



B.Com Honours

Semester III

Calicut University

BUSINESS ANALYTICS TOOLS

Course Code: COM3MN209 • Module 1 Notes

Module I: Monetizing Data to Drive Business Decisions

Business Analytics transforms raw enterprise data into actionable strategic insights, optimizing operations, enhancing customer lifetime value, and monetizing corporate data assets.

Unit 1: Need for Data-Driven Decision Making & Problem Solving

- 1. Data-Driven Advantage:** Replaces gut-feel decision-making with empirical statistical evidence, minimizing operational risk and identifying hidden market opportunities.
- 2. Problem-Solving Cycle:** Business Problem Definition → Data Collection & Cleansing → Analytical Modeling → Insight Interpretation & Executive Action.

Unit 2: Analytical Cycle & Hierarchy of Information Users

- ### 1. Four Analytical Horizons:
- Descriptive Analytics:* What happened? (Historical reporting, dashboards).
Diagnostic Analytics: Why did it happen? (Root-cause analysis, drill-down queries).
Predictive Analytics: What will happen? (Forecasting, regression models).
Prescriptive Analytics: How can we make it happen? (Optimization models, decision simulation).
- ### 2. Information User Hierarchy:
- Executive Leaders (Strategic BI dashboards), Middle Managers (Tactical trend analysis), Operational Staff (Real-time transaction tracking).

Unit 3: The Complete BA Professional – Roles, Responsibilities, & Popular Tools

- 1. Core Competencies:** Domain knowledge, statistical modeling, data story-telling, and software proficiency.
- 2. Analytics Tool Ecosystem:** Microsoft Excel (Spreadsheet modeling), Power BI / Tableau (Data visualization), SQL (Relational database querying), Python / R (Machine learning & advanced statistics).

Practical Case Framework (Analytical Horizons & Tool Capability Matrix): Map the four analytics horizons against primary business objectives, techniques, and software tools.

Business Analytics Horizons & Tools Matrix:

Analytics Horizon	Core Question Addressed	Primary Analytical Techniques	Standard Business Software Tools
Descriptive Analytics	What happened in past performance?	Data aggregation, KPI tracking, Pivot Tables	Microsoft Excel, Tableau, Power BI Dashboards
Diagnostic Analytics	Why did specific variance occur?	Data mining, correlation, drill-down queries	SQL Queries, Power Query, Excel Pivot Slicers
Predictive Analytics	What are future projected trends?	Time-series forecasting, linear regression	Excel Forecast Sheet, R, Python (scikit-learn)
Prescriptive Analytics	What is the optimal decision path?	Constrained optimization, simulation modeling	Excel Solver Add-in, Python (PuLP), SAS

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