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# Bhavan's Vivekananda College

**of Science, Humanities and Commerce**

**(Sainikpuri, Secunderbad, Telangana – 500094)**

**Autonomous College – Affiliated to Osmania University**

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## Department of Management Studies

## BBA (Honours) – Business Intelligence and Analytics

## II Year III Semester

| S.no: | Course | Type of Course | No of credits | HPW | CIA+SEE |
|---|---|---|---|---|---|
| 1 | Skill Enhancement course 1 | SEC 1 | 2 | 2 | 15+35 |
| 2 | Skill Enhancement course 2 | SEC 2 | 2 | 2 | 15+35 |
| 3 | Principles of Marketing | DSC | 5 | 5 | 30+70 |
| 4 | Financial Management | DSC | 5 | 5 | 30+70 |
| 5 | Descriptive business Analytics | DSC | 4 | 4 | 30+70 |
| 6 | Introduction to Business Intelligence | DSC | 5 | 5 | 30+70 |
| 7 | Data Visualization using Power BI | Practical | 2 | 4 | 50 |
| Total | | | 25 | 27 | 550 |

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## Department of Management Studies

## BBA (Honours) – Business Intelligence and Analytics

### II Year IV Semester

| S.no: | Course | Type of Course | No of credits | HPW | CIA+SEE |
|---|---|---|---|---|---|
| 1 | Skill Enhancement course 1 | SEC 1 | 2 | 2 | 15+35 |
| 2 | Skill Enhancement course 2 | SEC 2 | 2 | 2 | 15+35 |
| 3 | Human Resource Management | DSC | 5 | 5 | 30+70 |
| 4 | Research Methodology | DSC | 5 | 5 | 30+70 |
| 5 | Predictive Business Analytics | DSC | 5 | 5 | 30+70 |
| 6 | Introduction to R Programming | DSC | 4 | 4 | 30+70 |
| 7 | Business Analytics using R programming | Practical | 2 | 4 | 50 |
| 8 | Mini Project | | 2 | 2 | 50 |
| Total | | | 27 | 29 | 600 |

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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Principles of Marketing**

**PAPER CODE: BBAH 381** **PPW: 5**
**YEAR/SEMESTER: II/I** **NO. OF CREDITS: 5**

**COURSE OBJECTIVE** : To provide an exposure to the students pertaining to the nature and scope of marketing, which they are expected to possess when they enter the industry as practitioners and to give them an understanding of the basic philosophies and tools of marketing management.

**UNIT-WISE COURSE OBJECTIVES:**

**CObl** To Impart knowledge on the nature, scope and importance of marketing and core marketing concepts.
**COb2** To Create an understanding of micro and macro marketing environment, Segmentation and Market targeting.
**COb3** To Impart knowledge on various product concepts, new product development, pricing methods and pricing strategies.
**COb4** To Create an understanding of the different tools of the promotion mix, creating effective marketing communication and designing marketing channels.
**COb5** To Create an understanding of Digital marketing and its advantages and disadvantages, online marketing strategies, and Marketing plan and control

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**UNIT – I : INTRODUCTION TO MARKETING** : Nature, Scope and Importance of Marketing, Evolution of Marketing; Core marketing concepts: Production concept, Product concept, Selling concept, Marketing concept, Societal Marketing concept.

**UNIT - II : MARKETING ENVIRONMENT AND MARKET SEGMENTATION** : Marketing Environment: Micro and Macro Environment, Levels of Market Segmentation, Bases for Segmenting Consumer Markets, Bases for Segmenting Industrial Markets. Market Targeting.

**UNIT - III : PRODUCT & PRICING DECISIONS** : Concept of Product, Meaning of a New Product, Need and Limitations for Development of a New Product, Product Life Cycle (PLC), PLC marketing strategies, Product Classification, Product Line Decision, Product Mix Decision, Stages in New Product Development, Reasons for Failure of a New Product, Consumer Adoption Process, Product differentiation and positioning, Pricing Decisions: Concept of Price, Pricing Methods and Pricing Strategies.

**UNIT - IV : PROMOTION AND DISTRIBUTION** : Concept of Promotion Mix, Factors determining promotion mix, Promotional Tools – Advertising, Sales Promotion, Public Relations & Publicity and Personal Selling, Direct Marketing, Distribution: Designing Marketing Channels, Channel functions, Types of Intermediaries, Levels of distribution channels, Types of distribution networks.

**UNIT V: DIGITAL MARKETING**: Introduction to Digital marketing, Digital Consumer, Digital Marketing Advantages and Disadvantages, Challenges, Online marketing strategies-SEO-Search Engine Optimization, Contents of a marketing plan, Types of Marketing Control.

**SUGGESTED READINGS** :


1. Kotler Philip, 'Marketing Management", 2002, 10th Edition (the millennium edition), Prentice Hall of India Pvt.Ltd.
2. Kotler Philip, Garyarmstrong, Prafullay Agnihotri, EU Haque, "Principles of Marketing", 2018, 18th Ed, Pearson Education Prentice Hall of India.


