

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly known as West Bengal University of Technology)
Syllabus of Bachelor of Business Administration
Effective from academic session 2023-2024

Semester-VIII

CUSTOMER RELATIONSHIP MANAGEMENT

Paper Code: BBACO801A

Total Credit: 5

Total hours of lectures: 75 hours

Course Outcomes (COs):

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

1. Understand the fundamental concepts, importance, and evolution of Customer Relationship Management.
2. Explain customer lifecycle, customer value, retention strategies, and CRM process.
3. Analyse the various technological tools, databases, and software used in CRM applications.
4. Distinguish between operational, analytical, and collaborative CRM systems.
5. Evaluate CRM implementation strategies, challenges, and success factors in different industries.
6. Develop customer retention plans and loyalty programmes using CRM strategies.
7. Apply CRM practices for service, sales, and marketing integration.
8. Understand the emerging trends like AI, social CRM, and mobile CRM.

Sl. No.	Topic/Module	Hours
1	Introduction to CRM – Meaning, nature, scope, objectives, evolution of CRM, CRM vs. traditional marketing, CRM as a business strategy, importance in modern business	4
2	Customer Lifecycle & Value Management – Customer acquisition, retention, development; customer loyalty and profitability; Customer Value Management (CVM); customer satisfaction drivers	5
3	CRM Strategy & Process with AI Integration – CRM planning and architecture, steps in CRM implementation, components of CRM strategy, integration of AI for predictive CRM insights and data analysis	4
4	Types of CRM – Operational, Analytical, Collaborative CRM: features, comparison, advantages; Use of AI in Analytical CRM for predictive analytics and customer segmentation	5
5	CRM Technology Infrastructure – CRM databases, data warehousing, data mining, customer information systems, sales force automation (SFA), marketing automation, service automation; AI-enabled CRM tools (chatbots, recommendation engines)	6
6	CRM Software & Digital Platforms – Salesforce, SAP, Zoho; features of CRM software, cloud-based CRM, mobile CRM, E-CRM architecture, social CRM, digital platforms, AI for social listening and sentiment analysis	6

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7	CRM in Marketing, Sales & Customer Support – Personalization, campaign management, lead generation, cross-selling and up-selling strategies, customer contact management, service quality, complaint management, customer experience management (CEM)	6
8	CRM in Services & Relationship Marketing – Role of CRM in service industries (banking, telecom, aviation, hospitality, retail), loyalty programmes, churn management, relationship marketing with AI applications	9
9	CRM Implementation & Performance Measurement – Planning, data integration, change management, CRM success factors & failures, Customer Lifetime Value (CLV), ROI on CRM, dashboards, customer satisfaction index	15
10	Emerging Trends & Future of CRM – AI & Machine Learning in CRM, Big Data CRM, Block chain-based CRM, personalization at scale, ethical & legal issues, case studies in aviation, healthcare, banking	15

Suggested Readings

1. Alok Kumar Rai – *Customer Relationship Management: Concepts and Cases*
2. Kaushik Mukerjee – *Customer Relationship Management*
3. S. Shanmugasundaram – *Customer Relationship Management*
4. V. Kumar & Werner Reinartz (Indian Edition) – *Customer Relationship Management*
5. Seema Gupta – *Digital Marketing and CRM in the Indian Context*
6. Supriya Sarkar – *Customer Relationship Management: A Strategic Approach to Marketing*

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Company Accounts or Audit
Paper Code: BBACO801B

Total Credit: 5

Total hours of lectures: 75 hours

Course Outcomes:

- CO1: Explain the concepts and procedures of accounting for shares and debentures, including issue, forfeiture, buy-back, and redemption, as applicable to joint stock companies.
- CO2: Prepare and present financial statements of companies as per Schedule III of the Companies Act, demonstrating understanding of statutory format and disclosure requirements.
- CO3: Construct and interpret cash flow statements in accordance with Indian Accounting Standard (Ind AS) 7, identifying cash flows from operating, investing, and financing activities.
- CO4: Interpret and apply selected Accounting Standards (AS 11, 12, 15, 16, 17, 18, 19) in practical accounting situations to ensure compliance and transparency in financial reporting.
- CO5: Describe the nature, scope, and significance of auditing, and demonstrate understanding of audit planning, procedures, internal control, and reporting.
- CO6: Examine and apply provisions related to audit under the Companies Act, including auditor qualifications, appointment, powers, duties, and statutory reporting requirements.
- CO7: Integrate accounting and auditing knowledge to analyze the role of audit in corporate governance and the reliability of financial information in decision-making.

