राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, गोरखपुर
National Institute of Electronics & Information Technology, Gorakhpur
Deemed to be University Under Distinct Category
(Ministry of Electronics & Information Technology, Government of India)

Data Analytics using Spreadsheets and Power BI

4-Week Certificate Course

From Spreadsheet Skills to Interactive BI Dashboards

Duration	Total Hours	Mode	Medium
4 Weeks	60 Hours	Theory + Practical + Project	Hindi + English

Registration Portal: https://regn.nielitvte.edu.in | Website: https://www.nielit.gov.in/NielitMain/GKP

Course at a Glance

Why This Course?

- Learn job-oriented analytics using spreadsheets and Power BI.
- Convert raw data into reports, insights and dashboards.
- Useful for office MIS, government reporting and business intelligence.

Who Should Join?

- Students, faculty members and research scholars.
- MIS executives, office staff, managers and coordinators.
- Banking, insurance, sales, logistics, e-commerce and analytics professionals.

Prerequisites

- Basic computer operation and file handling.
- Basic spreadsheet awareness is useful but not mandatory.
- Laptop/desktop with spreadsheet software and Power BI Desktop.

Certification

- Certificate may be awarded based on attendance and performance.
- Suggested criteria: 75% attendance and minimum 50% marks in final test/project.

Course Objectives and Learning Outcomes

Course Objective: To train participants to clean, organize, analyze, visualize and present data using spreadsheet applications and Microsoft Power BI, leading to interactive dashboards and data-driven decision-making.

After successful completion, participants will be able to

- Use spreadsheets for data entry, formatting, sorting, filtering, validation and analysis.
- Apply logical, lookup, text, date/time, statistical and financial functions.
- Create charts, PivotTables, slicers, data models and scenario/what-if analysis.
- Import Excel, CSV, text, web, folder and database data into Power BI.
- Clean and transform data using Power Query, append, merge, split and unpivot.
- Design reports with charts, cards, tables, matrix, maps, slicers, filters and themes.
- Build data models using relationships, fact/dimension tables and star schema.
- Create DAX measures for KPIs, ranking, running total and time intelligence.
- Publish reports using Power BI Service and understand refresh, gateway and RLS.
- Complete an end-to-end capstone dashboard project.

Tools Covered

Tool/Platform	Purpose	Key Use
Spreadsheet Tools	Microsoft Excel / LibreOffice Calc	Data preparation, formulas and PivotTables
Power BI Desktop	Reports and dashboard development	Data visualization and modelling
Power Query	ETL and data transformation	Cleaning, append, merge and shaping data
DAX	Measures and calculations	KPIs, ranking and time intelligence
Power BI Service	Publishing and sharing	Dashboards, refresh and basic security

Week-wise Course Structure: 4 Weeks / 60 Hours

Week 1: Spreadsheet Foundations and Data Handling — 15 Hours

- Spreadsheet interface, workbook, worksheet, cells and ranges
- Formatting, conditional formatting and format as table
- Find/replace, Go To Special, cell referencing and named ranges
- Sorting, filtering, external data, text-to-columns and remove duplicates
- Data validation, consolidate, grouping, subtotal and basic charts

Week 2: Advanced Spreadsheet Analytics — 15 Hours

- Date/time, text, logical, lookup/reference, math, statistical and financial functions
- PivotTables, PivotCharts, slicers and report filters
- Data models, relationships and multi-sheet analysis
- Formula auditing, error handling and workbook protection
- What-if analysis: Scenario Manager, Goal Seek, Data Table and Solver overview

Week 3: Power BI Foundations, Visuals and Power Query — 15 Hours

- Power BI overview, installation, interface and report workflow
- Data import from Excel, CSV, text, web, folder and SQL/database sources
- Charts, table, matrix, cards, filters, slicers, maps and advanced visuals
- Power Query for cleaning, data types, split/merge and transformations
- Append, merge, Group By, pivot/unpivot, profiling and basic M language

Week 4: Data Modeling, DAX, Service and Capstone Project — 15 Hours

- Relationships, cardinality, star schema and date table
- DAX measures: SUM, COUNT, CALCULATE, FILTER, DIVIDE, SELECTEDVALUE and variables
- KPIs, ranking, running total, target vs achievement and dynamic titles
- Time intelligence, bookmarks, drill-through, tooltip pages and storytelling
- Publish to Power BI Service, refresh, gateway, RLS and project presentation