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3. Paul Baines, Chris Fill, Kelly page, "Marketing Management", 2018, 15 Ed., Oxford University Press.
4. Kotler, P., Armstrong, G., Agnihotri, P. Y., & Ul Haq, E.: Principles of Marketing: A South Asian Perspective, Pearson.
5. Dr. Sreeramulu, "Basics of Marketing, (2019), HPH
6. Ramaswamy, V.S. & Namakumari, S.: Marketing Management: Global Perspective-Indian, 2019 Sage Publishing
7. Rajan Saxena, "Marketing Management", 2009, 4th Ed. Tata McGraw H
8. Roger J. Best , "Market – Based Management", 2009, 1st Ed. PHI Learning Pvt. Ltd.

**COURSE OUTCOMES:**

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

**CO1: Define** basic concepts of Marketing.

**CO2: Describe** the characteristics of the micro and macro marketing environment and **outline** the basis on which consumer and business markets are segmented and targeted.

**CO3: Describe** the product life cycle and PLC marketing strategies, **illustrate** the stages in new product development and the consumer product adoption process and effectively position products in different markets. Students will be able to **analyze** and **apply** different pricing strategies in different situations.

**CO4: Design** advertisements and demonstrate the use of various tools of the promotion mix, illustrate the use of different levels of distribution channels and types of distribution networks suitable for different products.

**CO5: Examine** the advantages and disadvantages of Digital Marketing, compare and select online marketing strategies and summarize the contents of a marketing plan and marketing control.

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3. Paul Baines, Chris Fill, Kelly page, "Marketing Management", 2018, 15 Ed., Oxford University Press.
4. Kotler, P., Armstrong, G., Agnihotri, P. Y., & Ul Haq, E.: Principles of Marketing: A South Asian Perspective, Pearson.
5. Dr. Sreeramulu, "Basics of Marketing, (2019), HPH
6. Ramaswamy, V.S. & Namakumari, S.: Marketing Management: Global Perspective-Indian, 2019 Sage Publishing
7. Rajan Saxena, "Marketing Management", 2009, 4th Ed. Tata McGraw H
8. Roger J. Best , "Market – Based Management", 2009, 1st Ed. PHI Learning Pvt. Ltd.

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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Financial Management**

**PAPER CODE: BBAH382** **PPW: 5**

**YEAR/SEMESTER: II/I** **NO. OF CREDITS: 5**

**COURSE OBJECTIVE:**

To acquaint the student with the basic knowledge of finance and the various decisions related to organizational finance decision making process of a business concern.

**UNIT- COURSE OBJECTIVES:**

**COb1** To discuss scope, functions, objectives of financial management and to understand the risk and return relationship, time value of money.

**COb2** To calculate the non- discounted and DCF methods of capital budgeting.

**COb3** To understand the various long term sources of finance, calculate cost of capital

**Cob4** To calculate various relevance dividend theories.

**Cob5** To understand the concept of working capital, estimate working capital requirement and cash budget.

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**Unit I Introduction**

Financial Management - Meaning, , objectives of Financial Management, Definition, Scope of Financial Management, Goals of Financial Management- Profit Maximization, Wealth Maximization, and Welfare. Traditional and Modern approach of Financial management. Financial Decisions-Investment decision, Financing Decision, Dividend Decision, Working Capital Decision. Time value of Money-Discounting, present value, future value and Annuity.

**Problems:** Short Answer problems on Present value and Future value.

**Unit II Capital Budgeting Decision**

Capital Budgeting – Meaning, features, cash flows- Even cash flows, uneven cash flows. Conventional and non- conventional cash flows. Discounted cash flow (DCF), Methods of evaluating investment decisions- Traditional ( Pay back and ARR), Modern ( NPV AND PI).

*** Calculation of Pay back, ARR, NPV, PI using excel.

**Problems:** Payback period, ARR, NPV, PI)

**Unit III Financing Decision**

Sources of long term finance- features of equity shares, preference shares, debentures, long term loans. Capital Structure- Meaning, determinants of capital structure, Concept of Cost of capital – Components of Cost of capital (theory only). Weighted Average Cost of Capital(WACC).

*** Calculation of Weighted Average Cost of Capital (WACC) using Excel.

**Problems:** WACC

**Unit IV Dividend Decision**

Concept of Dividend, meaning Forms of Dividends- Cash Dividend, stock dividend, Dividend policy- Determinants of dividend decision. Relevance theories of Dividends- Walter's Model and Gordon's Model)

**Problems:** Walter's Model and Gordon's Model

**Unit V Working Capital Decisions**

Working capital- meaning- Gross working capital, Net working capital, Determinants of working capital. Estimation of working capital, Management of cash- Preparation of Cash budget(Receipts

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and Payments Method only), cash management strategies- lock box system and concentration banking.