SECTION – A : ACCOUNTS OF JOINT STOCK COMPANIES	
MODULE I: Accounting of Shares and Debentures Introduction, Issue of Share, Right Issue, Bonus Issue, Forfeiture of Shares, Buy-back of Shares, Issue and Redemption of Preference Shares, Debentures	(15L)
MODULE II: Presentation of Financial Statements (As per Schedule III) Introduction, Statement of Profit and Loss, Balance Sheet	(15L)
MODULE III: Cash Flow Statement Introduction, Meaning of Cash and Cash Equivalent, Types of Cash Flow, Indian Accounting Standard (Ind AS) 7	(15L)
MODULE IV: Accounting Standards Introduction, AS 11 : Accounting for the Changes in Foreign Exchange Rates, AS 12 : Accounting for Government Grants, AS 15 : Accounting for Employee Benefits, AS 16 : Borrowing Costs, AS 17 : Segment Reporting, AS 18 : Related Party Disclosure, AS 19 : Accounting for Leases	(8L)
SECTION – B : AUDITING	
MODULE V: Auditing Concepts Nature, Scope and Significance of Auditing, Audit Engagement, Audit Programme, Audit Working Papers, Audit Note Book, Audit Evidence and Audit Report, Internal Check, Internal Control, Internal Audit	(12L)
MODULE VI: Provision Relating to Audit under Companies Act Auditor's qualifications, disqualifications, appointment, remuneration removal, powers and duties, Cost Audit, Secretarial Audit, Reporting requirements under Companies Act, Contents of the Reports and qualifications in the Report	(10L)

Suggested Readings:

1. Mukherjee, A. & Hanif, M. – Corporate Accounting, Tata McGraw-Hill Education.
2. Shukla, M.C., Grewal, T.S. & Gupta, S.C. – Advanced Accounts (Vol. II), S. Chand & Company Ltd.
3. Jain, S.P. & Narang, K.L. – Corporate Accounting, Kalyani Publishers, Ludhiana.
4. Maheshwari, S.N. & Maheshwari, S.K. – Corporate Accounting, Vikas Publishing House, New Delhi.
5. Goyal, V.K. & Goyal, R. – Corporate Accounting, PHI Learning Pvt. Ltd., New Delhi

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Human Resource Development
Paper Code: BBACO801C

Total Credit: 5

Total hours of lectures: 75 hours

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

CO1. *Explain* the fundamental concepts, objectives, and functions of Human Resource Development (HRD), and differentiate it from Human Resource Management (HRM).

CO2. *Analyse* training needs using organizational, task, and individual analysis to design suitable training and development interventions for enhancing employee competencies.

CO3. *Apply* both training and non-training techniques to foster individual development and performance improvement.

CO4. *Discuss and evaluate* the stages of career development and the respective roles of individuals and organizations in managing career progression effectively.

CO5. *Examine* the role of Organizational Development (OD) as an HRD subsystem and *assess* various OD interventions including structural, cultural, and learning-oriented practices.

CO6. *Interpret and integrate* contemporary HRD practices in global and digital contexts to enhance workforce well-being and organizational performance.

MODULE I: Individual Development

1. ***Introduction to HRD:*** An overview – HRM vs. HRD Objectives, concepts of education, training, and development, meaning, scope, and purpose of HRD, functions of HRD. [6L]
2. ***HRD Process:*** Process of HRD, Roles and competencies of HRD professionals, Challenges of HRD. [6L]
3. ***Training Needs Analysis/Assessment:*** Levels & techniques of HRD assessment - Organizational Analysis, Task Analysis, Individual Analysis. [6L]
4. ***Individual Development through Training:*** Designing Training Program, Training methods – on-the job, off-the-job, induction, outbound, computer-based, Management Development Programs (MDPs) – training for decision-making skills, training for interpersonal skills, training for knowledge and awareness.[18L]
5. ***Evaluation of Training and Development:*** Approaches to evaluation – Kirkpatrick, CIO, and Kaufman's model, Methods of training evaluation, timing and design of training evaluation. [9L]

MODULE II: Career Development and Organizational Development

6. ***Development through Non-training:*** Job Design, Job Redesign Programs - Job Enlargement, Job Enrichment, Job Rotation, Job Reengineering. [6L]
7. ***Career Planning and Development:*** Concepts – career planning and career management, Career development stages, Role of individual and organization in career management, Issues in career management. [9L]
8. ***Organizational Development:*** OD as a subsystem within HRD, Linkage between HRD and OD, Structural Interventions - Business Process Reengineering (BPR), Restructuring, and Workflow Design, Employee engagement initiatives, Ergonomics & HRD. [15L]

References:

1. Human Resource Development – Randy L. DeSimone, Jon M. Werner, David M. Harris – Thomson South-Western Publisher
2. Human Resource Development – P. C. Tripathi - Sultan Chand & Sons
3. Human Resource Development – Dr. D.K. Bhattacharyya – Himalaya Publishing House
4. Human Resource Development: Today and Tomorrow – Ronald R. Sims – Emerald Publishing Inc.