Detailed Day-wise Schedule: 20 Days x 3 Hours

Days 1-10: Spreadsheets

Day	Topic	Hrs
1	Introduction to Spreadsheet Applications	3
2	Understanding Data and Formatting	3
3	Data Handling - I: Find, Reference, Sort and Filter	3
4	Data Handling - II: External Data, Validation and Consolidate	3
5	Charts, Error Handling and Formula Auditing	3
6	Date/Time, Text and Logical Functions	3
7	Lookup, Reference and Statistical Functions	3
8	Financial Functions and What-if Analysis	3
9	PivotTables, Slicers and Data Models	3
10	Spreadsheet Dashboard Mini Project	3

Days 11-20: Power BI

Day	Topic	Hrs
11	Introduction to Power BI and Installation	3
12	Power BI Charts, Tables, Matrix and Cards	3
13	Advanced Visuals and Map Dashboard	3
14	Power Query Basics and Data Cleaning	3
15	Power Query Text, Date and Number Functions	3
16	Append, Merge, Joins and M Language	3
17	Data Modeling, Relationships and Star Schema	3
18	DAX for KPI Dashboards	3
19	Time Intelligence, Bookmarks and Drill-through	3
20	Power BI Service and Capstone Presentation	3

Daily Session Pattern

Theory	Practical	Assignment/Quiz	Total
01 Hour	1.5 Hours	0.5 Hour	03 Hours

Hands-on Practical Coverage

Spreadsheet Practicals

- Data cleaning, sorting, filtering and validation
- Formulas, functions, lookup and statistical analysis
- Charts, PivotTables, PivotCharts, slicers and dashboard

Power BI Visual Practicals

- Bar, column, line, area, pie, donut and advanced charts
- Table, matrix, subtotal/grand total and conditional formatting
- Map, filled map, cards, filters, slicers and tooltips

Power Query Practicals

- Remove duplicates/nulls, data types and split columns
- Text, date and number transformations
- Append, merge, joins, Group By, pivot/unpivot and M language overview

Power BI Advanced Practicals

- Relationships, star schema and date table
- DAX measures, KPIs, ranking and running total
- Bookmarks, drill-through, tooltip pages, actions and publishing

Final Capstone Project

Participants will prepare and present a professional analytics dashboard by combining spreadsheet preparation skills with Power BI reporting and visualization.

Requirement	Minimum Criteria
Data Sources	Minimum 2 data sources
Tables	Minimum 3 related tables
Power Query	Data cleaning and transformation
Data Model	Proper relationships with star schema concept
DAX Measures	Minimum 8 measures
KPI Cards	Minimum 5 KPI cards
Visuals	Minimum 8 different visuals including table/matrix
Interactivity	Slicers, filters, drill-through/bookmark/action
Presentation	5-10 minutes dashboard presentation

Suggested Project Themes and Datasets

- Sales and Profit Analysis Dashboard
- HR Analytics Dashboard
- Student Performance Analysis Dashboard
- Admission and Training Registration Dashboard
- Financial Expense Monitoring Dashboard
- Inventory and Production Dashboard
- Customer Feedback Analysis Dashboard
- Website or Portal Analytics Dashboard
- Hospital/Healthcare Analytics Dashboard
- Banking and Loan Analysis Dashboard
- Manufacturing Performance Dashboard
- Regional or State-wise Sales Map Dashboard

Course Delivery and Assessment

Duration	4 Weeks / 60 Hours
Daily Duration	03 Hours per day
Mode	In-campus / online / blended as notified
Assessment	Quiz / assignment / test / project presentation
Certificate	Based on attendance and performance criteria
Medium	Hindi + English

How to Apply

Visit the Online Registration Portal (ORP): https://regn.nielitvte.edu.in

Note: Course fee, batch start date, venue, registration deadline and contact details may be notified separately by NIELIT Gorakhpur.

Learn. Analyze. Visualize. Present. Make data-driven decisions with confidence.

Get In Touch

Ajay Verma
Technical Officer
Mb: 9140970443
Email: ajay.verma@nielit.gov.in

Abhinav Mishra
Scientist 'D'
Mb: 8317093868
Email: abhinav@nielit.gov.in