**Problems:** preparation of Cash Budget (Receipts and Payments Method ) and problems on Estimation of working capital

**References:**

1. Prasanna Chandra, "Financial Management Theory and practice", TataMcGraw Hill.
2. Sudershana Reddy, "Financial Management", 2O10 HPH

**Suggested Readings:**

1. IM Pandey, "Financial Management", Vikas publishing Pvt.Ltd.,
2. M Y Khan AND PK Jain, financial management", TMH.

**COURSE OUTCOMES:**

**At the end of the course students will be able to:**

1. Demonstrate functions of financial management in business corporations, Knowledge of the value of money overtime.
2. Calculate the various capital budgeting techniques for taking investment decisions
3. Distinguish between equity, debt and preference capital. Calculate specific cost of capital and weighted average cost of capital.
4. Calculate value of the firm using Walter's Model, Gordon's Model dividend theories.
5. Demonstrate the concept of working capital Determine working capital estimation and calculation of cash budge

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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Descriptive Business Analytics**

**PAPER CODE: BBAH 383** **PPW: 4**
**YEAR/SEMESTER: II/I** **NO. OF CREDITS: 4**

**Course Objective:** The objective of the course is to understand various descriptive analytics techniques and tools and help develop skills in data exploration, visualization, and storytelling for effective decision-making in business settings.

**Unit wise Objectives:**

COb1: To Understand the importance of data in business and distinguish between different types of data.
COb2: To Analyze data sets using probability concepts to make informed business decisions
COb3: To Understand and apply discrete (Binomial, Poisson) and continuous (Normal) probability distributions.
COb4: To Evaluate and select appropriate data visualization techniques for different types of data.
COb5: To Understand the elements of data storytelling

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## UNIT I: Introduction to Descriptive Analytics

Concept of Descriptive Analytics, Application of descriptive analytics, Advantages and Challenges of Descriptive Analytics, Importance of data in business, Types of data (structured, unstructured, etc). Data collection methods, Measurement Scales (nominal, ordinal, interval, ratio)-Types of sampling.

## UNIT II: Probability

Probability: Basic Concepts in Probability – Deterministic and Random Experiments, Trial, Outcome, Sample Space, Event, Operation of events, Mutual Exclusive and Exhaustive events, equally likely and favourable outcomes with examples. – Mathematical, Statistical and Axiomatic definitions of probability with merits and demerits – Conditional Probability, Addition, Multiplication and Bayes Theorem (Only Conceptual Framework with simple numerical problems)

## UNIT III: Probability Distribution

Random variables, discrete probability distributions (Binomial & Poisson Distributions). Continuous probability distributions (Probability Density functions & normal distribution) with simple numerical problems

## UNIT IV: Data Visualization

Data and Information Visualization - History of Data Visualization - Principles of Effective Data Visualization - Charts & Graphs for Data Visualization Techniques (Bar charts, Line charts, Pie charts, Scatter plots) - Choosing the Right Visualization for the Data - Best practices for effective visualization - Business Activity Monitoring through Dashboard - Emergence of Data Visualization and Visual Analytics.

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**UNIT V: Data Storytelling:**

Data Story Telling – concept and need, significance of data story telling- 3 essential elements of data stories – Driving action with Data Stories - Continuum of data story telling (Attributes of data story telling)- story framing – story telling – 6 essential elements of a data story.

**Course Outcomes:**

After Completion of the Course, students will be able to:

CO1: Explain the significance of data in business operations and categorize data into structured, unstructured, etc.

CO2: Analyze data sets using probability concepts (marginal, conditional, joint probabilities) for data-driven decisions.

CO3: Apply discrete (Binomial, Poisson) and continuous (Normal) probability distributions to analyze real-world data sets.

CO 4: Evaluate data visualization techniques (bar charts, line charts, pie charts) for accurate data representation.

CO5: Explain the elements of data storytelling.

**Suggested Readings:**


- SC Gupta and V K Kapoor, Fundamentals of Mathematical statistics, 12th Edition Sultan Chand & Sons,2020
- JK Sharma, Business Statistics, 4th Edition, Vikas publishers, 2014
- Turban, E., Sharda, R., Delen, D. and King, D., Business Intelligence- A Managerial Approach, Pearson Education, New Delhi, 2012.
- Brent Dykes - Effective Data Storytelling_ How to Drive Change with Data, Narrative and Visuals-Wiley (2019)
- Dr. Suvarchala Rani, Dr. N. Chandan Babu , MS. V. Achutamba , "Business Analytics", S Publishers, 2023


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**References**


- Dr.Anil Maheshwari , Data Analytics made Accessible, 2024 Edition
- Claus Wilke , O'Reilly Media(AK Peters Visualization Series) Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures, 2019
- Nathalie Henry Riche, Christophe Hurter, Nicholas Diakopoulos, Sheelagh Carpendale, Data-Driven Storytelling, 1st Edition,2018
- Cole Nussbaumer Knaflic, Storytelling with data. Hoboken, NJ: Wiley, (2015).
- Brett Powell, Expert Techniques for Effective Data Analytics and Business Intelligence,Packt Publishing,2018