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Marketing Analytics
Paper Code: BBACO802A

Total Credit: 5

Total hours of lectures: 75 hours

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

- Understand the scope and importance of marketing analytics in business decision-making and identify key data sources for marketing research (*Understand – L2*).
- Apply data preparation and visualization techniques using tools such as R, Python, Tableau, Power BI, or Canva to summarize and interpret market information (*Apply – L3*).
- Analyse sales, pricing, and customer data through regression and time-series models for forecasting, demand estimation, and performance evaluation (*Analyse – L4*).
- Evaluate consumer behaviour using cluster and factor analysis and construct perceptual maps and STP (Segmentation–Targeting–Positioning) frameworks for market insights (*Evaluate – L5*).
- Design and test product, pricing, and advertising strategies using conjoint analysis, A/B testing, and attribution modeling to improve campaign effectiveness (*Create – L6*).
- Apply machine-learning techniques — supervised, unsupervised, semi-supervised, and reinforcement learning — to marketing and digital data for predictive analysis (*Apply–Analyse – L3–L4*).
- Perform market basket, RFM, and lift analyses to enhance retailing and customer relationship management decisions (*Apply–Evaluate – L3–L5*).
- Interpret sentiment and text-mining outputs to measure brand perception and consumer engagement across online and social-media platforms (*Analyse – L4*).
- Create integrated dashboards and analytical reports that communicate insights and support strategic managerial decision-making (*Create – L6*).

CO–PO Mapping (Linked with Bloom’s Taxonomy)

Program Outcomes (PO):

- **PO1:** Apply managerial and analytical principles to solve business problems.
- **PO2:** Use technology, quantitative tools, and data for effective marketing decisions.
- **PO3:** Demonstrate creativity, reasoning, ethics, and strategic thinking in business situations.

CO No.	Course Outcome (Condensed Description)	Bloom’s Taxonomy Level	Linked POs	Brief Alignment Description
CO1	Understand scope and importance of marketing analytics and data sources.	L2 – Understand	PO1, PO2	Builds conceptual base for analytical thinking and comprehension of marketing data.
CO2	Apply data handling and visualization using R/Python/Tableau/Power BI/Canva.	L3 – Apply	PO1, PO2	Develops technical ability and analytical skill for practical marketing problems.
CO3	Analyse sales, pricing, and customer data using regression and time-series models.	L4 – Analyse	PO1, PO2, PO3	Links theory to quantitative forecasting and insight generation.
CO4	Evaluate consumer behaviour via clustering, factor analysis, and STP frameworks.	L5 – Evaluate	PO1, PO3	Fosters higher-order analytical and strategic evaluation skills.

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CO5	Design and test product, pricing, and advertising strategies using conjoint and A/B tests.	L6 – Create	PO2, PO3	Promotes creativity, innovation, and evidence-based marketing decisions.
CO6	Apply ML techniques (supervised, unsupervised, semi-supervised, reinforcement) to marketing data.	L3–L4 – Apply–Analyse	PO2, PO3	Enhances technical adaptability and AI-driven marketing insight.
CO7	Perform market basket, RFM, and lift analyses for retail and CRM decisions.	L3–L5 – Apply–Evaluate	PO1, PO2	Strengthens analytical capability and operational decision-making.
CO8	Interpret sentiment and text-mining results to assess online brand perception.	L4 – Analyse	PO2, PO3	Encourages digital literacy and analytical interpretation in marketing.
CO9	Create dashboards and analytical reports for strategic decision-making.	L6 – Create	PO2, PO3	Demonstrates integration of data visualization and managerial insight.

MODULE I

1. Technical Foundation & Exploratory Data Analysis— [10L]

- Introduction to marketing analytics and data-driven decision making.
- Data sources for marketing: transactional logs, web, social, CRM, surveys.
- Understanding structured, semi-structured and unstructured data; nominal, ordinal, interval and ratio scales; and variable types such as numerical, categorical, text and time-based data.
- Import, tidy, merge, reshape datasets. Data imputation, Encoding, Outliers. Standardization.
- Exploratory Data Analysis: summary statistics, correlation, crosstabs.
- Visuals: histograms, boxplots, scatterplots, heatmaps, pair plots.
- Dashboards: building KPI dashboards in Tableau / Power BI (concept only). Using Canva.

