**COURSE NO DSC -602**  
**BASICS OF PYTHON PROGRAMMING**

**COURSE OBJECTIVES**

1. This course mainly focuses on understanding the principles and techniques of the Python programming language for business applications.
2. The course includes an introduction to the fundamentals of Python and solving case studies related to business analytics.

**COURSE OUTCOME**

**CO1:** Demonstrate the understanding of basic programming terminologies of python.(Understand)

**CO2:** Interpret the most common analytical and visualization packages of python. (Apply)

**CO3:** Application of Business fundamentals and data pre processing techniques (Apply)

**CO4:** Demonstrate and evaluate Time Series analysis of business data (Analyze)

**CO5:** Design the business analytics prediction model with the use of real-time data.  
(Evaluate)

**Unit-I: Introduction to Python**

Introduction – Python program structure, keywords, Constants, Variables, Operators.  
Data Structures – Series, List, tuple, dictionary, string & Data frames Control Statements - if-else, loops, functions Object-Oriented programming fundamentals

**Unit-II: Python Packages**

Numpy- Introduction to Numpy, Operations & Indexing Pandas – Introduction to Pandas, Operations on series and data frames, handling missing data, Group by, Merging and joining data frames Matplotlib – Introduction to Data Visualization with matplotlib, Pandas Visualization, Time Series Visualization.

**Unit-III: Exploratory Data Analysis**

Basics of Exploratory data analysis. Understanding the data distribution. Data Analysis Metrics. Demonstration of case studies using the datasets such as Healthcare data, Whether data, Sales and purchase data.

**Unit-IV: Time Series Analysis of Financial data**

Introduction to Time Series Analysis, Decomposing time series, Testing and correcting stationarity in time series. Time series modelling with exponential smoothing methods, Modeling and Forecasting time series with ARIMA. Stock price forecasting using ARIMA

**Unit-V: Prediction Model Building and NLP**

Introduction to Scikit learn package. Linear Regression- Introduction to Linear Regression. Implementation of Linear Regression Model to predict the target variable. Logistic Regression- Introduction to Logistic Regression. Implementation of Logistic Regression Model to predict the target variable. NLP - Understanding Natural Language Processing Concept. Understanding the polarity and sentiment from the business documents through a case study.

## SUGGESTED BOOKS

1. W. McKinney, *Python for Data Analysis: Data Wrangling with Pandas, NumPy, and Python*, 2nd ed., O'Reilly Media, 2017.
2. F. Nelli, *Python Data Analytics: With Pandas, NumPy, and Matplotlib*, 2nd ed., A Press, Berlin, Germany, 2018.
3. Fandango, *Python Data Analysis – Second Edition*, Packt Publishing, 2017.
4. Wes McKinney, *Python for Data Analysis Cookbook*, O'Reilly Media, 2019.
5. Jake VanderPlas, *Python Data Science Handbook: Essential Tools for Working with Data*, O'Reilly Media, 2016.

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**COURSE CODE: DSC – 603**  
**COURSE:(A) FINANCIAL ANALYTICS-II(F)**

**COURSE OBJECTIVES:**

1. Understand the critical role of financial analytics and contemporary workplace situation.
2. Use appropriate methodology for conducting analytics of financial data.
3. Use simple and multiple regression for forecasting purpose.
4. Apply advanced technique of time series for predicting the future trend

**COURSE OUTCOMES**

- CO1:** Prepare and analyze cash budgets using Excel, including what-if analysis for decision- making. (Apply)
- CO2:** Calculate break-even point and perform leverage analysis using Excel tools like Goal Seek. (Apply)
- CO3:** Analyze time value of money concepts and compute financial variables using Excel. (Analyze)
- CO4:** Evaluate bond valuation measures and returns using Excel-based financial calculations.(Evaluate)
- CO5:** Apply equity valuation models and CAPM to determine stock value using Excel. (Apply)

**UNIT I: CASH BUDGET**

The Worksheet Area – Using Date functions, Calculating Text Strings, Sales and Collections, Purchases and Payments, Collections and disbursements, Calculation of the end balance using Excel, Using Cash Budget for What-if analysis

**UNIT II: BREAKEVEN POINT**

Calculating Breakeven Point in Excel, Using Goal Seek to calculate Break even Point, Leverage Analysis using Excel – Degree of Operating Leverage, Financial Leverage and Combined Leverage, Linking Breakeven and Leverage Measures