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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Introduction to Business Intelligence**

**PAPER CODE: BBAH 384** **PPW: 5**

**YEAR/SEMESTER: II/I** **NO. OF CREDITS: 5**

**OBJECTIVES**

The objective of the course is to provide an understanding of Basic concepts of Business Intelligence

**Unit Wise Objectives:**

COb1: To impart knowledge on the overview of business intelligence concepts

COb2: To make students familiarize the importance of data and data ware houses

COb3: To create an understanding on Business performance management (BPM) concepts

COb4: To make students understand the different methods of data mining to find useful patterns

COb5: To help the students understand the applications of Business Intelligence

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**UNIT I : Business Intelligence**

Business Intelligence – Introduction, Framework of Business Intelligence- Definition, History, Architecture of BI, benefits of BI, Transaction processing versus analytic processing, BI implementation( Appropriate Planning and Alignment with Business Strategy, Developing or acquiring BI,Justification and Cost benefit analysis,Security and protection of privacy, Integration of systems and applications, BI tools and techniques, Major vendors.

**UNIT II Data Warehousing**

Data Warehousing – Definition, and concepts, Characteristics, Data marts, Operational data stores, Enterprise data ware house, metadata, Architectures. Data warehouse process overview. Data integration, ETL. Data warehouse development – Vendors, Development approaches, Representation of data in data ware house, OLAP Vs OLTP, OLAP operations Implementation issues of data warehouse, Administration, security and future trends of data warehouse.

**UNIT III Business Performance Management**

Business performance management(BPM) –Overview, Definition, BPM Vs BI, Strategize, Plan, Monitor, Act and Adjust of BPM, BPM methodologies, technologies and applications, Performance dashboards and scoreboards.

**UNIT IV Data Mining for Business Intelligence**

Data mining for business intelligence– concepts,definitions,Datamining applications,Datamining process,Datamining methods (Classification, Decision Trees, Cluster Analysis and Association Rule), data mining software tools, Data mining privacy issues, myths and blunders

**UNITV Text Mining**

Text Analytics &Text mining – concepts and definitions, Applications of Text mining, Tools - Natural language processing, Challenges in implementation of NLP- Common tasks addressed by NLP.

Webmining (Web Analytics) - overview, web analytics technologies – off site and on site web analytics - Web analytics Metrics (web site

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utility(usability) – Traffic sources – Visitor Profiles - Conversion statistics) - Web Analytics Tools.

**Suggested Readings:**

Turban, E., Sharda, R., Delen, D. and King, D., Business Intelligence- A Managerial Approach,PearsonEducation, NewDelhi, 2012.

**REFERENCE:**

Sonar,R.M.,Nextgeneration Business Intelligence– A Knowledge Based Approach,VIKAS Publications,New Delhi, 2011.

**Course Outcomes:**

After Completion of the Course, students will be able to:

**CO1:** Describe the business intelligence concepts

**COb2:** Examine the importance of data and data warehouses

**COb3:** Explain the Business performance management (BPM) concepts

**COb4:** Compare and Contrast the methods of data mining to find useful patterns

**COb5:** Evaluate the applications of Business Intelligence

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## Department of Management Studies

**PROGRAM NAME: BBA Honors- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Data Visualization using Power BI**

**PAPER CODE: BBA H 385** **PPW: 4**

**YEAR/SEMESTER: II/I** **NO. OF CREDITS: 2**

**Course Objective:**

The objective of this course is to developing practical skills in data visualization using Microsoft Power BI.

**Unit wise Objectives:**

**Cob1**: Explain the features and capabilities of Power BI and demonstrate basic proficiency in using the software.

**Cob2**: Understand relationships between data tables, create calculated columns and measures, and introduce DAX (Data Analysis Expressions).

**Cob3**: Understand basic and advanced data visualization techniques in Power BI, including customization, interactivity, and effective design.

**Cob4**: Understand design principles for effective dashboards and demonstrate proficiency in building interactive dashboards with Power BI.

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1. Data import and Transformation - Importing data from various sources (Excel, CSV, databases)

2. Data cleaning and transformation using Power Query

3. Editor Merging and appending data tables

4. Data Modeling - Understanding relationships between data tables, Creating calculated columns and measures

5. DAX (Data Analysis Expressions)

6. Basic Data Visualizations - Creating basic visualizations (bar charts, line charts, pie charts), Formatting and customizing visualizations

7. Adding interactivity to visualizations (slicers, filters)

8. Advanced Visualizations - Creating advanced visualizations (scatter plots, histograms, treemaps)

9. Custom visuals from Power BI marketplace

10. Dashboard Desing - Design principles for creating effective dashboards

11. Building interactive dashboards with Power BI

12. Adding interactivity and navigation to dashboards.

13. Real-time Data Visualization - Connecting to real-time data sources, Streaming data into Power BI for real-time visualization-

14. Creating real-time dashboards and alerts

**Course Outcomes:**

After Completion of the Course, students will be able to:

**CO1**:Apply Power BI features to import, transform, clean, and merge data from various sources for analysis.

**CO2**: Apply data modeling concepts in Power BI to create relationships, calculated columns, and measures using DAX for effective data analysis.