2. Predictive Modelling: Regression & Time Series — [12L]

- Simple linear regression: slope, intercept, R^2 , assumptions, Residual errors.
- Multiple regression: multicollinearity, variable selection, interpretation.
- Diagnostics and corrective measures: residual analysis, heteroscedasticity.
- Forecasting basics: trend, seasonality, decomposition.
- Model validation: RMSE, MAE, MAPE, cross-validation.

3. Product & Pricing Analytics— [11L]

- Demand estimation and price elasticity.
- Pricing strategies: bundling, skimming, penetration, dynamic pricing.
- Revenue and yield management concepts.
- Conjoint analysis: experiment design. Managerial uses of conjoint outputs for product design.
- Attribute selection and product bundle optimization.

4. Consumer & Segmentation Analytics— [12L]

- Customer Lifetime Value: calculation methods and interpretation.
- Market segmentation approaches: demographic, behavioural, psychographic.
- Clustering techniques: K-means, hierarchical clustering, DBSCAN — steps and use.
- Perceptual Mapping- Concept and methods:
- STP (Segmentation → Targeting → Positioning): decision framework and

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examples.

MODULE II

5. Retailing & Market Basket Analysis — [10L]

- Retail data and customer journeys in store and online.
- Market basket analysis: support, confidence, lift, rule mining process.
- RFM (Recency–Frequency–Monetary) scoring and customer tiering. Other Funnels- like AIDA.
- Concept of Customer Churn and Retention Analytics: Understanding churn, its link with CLV and RFM, and managerial strategies to reduce customer attrition.
- Space and resource allocation basics for retail assortments.

6. Advertising & Attribution Analytics — [8L]

- Advertising metrics: reach, impressions, Click through Rate, conversion, Pay-per-click(PPC).
- PPC campaign structure and performance monitoring.
- A/B Testing: hypothesis, sample size, execution, result interpretation.
- Multichannel attribution models: first/last touch, linear, time-decay.

7. Digital Analytics & Machine Learning for Marketing — [12L]

- Web and social metrics: sessions, users, bounce rate, engagement measures.
- Search engine Optimization & Social media marketing.
- Machine Learning overview: Supervised learning, Unsupervised learning, Semi-supervised learning, Reinforcement learning — basic idea for sequential decision problems.
- Model evaluation & classification metrics: reading the confusion matrix; interpret Precision, Recall, and F1-Score. (Use Data robot or Dataiku).
- Model evaluation- Accuracy, ROC-AUC score, regression model- RMSE, MAE, R^2 , MAPE, clustering- Silhouette Coefficient.
- Integrating ML outputs into dashboards and decision processes. Usage of ML in marketing.

Total Lectures (L): 75L (Each L = 50 minutes)

References:

1. Wayne L. Winston - Marketing Analytics: Data-Driven Techniques with Microsoft Excel
2. Marketing Metrics: The Manager's Guide to Measuring Marketing Performance — Paul W. Farris et al
3. Marketing Management — Philip Kotler & Kevin Lane Keller.
4. Marketing Analytics by Seema Gupta and Avadhoot Jathar
5. Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow — Aurélien Géron.
6. Multivariate Data Analysis – Joseph F. Hair, William C Black, Barry J Babbín, Rolph E Anderson
7. Storytelling with Data: A Data Visualization Guide for Business Professionals — Cole Nussbaumer Knaflic.

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Financial Analytics
Paper Code: BBACO802B

Total Credit: 5

Total hours of lectures: 75 hours

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

1. Explain the fundamental concepts of financial analytics and its role in modern financial decision-making.
2. Apply statistical and analytical techniques to evaluate financial statements, ratios, and performance indicators.
3. Use spreadsheet tools to model and analyse financial data.
4. Conduct trend, variance, and sensitivity analyses to support investment and budgeting decisions.
5. Employ predictive analytics methods to estimate future financial outcomes.
6. Analyse risk and return trade-offs.
7. Evaluate corporate valuation using data-driven models.
8. Interpret data visualizations and dashboards to communicate financial insights effectively to stakeholders.
9. Integrate analytical findings into strategic financial planning, investment decisions, and performance management.