**UNIT III: TIME VALUE OF MONEY**

Present Value and Future Value of Annuity, uneven cash flows, solving for Interest Rate and Period, solving for yield in uneven cash flows, non annual compounding periods using Excel

**UNIT IV: BOND VALUATION**

Features and types of fixed income securities, Bond yield measures – Current yield, holding period return, YTM, AYTM and YTC, Bond duration, Valuation of deep discount bonds, Calculation of the various Bond return measures in Excel

## UNIT V: EQUITY VALUATION

Features of Equity, Approaches to valuation of Common Stock, Dividend Discount Model, Earnings Capitalization Models, Price-Earnings Multiplier Approach, Systematic and Unsystematic Risk, Capital Asset Pricing Model (CAPM), Calculate the valuation of common stock through various methods in Excel

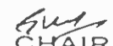
### SUGGESTED BOOKS

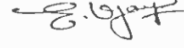
1. Arora, Financial Risk Analytics Measurement Management Examples-Wiley
2. MarkJ. Bennet, DirkL. Hugen (2016), Financial Analytics with R, Cambridge: Cambridge University Press.
3. Chandan Sengupta (2011), Financial Analysis and Modeling using Excel and VBA, New Delhi: Wiley India.
4. Scott Proctor K (2010), Building Financial Models with Microsoft Excel, New Delhi: Wiley India
5. Timothy Mayes, Financial Analysis with Microsoft Excel, Cengage Publishers

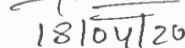
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**RBVRR WOMEN'S COLLEGE**  
**(Autonomous)**  
**Department of Business Management**  
**Year-III, Semester -VI**  
**ACADEMIC YEAR – 2027-28**  
**BATCH: 2025-28**  
**COURSE CODE: DSE – 603**  
**COURSE: MARKETINGANALYTICS–II(M)**

**COURSEOBJECTIVES**

1. Appreciate the importance of competitive advantages leveraged by analytics;
2. Understand the existence of the tools, the advantages and limitations of each tool;
3. Can apply these tools, interpret the input and communicate the output from these tools and models, and apply them to assist marketing and other business decisions.

**COURSE OUTCOMES:**

- CO1:**Analyze customer lifetime value and apply it for marketing decisions and resource allocation. (*Analyze*)
- CO2:** Apply segmentation techniques such as clustering and classification trees for market analysis. (*Apply*)
- CO3:** Evaluate retail analytics methods like market basket analysis and optimize sales and marketing efforts. (*Evaluate*)
- CO4:**Assess the effectiveness of advertising strategies and apply digital marketing models. (*Evaluate*)
- CO5:** Develop dashboards using visualization tools for effective marketing data analysis and presentation. (*Create*)

**UNIT I: CUSTOMER VALUE**

Calculating Lifetime Customer Value – Using Customer Value to Value a Business – Customer Value, Monte Carlo Simulation, and Marketing Decision Making – Allocating Marketing Resources between Customer Acquisition and Retention

**UNIT II: MARKET SEGMENT**

Clustering – User-Based Collaborative Filtering – Using Classification Trees for Segmentation

**UNIT III: RETAIL ANALYTICS**

Market Basket Analysis and Lift – Allocating Retail Space and Sales Resources – Identifying the Sales to Marketing Effort Relationship

**UNIT IV: ADVERTISING ANALYTICS**

Measuring the Effectiveness of Advertising – Media Selection Models – Pay per Click Advertising Introduction to Internet and Social Marketing

**UNIT V: INTRODUCTION TO DASHBOARD**

Need for Visualization – Various visualization tools – Using visualization tools for Marketing data – Creating dashboards

## SUGGESTED BOOKS

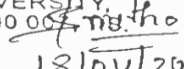
1. Gupta, *Marketing Analytics*, Wiley
2. Lilien, Gary L., Rangaswamy, Arvind & De Bruyn, Arnaud, *Principles of Marketing Engineering*, 3rd Edition
3. Winston, Wayne L., *Marketing Analytics: Data-Driven Techniques with Microsoft Excel*, John Wiley & Sons
4. Berry, Michael J. A. & Linoff, Gordon S., *Data Mining Techniques: For Marketing, Sales, and Customer Relationship Management*
5. Provost, Foster & Fawcett, Tom, *Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking*