**CO3**: Able to Create and customize visualizations (bar charts, line charts, pie charts, scatter plots, histograms, treemaps) in Power BI,

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incorporating interactivity and utilizing custom visuals for effective data representation.

**CO4**: Able to Create interactive dashboards in Power BI using real-time data sources, incorporating interactivity, navigation, and alerts for real-time data visualization.

**Suggested Readings:**

- Brett Powell, Mastering Microsoft Power BI: Expert techniques for effective data analytics and business Intelligence, Packt Publishing

**References:**


- Marco Russo &Alberto Ferrari, The Definite Guide to DAX: Business intelligence with Microsoft power BI, SQL Server Analysis service, and Excel, 2nd Edition,2019

- **Greg Deckler**, Learn Power BI: A beginner's guide to developing interactive business intelligence solutions using Microsoft Power BI by Packt Publishing, Kindle Edition


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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: HUMAN RESOURCE MANAGEMENT**

**PAPER CODE: BBAH481** **PPW: 5**

**YEAR/SEMESTER: II/II** **NO. OF CREDITS: 5**

**COURSE OBJECTIVE:**

To interpret basic, underlying principles of Human Resources Management. And to Elucidate how an organisation acquire, motivate, build capacity, deploy and harmonize its Human resources effectively in an organization while highlighting contemporary HR practices.

**COb1** : To Impart basic concepts of HRM.

**COb2** : To Design the process of procurement of Human Resources.

**COb3:** To Define the procedure for assessment & development of Human Resources abilities.

**COb4:** To Explain key concepts, components and factors of Compensation Management.

**COb5:** To impart the knowledge on the Concepts of ER and few contemporary HR practices

**Unit-I: Human Resources Management (HRM):**

Concepts - significance-objectives-scope-functions of HRM, Job Design-job rotation-job Enlargement-job enrichment. Job Analysis: concepts- objectives- Process of Job Analysis -components (Job Description and Job Specification) Methods of Job Analysis.

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Human Resources Planning - Concepts-objectives - Process of HR Planning.

**Unit-II: Procurement of Human Resources:**

Recruitment: Objectives-sources of Recruitment. Selection: Concepts-Selection-Procedure-Tests and Interview. Placement-Process of Placement - Induction - Employee mobility – Promotions – Demotions – Retirements – Transfers – Separations.

**Unit-III: Developing Human Resources:**

Human Resources Development (HRD) - concept-scope-objectives. Training - Need for Training- objectives and benefits of training. Assessing training needs - methods and evaluation of training. Difference between Training and Development. Performance management: concept- performance appraisal-concept- traditional and modern methods of Performance appraisal. Career planning and Development- Career -Career planning - Career planning process -Career Development- Stages of career development.

**UNIT- IV: Compensation Management**

Job Evaluation: concept-methods of Job evaluation. Compensation Management: -components of compensation management- factors affecting Compensation- concepts of minimum wage, living wage and fair wage- wage differentials- Role of Wage Boards. Incentives - Individual Incentives – Individual Incentives (Taylor's and Merrick's differential piece rate system) —Group Incentives (Scanlon andRucker incentive plan) – Organization wide incentive plan (Profit Sharing – ESOPS) fringe benefits- objectives and types.

**Unit-V: Employee Relations and Contemporary HR Practices**

Employee Discipline -Objectives – Indiscipline –Disciplinary Procedure – Employee Grievance - Grievance Redressal mechanism- Collective bargaining – process -Participative Management- Forms. Salient features of Labour codes. Contemporary Practices – Work life balance– strategies. Emotional intelligence -elements.Diversity management – Strategies – HRIS Vs HR Analytics.

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## SUGGESTED READINGS


1. P.Subba Rao, " Essentials of HRM and Industrial Relations," 2013, Himalaya Publishing House Pvt. Ltd.: 5th Edition.
2. Parvin Durai, Human Resource Management, Pearson Education , 2010
3. Michael Armstrong, "Human Resource Management", 2010, Kogan Page.


## REFERENCES


1. Mathis & Jackson, "Human Resource Management", 2009, Cengage.
2. David Lepak, Mary Gower, "Human Resource Management", 2009, Pearson.
3. Paul Banfield, Rebecca Kay, "Human Resource Management", 2009, Oxford.
4. Decenzo, "Human Resource Management", 2008, Wiley.
5. Madhurima Lal, S.Qzaidi, "Human Resource Management", 2009, Excel books.
6. Wayne &Caseia, Ranjeet Nambudri, "Managing Human Resource", 2010, TMH.
7. V.K. Sharma, "Human Resource Management", 2010, Viva Books.


