



Departmental Training Program on Power BI Desktop

(CAT-005)

(Instructor-led Offline/Online Classes)

Session 2026-27

**For
BCA / MCA Students**

Organized By

**Department of Computer Application
Integral University, Lucknow**

Content

1. Introduction to BI & Power BI

- a) What is Business Intelligence (BI)
- b) Overview of Power BI ecosystem:
 - Power BI Desktop
 - Power BI Service
 - Power BI Mobile
- c) Installation & interface walkthrough
- d) Understanding datasets, reports, dashboard

2. Data Loading & Data Sources

- a) Connecting to:
 - Excel, CSV, SQL Server
 - Web data sources
- b) Data preview & basic transformations
- c) Data types & column profiling

3. Power Query Editor (Data Transformation)

- a) Cleaning data:
 - Remove duplicates, nulls
 - Rename columns
- b) Filtering & sorting
- c) Split/merge columns
- d) Pivot & unpivot
- e) Applied steps & query folding (basic idea)

4. Data Modeling Basics

- a) Tables & relationships
- b) Star schema vs snowflake schema
- c) Creating relationships
- d) Cardinality & cross-filter direction

5. Basic Visualizations

- a) Charts:
 - Bar, Column, Line, Pie
- b) Tables & Matrix
- c) Slicers
- d) Formatting visuals
- e) Report layout & themes

6. Introduction to DAX (Data Analysis Expressions)

- a) What is DAX
- b) Calculated columns vs measures
- c) Basic functions:
 - SUM, COUNT, AVERAGE
- d) Simple measures

7. Advanced DAX

- a) CALCULATE function
- b) FILTER function
- c) Time intelligence:
 - TOTALYTD, SAMEPERIODLASTYEAR
- d) Logical functions:
 - IF, SWITCH

8. Data Modeling (Advanced)

- a) Star schema optimization
- b) Fact vs dimension tables
- c) Role-playing dimensions
- d) Handling many-to-many relationships

9. Advanced Visualizations

- a) KPI visuals
- b) Cards & multi-row cards
- c) Drill-down & drill-through
- d) Tooltips (custom tooltips)
- e) Bookmarks & buttons

10. Dashboard Design & UX

- a) Color usage
- b) Layout structure
- c) Storytelling with data
- d) Interactive reports

11. Power BI Service (Cloud)

- a) Publishing reports
- b) Workspaces
- c) Sharing dashboards
- d) Data refresh (scheduled refresh)
- e) Gateways (intro)

12. Real-Time & Advanced Features

- a) Row-Level Security (RLS)
- b) Parameters
- c) What-if analysis
- d) Introduction to AI visuals

Final Project + Assessment

- a)** Build a complete dashboard:
 - Sales / Finance / HR dashboard
- b)** Include:
 - Advanced DAX
 - Interactive visuals
 - Clean UI design
- c)** Presentation & feedback