MODULE I: Introduction to Financial Analytics:

1. **Overview of Financial Analytics:** Role of analytics in financial decision-making, Traditional vs. data-driven finance, Applications: risk management, investment analysis, credit scoring, forecasting, etc. [6L]
2. **Financial Data and Sources:** Types of financial data: market data, accounting data, economic indicators. Data sources: Bloomberg, Reuters, Yahoo Finance, company filings. Data quality, preprocessing, and cleaning. Time series nature of financial data. [10L]

Module II: Descriptive Analytics in Finance:

3. **Exploratory data analysis (EDA): Measures** of Central Tendency and Dispersion, Skewness and Kurtosis
4. **Data Visualization:** Pie Charts, Histograms, Bar Diagrams, Box Plots, Heat Maps, etc. [6L]
5. **Correlation:** Correlation and covariance in financial returns [9L]

MODULE III: Basics of Financial Statements:

6. **Overview:** Balance Sheet, Income Statement, Cash Flow Statement.[6L]
7. **Understanding financial ratios:** Liquidity ratios, Profitability ratios, Efficiency ratios, Leverage ratios. [10L]

MODULE IV: Financial Modelling and Credit Scoring

8. **Financial Modelling:** Capital Asset Pricing Modelling[6L]
9. **Credit Scoring:** Introductory models using regression concepts[9L]

MODULE V: Advanced Excel:

10. **Implementation:** Implementation of Financial Analytics concepts in Advanced Excel [7L]

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References:

1. Financial Analytics (Pitabas Mohanty) — Pitabas Mohanty; Publisher: Wiley India Pvt. Ltd.
2. Financial Data Analytics: Theory and Application — Edited by Sinem Derindere Köseoğlu; Publisher: Springer Cham
3. Data Analytics for Management, Banking and Finance: Theories and Application — Edited by Foued Saâdaoui, Yichuan Zhao, Hana Rabbouch; Publisher: Springer Cham

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Human Resource Analytics
Paper Code: BBACO802C

Total Credit: 5

Total hours of lectures: 75 hours

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

- CO1.** *Explain* the meaning, scope, and objectives of HR metrics and *demonstrate* how they contribute to evidence-based HR and business decisions.
- CO2.** *Describe* the concept, importance, and stages of HR analytics, and *identify* key challenges in implementing analytics within HR functions.
- CO3.** *Classify* and *interpret* different types of HR data, *evaluate* data quality (validity and reliability), and *use* basic tools like Excel, Power BI, and Tableau for HR data visualization.
- CO4.** *Apply* descriptive and diagnostic analytics to interpret HR trends, develop KPIs, and derive insights for workforce planning and decision-making.
- CO5.** *Differentiate* between predictive and prescriptive analytics and *illustrate* their use in forecasting HR outcomes and recommending actionable strategies.
- CO6.** *Integrate* HR analytics techniques in key HR processes such as talent management, training, performance, engagement, and compensation to support managerial decision-making.

MODULE I - Foundations of HR Metrics and Analytics

1. **Overview of HR Metrics:** Meaning, scope, importance, types and objectives of HR metrics, examples of HR metrics, HR metrics and its relevance in understanding business decisions. [6L]
2. **Introduction to HRD Analytics:** Concept of HR Analytics, Importance and scope of HR analytics, Stages and types of HR analytics, Challenges of HR analytics. [12L]
3. **Data for HR Analytics:** Understanding HR data, Types and scales of data, Methods of capturing data, Data-driven decision making in HR, Data Issues: Data validity & data reliability, HR tools for HR Analytics - MS Excel, Tableau, Power BI, SPSS, Data visualization through dynamic HR dashboards. [15L]

MODULE II - Applications of HR Analytics in Decision-Making

4. **Descriptive & Diagnostic Analytics:** Understanding descriptive and diagnostic analytics with examples, KPIs, Leading & Lagging Indicators, Techniques used in descriptive and diagnostic analytics, Cases. [12L]
5. **Predictive and Prescriptive Analytics:** Understanding predictive and prescriptive analytics with examples, KPIs, Techniques used in predictive and prescriptive analytics. Comparing predictive vs prescriptive analytics, Cases. [12L]
6. **Analytics for Key HR Processes Using MS Excel:** HR Analytics for Talent Management, Training & Development, Performance Management, Employee Engagement, Compensation Management. Using case studies and numerical illustrations as examples. [18L]

References:

1. Predictive HR Analytics: Mastering the HR Metric - Martin Edwards & Kirsten Edwards - Kogan Page
2. HR Analytics: Understanding Theories and Applications - Dipak Kumar Bhattacharyya - Sage
3. Winning on HR analytics - Ramesh Soundararajan and Kuldeep Singh, Sage, New Delhi
4. HR Analytics - Rama Shankar Yadav & Sunil Maheshwari, Wiley.