## COURSE OUTCOMES:

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

**CO1:** Explain the concept and functions of HRM

**CO2:** Demonstrate, interpret, predict and organise the process of procurement of Human Resources

**CO3:** Define, outline, and determine key elements of Human Resource Development and Assessment.

**CO4:** Distinguish method for designing relative worth of job through better reward management.

**CO5:** Apply the learnt concepts in maintaining effective employee relations and Explain the contemporary management practices.

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# Bhavan's Vivekananda College

## of Science, Humanities and Commerce

(Sainikpuri, Secunderbad, Telangana – 500094)

Autonomous College – Affiliated to Osmania University

(Re-Accredited with "A" grade by NAAC)

## Department of Management Studies

**PROGRAM NAME: BBA Honors- Business Intelligence and Analytics (w.e.f 2024-25)**

**Course Name: Research Methodology**

**PAPER CODE: BBAH482** **PPW: 5**

**YEAR/SEMESTER: II/II** **NO. OF CREDITS: 5**

**COURSE OBJECTIVE:** To impart knowledge on the fundamental concepts of research methodology, data analysis and report writing.

**UNIT-WISE COURSE OBJECTIVES:**

**Cob1:** To impart knowledge on objectives and types of research and the steps to be followed in a research process.

**Cob2:** To provide an understanding of the various sources of data and sampling design.

**COb3:** To impart knowledge on the types of measurement scales.

**COb4:** To provide an understanding of Hypothesis formulation, different types of tests used in the analysis of data.

**Cob5 :** To impart knowledge on the types of reports and mechanics of writing a good research report.

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**UNIT – I: INTRODUCTION TO RESEARCH:** Meaning of Research, Arbitrary method, Scientific method, Objectives and characteristics of Research – Types of Research: Pure, Applied, Exploratory research, Descriptive, Diagnostic, Evaluation study, Action research, Historical research, Surveys, Research Process.

**UNIT– II: SOURCES OF DATA**: Primary data and Secondary data, Methods of data collection: Survey method, Observation method – Types of observation, Interview, Depth interview, Focus group interview, Experimental method and other methods, Research instruments(questionnaire, schedule, mechanical instruments), Steps in designing a questionnaire, Sampling design-sampling unit, sample size, sampling methods.

**UNIT – III:MEASUREMENT AND SCALING:** Concept of measurement and scaling, Levels of Scales – Nominal, Ordinal, Interval and Ratio Scales –Comparative and Non- Comparative Scales. Reliability and Validity of a scale.

**UNIT – IV: DATA ANALYSIS AND INTERPRETATION:** Hypothesis formulation and testing, Introduction to theoretical concept of ANOVA, McNemar test, Wilcoxon matched pairs test, Mann-Whitney U test, Kruskal-Wallis test, Chi square test problems Multiple Regression (Problem solving with two independent variables)

**Unit – V: REPORT DESIGN, WRITING AND ETHICS IN RESEARCH**

Research report- Significance of report writing –Types of Research reports –Steps in planning to write a report–Layout of a research report – Contents of a Research Report- Ethics in Research – Plagiarism – Essentials of Referencing – Essentials of a good Research Report - Mechanics/Precautions in writing a research report

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**Course Outcomes:**

**CO1**: Explain the nature and scope of research, role of research in decision-making and enumerate the steps in the research process.

**CO2**: Explain the methods of data collection for research, develop the ability to design a questionnaire and describe the methods of sampling.

**CO3**: Describe the various levels of measurement, types of measurement scales, and explain the validity and reliability of a scale.

**CO4**: Formulate and test a hypothesis using different tests such as Chi-square and Multiple regression analysis and Enumerate theoretical knowledge about McNemar, Wilcoxon matched pairs test, Mann Whitney U test, and Kruskal wallis test and develop the ANOVA test.

**CO5**: Explain the methodology and precautions while writing reports, and explain what is plagiarism while writing a report

**Suggested Readings :**


1. O.R. Krishna Swamy (2008) *Methodology of Research in Social Sciences,* HPH.
2. Malhotra, K. Naresh: (2009) *Marketing Research – An applied orientation,* 4th Edition, Pearson, UK.
3. C R Kothari, "Research Methodology Methods and Techniques ", New Age International Publishers.
4. G.C. Beri, (2009) *Business Statistics,* 3rd Edition Tata McGraw Hill Education, India.
5. S L Gupta, "Marketing Research", 2009, Excel Books, New Delhi.


**References:**


1. Rajendra Nargondkar: (2017) *Marketing Research: Texts and Cases* ,Tata McGraw Hill, India
2. Green E. Paul, Tull S.Donald& Albaum, Gerald: "Research for Marketing Decisions", 2006, 6th Ed, PHI.
3. Tull and Hawckins, "Marketing Research", 2000, 4th Ed. Tata McGraw Hill.


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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Predictive Business Analytics**

**PAPER CODE: BBAH483** **PPW: 5**

**YEAR/SEMESTER: II/II** **NO. OF CREDITS: 5**

**Course Objective:**

The main objective of the course is to understand the concepts, tools and techniques and implementation of predictive analytics

**Unit wise Objectives:**

**COb1**: Understand the predictive analytics workflow, including data cleaning, pre processing, feature selection, and engineering, for real-world business applications.