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**ACADEMIC YEAR – 2027-2028**  
**BATCH: 2025-28**  
**COURSE CODE: DSC – 603**  
**COURSE: HR ANALYTICS–II(HR)**

**COURSEOBJECTIVES:**

1. To understand HR Analytics
2. To design metrics for HR Analytics
3. Perform HR analytics using Excel

**COURSEOUTCOMES:**

- CO1:** Analyze customer lifetime value and apply it for marketing decision-making and resource allocation. (*Analyze*)
- CO2:** Apply market segmentation techniques such as clustering and collaborative filtering for customer analysis. (*Apply*)
- CO3:** Analyze retail analytics methods like market basket analysis to improve sales and marketing effectiveness. (*Analyze*)
- CO4:** Analyze advertising effectiveness and apply digital marketing models for better media decisions. (*Analyze*)
- CO5:** Analyze and develop dashboards using visualization tools for effective marketing data analysis and presentation. (*Analyze*)

**UNIT I: APPLICATIONS OF HR ANALYTICS**

Staffing, supply and demand forecasting, Recruitment and Selection, Training and Development, Performance Appraisal, Talent Management, Employee engagement, Compensation management

**UNIT II: ATTRITION ANALYTICS**

Learning and Development Analytics, Diversity Analytics, Employee satisfaction analytics

**UNIT III: MEASURING HR CONTRIBUTION**

Developing HR Scorecard, Developing HR Analytics, HR Analytics Culture, Analytics for decision making

**UNIT IV: INTRODUCTION TO DASHBOARD**

Need for Visualization – Various visualization tools – Using visualization tools for HR data – Creating dashboards

**UNIT V: FUTURE OF HR ANALYTICS**

Introduction, Factors determining adoption of HR Analytics, HR Analytics as a Change Management Process, HR Analytics Adoption: Responsibility of HR Department, HR analytics and job market

**SUGGESTED BOOKS:**

1. Rama Shankar Yadav and Sunil Maheshwari, HR Analytics Connecting Data and Theory, Wiley
2. Fitz-Enz, J., The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments, American Management Association
3. Bassi, L., Carpenter, R., and McMurrer, D., HR Analytics Handbook, Reed Business
4. Prasad, B.V.S., and Sangeetha, K., HR Metrics: An Introduction, IUP
5. Becker, B.E., Huselid, M.A., Ulrich, D., The HR Scorecard: Linking People, Strategy and Performance, Harvard Business School Press

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**Department of Business Management**  
**Year-III, Semester -VI**  
**ACADEMIC YEAR – 2027-28**  
**BATCH: 2025-28**  
**Course Type: Skill Enhancement Course (SEC-2)**

**Course Title: Business Communication**

**Course Objectives**

1. To enhance professional presentation and interpersonal communication abilities
2. To familiarize students with formal business communication formats and etiquette

**Course Outcomes**

By the end of this course, students will be able to:

1. Apply appropriate communication strategies in organizational settings (Apply)
2. Draft formal business documents such as letters, emails, and reports (Apply)

**UNIT I: Fundamentals of Business Communication**

Meaning, nature, and importance of business communication, Process of communication, Types of communication: Verbal (oral and written), Non-verbal communication (body language, gestures, tone) Barriers to communication and ways to overcome them, Principles of effective communication (7 Cs of communication)

**UNIT II: Business Communication in Practice**

Business correspondence: Formal letters (inquiry, complaint, order, job application), Email writing (format and etiquette), Report writing (basic structure and types), Resume writing and cover letter preparation, Presentation skills: Planning and delivering presentations, Use of visual aids (PPT basics), Group communication: Meetings and group discussions.

**Suggested Books:**

1. Business Communication – Dr. Krishnamacharyulu & Dr. Lalitha Ramakrishnan
2. Essentials of Business Communication – Rajendra Pal & J.S. Korlahalli
3. Business Communication – Meenakshi Raman & Prakash Singh
4. Basic Business Communication – Raymond V. Lesikar & Marie E. Flatley
5. Effective Business Communication – Herta A. Murphy, Herbert W. Hildebrandt & Jane P. Thomas

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