HANDS – ON
DATA ANALYTICS
BOOTCAMP
(USING SPSS, AMOS, EXCEL, POWER BI)



3 Hours per Day | **Total Duration: 30 Hours (10 Days)**

DAY 1 — Introduction to Data Analytics

Topics:
- Meaning and Importance of Data Analytics
- Data Analytics Lifecycle
- Types of Data (Structured, Unstructured)
- Data Sources and Data Collection Methods
- Overview of Tools: Excel, SPSS, AMOS, Power BI
- Data Cleaning and Preprocessing Techniques

Practical:
- Working with raw datasets
- Data cleaning and formatting exercises

DAY 2 — Data Analysis using Excel

Topics:
- Excel Interface and Data Handling
- Data Cleaning Techniques in Excel
- Basic Functions: SUM, AVERAGE, COUNT, IF, Statistical functions, Financial functions, & Accounting functions, solver add in Functions
- Sorting, Filtering, and Data Validation
- Pivot Tables and Pivot Charts
- Introduction to Data Analysis ToolPak

Practical:
- Dataset analysis using functions
- Creating summary reports using Pivot Tables

DAY 3 — Advanced Excel for Analytics

Topics:
- Advanced Functions: VLOOKUP, HLOOKUP, INDEX, MATCH
- Logical and Text Functions
- Conditional Formatting
- Dashboard Design Principles
- Introduction to Macros and Automation

Practical:
- Building an interactive Excel dashboard Automating repetitive tasks

DAY 4 — Data Analysis using Excel

Topics:
- Introduction to SPSS Interface and Data Entry
- Variable Types and Data Coding
- Descriptive Statistics (Mean, Median, Mode, SD)
- Data Visualization in SPSS
- Correlation Analysis & Regression Analysis
- Parametric and Non-Parametric Test
- Factor Analysis, Cluster Analysis, Discriminant Analysis,
- Multidimensional Scaling (Mapping Tools)
- Hierarchical Clustering, Means Clustering.

Practical:
- Running descriptive and inferential statistics, Interpreting SPSS outputs

DAY 5 — Advanced SPSS Techniques

Topics:
- Hypothesis Testing
- t-tests (Independent & Paired)
- ANOVA (One-way & Two-way)
- Chi-square Test
- Reliability Analysis (Cronbach's Alpha)
- Report Writing and Interpretation

Practical:
- Hypothesis testing using datasets, Case study-based statistical analysis

DAY 6 — Structural Equation Modeling using AMOS

Topics:
- Introduction to SEM and its Applications
- Path Analysis Concepts
- Confirmatory Factor Analysis (CFA)
- Model Specification and Identification
- Model Fit Indices (GFI, AGFI, IFI, TLI, CFI, RMSEA, GFI, etc.)
- Mediation and Moderation Analysis

Practical:
- Building SEM models using AMOS, Interpreting model outputs

DAY 7 — Time Series Analysis

- Introduction to Time Series
- Components of Time Series
- Data Visualization & amp; Patterns, Time Series
- Decomposition, Smoothing

Techniques, Stationarity Concept, AR, MA, ARMA Models, ARIMA Model, Model Evaluation & Forecasting

DAY 8 — Power BI for Business Intelligence

Topics:
- Introduction to Power BI and BI Concepts
- Data Import from Multiple Sources
- Data Transformation using Power Query
- Data Modeling and Relationships
- Creating Visualizations (Charts, Tables, Maps)
- Dashboard Design and Storytelling

Practical:
- Building interactive dashboards, Data visualization exercises

DAY 9 — Time Series Analysis

Topics:
- Introduction to DAX (Data Analysis Expressions)
- Advanced Visualizations and Custom Reports
- Filters, Slicers, and Drill-down Features
- Publishing and Sharing Reports
- Integrating Insights for Decision-Making
- Practical (Capstone Project): End-to-end data analysis project, Combining Excel, SPSS, AMOS, and Power BI

DAY 10 — Power BI for Business Intelligence

- Business problem identification
- Data analysis using Parametric and Non- Parametric Test