**COb2**: Understand the overview of predictive modelling techniques (regression, classification), model evaluation metrics, overfitting, underfitting, and basics of linear regression.

**COb3**: Comprehend classification algorithms (logistic regression, decision trees, KNN) and model evaluation techniques for classification.

**COb4**: Apply machine learning algorithms, including supervised and unsupervised learning, principal components, K-Means clustering, and neural networks.

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**COb5**: Understand the ethical implications of predictive analytics, legal considerations regarding privacy and bias, and guidelines for the responsible use of predictive models.

**Unit I: Introduction to Predictive Analytics**

Overview of predictive analytics –Advantages, Challenges and applications in predictive analytics - Understanding Data for Predictive Analytics –Data Driven Vs User Driven - Data types -Data Categories–Multidisciplinary nature of predictive analytics

**Unit II: Introduction to Predictive Modelling**

Concept of Modelling Data – Categorizing Models (Predictive Models, Clustering and Classification models, Decision Models and Association Models) – Process of building a Predictive Model (Define business objective, Preparing the data, Choosing an algorithm, developing, testing, evaluating, deploying, monitoring and maintain the model

**Unit III -Classification Techniques**

Introduction to classification – Data Classification Process – Classification algorithms (logistic regression, decision trees, Support Vector Machine – Linear Regression - Neural Network concept –- Visualizing classification data

**Unit IV: Machine Learning for Predictive Modelling**

Overview of machine learning algorithms - Clustering Concept - Supervised vs unsupervised learning – Supervised Learning (KNN – k nearest neighbours clustering algorithm) Unsupervised Learning – Principal Component Analysis -K-Means clustering) - Visualizing clustering data

**Unit V: Effective Deployment of Predictive Analytics:**

Technological Trends in Predictive Analytics - Applying open-source tools to big data -Building a rapid prototype - Reasons to implement predictive analytics - Steps to build Predictive Analytics Model

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**Course Outcomes:**

After Completion of the Course, students will be able to:

**CO1**: Apply the predictive analytics workflow to build effective predictive models for real-world business scenarios.

**CO2**: Apply linear regression and model evaluation metrics to address overfitting and underfitting in business problems.

**CO3**: Utilize classification algorithms and model evaluation techniques to classify and assess model performance in business contexts.

**CO4**: Apply machine learning algorithms, distinguishing between supervised and unsupervised methods, for business problem-solving.

**CO5**: Analyze ethical and legal implications of predictive analytics, addressing biases and privacy concerns, and apply responsible guidelines in business.

**Suggested Readings:**


1. Anasse Bari, Mohamed Chaouchi, and Tommy Jung, "Predictive Analytics for Dummies" 1st edition, Wiley publications, 2014
2. G. Ganapathy, "Predictive Analytics Using R" 1st edition by CRC Press , 2015.


**References:**


1. Eric Siegel, Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die", 1st edition, Wiley, 2013
2. Foster Provost and Tom Fawcett, "Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking", 1st edition by O'Reilly Media , 2013.
3. Dr. A/Biswarup Bhattacharya, "Practical Predictive Analytics: Models and Methods for Regression and Classification",1st edition by Apress, 2017.
4. Conrad Carlberg, "Predictive Analytics: Microsoft Excel", 1st edition by Que Publishing, 2014.
5. Vijay Kotu and Bala Deshpande, "Predictive Analytics and Data Mining: Concepts and Practice With RapidMiner", 1st edition by Morgan Kaufmann , 2014.


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## Department of Management Studies

**PROGRAM NAME: BBA Honours- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Introduction to R Programming**

**PAPER CODE: BBAH484** **PPW: 4**

**YEAR/SEMESTER: II/II** **NO. OF CREDITS: 4**

**Course Overview:**

The main objective of the course is to make the students understand the fundamental concepts of the R programming language with a focus on descriptive and predictive applications in business analytics.

**Unit wise Objectives:**

**COb1:** Understand the basics of R programming, including syntax, data types, packages, and data import/export.

**COb2:** Understand how to use the dplyr package in R for data manipulation, including filtering, selecting, arranging, summarizing, and grouping data.

**COb3:** Understand how to use ggplot2 for data visualization, including basic plot types, customization, advanced customization, and creating interactive visualizations.

**COb4:** Understand how to perform descriptive statistics, hypothesis testing (t-tests, chi-square tests), correlation and regression analysis, and ANOVA using base R functions.

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**COb5:** Understand the principles of predictive modelling with R, including building and evaluating predictive models, model selection, feature engineering, and time series analysis.

**UNIT I: INTRODUCTION TO R**

- Overview of R and RStudio - Basics of R syntax and data types - R packages and libraries - Data Import And Export- Reading and writing data files (CSV, Excel, text files) - Data manipulation with base R functions

**UNIT II: DATA MANIPULATION WITHPACKAGE**

- Introduction to the dplyr package - Data transformation (filtering, selecting, arranging) - Data summarization and grouping

**UNIT III: DATA VISUALIZATION WITH GGPLOT2**

- Introduction to ggplot2 for data visualization - Basic plot types (scatter plots, bar plots, histograms)- Customizing plots using ggplot2 syntax-Advanced plot customization (faceting, themes) - Adding layers and annotations to plots - Creating interactive visualizations with ggplotly

**UNIT IV: STATISTICAL ANALYSIS WITH R**

- Descriptive statistics (Measures of Central Tendency and Dispersion), Hypothesis testing: t-tests - Single Mean, Two Means and Paired Means, chi-square tests: Goodness of Fit and Independence of Attributes, ANOVA (One-Way and Two-Way Classifications) using R

**UNIT V: PREDICTIVE MODELING**

- Introduction to predictive modeling with R (Conceptual Framework) Correlation, Regression Analysis (Simple & Multiple) - Time series analysis (Time series data manipulation and visualization - Time series forecasting using forecast package - Seasonality and trend analysis - Least Square Fit (Straight Line, Parabola, Exponential, Power Curve)

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**Course Outcomes:**

After Completion of the Course, students will be able to:

**CO1**: Apply R programming concepts to read, write, and manipulate data files (CSV, Excel, text files) using base R functions.

**CO2**: Apply the dplyr package in R to manipulate data by filtering, selecting, arranging, summarizing, and grouping data sets effectively.

**CO3**: Create customized data visualizations using ggplot2 in R, including basic plot types, advanced customization techniques, and interactive visualizations using ggplotly.

**CO4**: Apply statistical analysis techniques in R to analyze data sets, interpret results, and draw meaningful conclusions for business decisions.

**CO5**: Apply predictive modelling techniques in R and analyze time series data for forecasting, seasonality, and trend analysis.

**Suggested Readings:**

- Dr. Ajay Ohri, "R Programming for Beginners", Packt Publishing, 2013

**References:**

- Bharti Motwani, "Data Analytics with R", 1st Edition, BPB Publications, 2017
- Jared P. Lander , "R for Everyone: Advanced Analytics and Graphics", 2nd Edition, Addison-Wesley Professional, 2017

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## Department of Management Studies

**PROGRAM NAME: BBA Honors- Business Intelligence and Analytics (w.e.f 2024-25)**

**COURSE NAME: Business Analytics using R Programming**

**PAPER CODE: BBAH 485** **PPW: 4**

**YEAR/SEMESTER: II/II** **NO. OF CREDITS: 2**

**Course Objective:**

This lab-based course focuses on practical hands-on experience in using R programming in data manipulation, visualization, statistical analysis (Descriptive and Predictive) within a business context.

**Unit wise Objectives:**

**COb1**: Analyse and interpret the first, second order measures of central tendency using R programming

**COb2**: Perform inference on testing of hypothesis for solving real life problems using R

**COb3**: Apply Descriptive Analytics using R Programming

**COb4**: Apply Predictive Analytics using R programming

1. Mathematical Operations (Addition, Subtraction, Multiplication, Division, Logx, $e^x$, inverse) including problems in R
2. Computation of Measures of Central Tendency (Mean, Median, Mode, GM, HM) for raw data using R

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4. Data visualization (Bar diagrams, Histogram, Line Chart, Pie Chart, Box Plot) interpretation using R
5. Computation of Correlation Coefficient for raw data using R
6. Computation of Regression Line using R
7. Computation of Multiple Regression Line using R
8. Computation of Coefficient of Determination using R
9. Test for Single Mean using R
10. Test for Difference of Mean using R
11. Test for Paired t Test using R
12. Chi Square test for independence of attributes using R
13. Chi Square test for Goodness of Fit using R
14. ANOVA One Way Classification using R
15. ANOVA Two Way Classification using R
16. Fitting of Straight-Line trend using R
17. Fitting ofParabola using R
18. Fitting of Exponential Curve using R
19. Fitting of Power Curve using R
20. Checking Seasonality in Time Series Data

**Course Outcomes:**

After Completion of the Course, students will be able to:

CO1: Manipulate and visualize data using base R functions
CO2: Use R for descriptive statistics, hypothesis testing and ANOVA
CO3: Apply R for predictive analytics
CO4: Analyze business data using R, recognize patterns and trends, and make data-driven decisions.

**Suggested Readings:**

Dr. Ajay Ohri, "R Programming for Beginners", CreateSpace Independent Publishing Platform, 2013

**References**


- Bharti Motwani, "Data Analytics with R", BPB Publications,2017
- Jared P. Lander, R for Everyone: Advanced Analytics and Graphics",2nd Edition, Addison-Wesley Professional,2017
- R for Data Science, Hadley Wickham and Garrett Grolemund, 1st edition, O'Reilly Media, 2017.


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- Andy Vickler, R Programming: This book includes: R Basics for Beginners + R Data Analysis and Statistics + R Data Visualization: 4,Kindle Edition,2022


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