



Advanced Data Analytics & Business Intelligence Internship

(15 Days | Practical-Oriented | Industry Ready)

INTERNSHIP SYLLABUS

Internship Objectives

By the end of this internship, students will:

- Master **advanced data analytics techniques**
- Build **interactive BI dashboards**
- Work with **real-world business datasets**
- Perform **data-driven decision making**
- Gain confidence to handle **analytics projects independently**

Tools & Technologies

- Python (Pandas, NumPy, Matplotlib, Seaborn)
- SQL (MySQL / PostgreSQL)
- Excel (Advanced)
- Power BI / Tableau
- Google Data Studio
- Business KPIs & Metrics
- Real-time Case Studies

Day 1 – Introduction to Business Analytics

- What is Business Intelligence & Analytics
- Role of Data Analyst vs BI Analyst
- Analytics Lifecycle

- Industry use cases (Retail, Finance, Healthcare)

Practical:

Explore sample business dataset

Day 2 – Data Collection & Data Understanding

- Structured vs Unstructured Data
- Data sources (CSV, Excel, Databases, APIs)
- Data profiling techniques

Practical:

Load datasets using Python & Excel

Day 3 – Data Cleaning & Preprocessing

- Handling missing values
- Outlier detection
- Data normalization & transformation

Practical:

Clean raw business data using Pandas

Day 4 – Advanced Excel for Analytics

- Pivot tables & charts
- VLOOKUP, XLOOKUP, INDEX-MATCH
- Conditional formatting

Practical:

Sales & profit analysis dashboard in Excel

Day 5 – SQL for Business Intelligence

- SELECT, WHERE, GROUP BY, HAVING
- Joins & subqueries
- KPI-based queries

Practical:

Business reporting using SQL

Day 6 – Exploratory Data Analysis (EDA)

- Descriptive statistics
- Trend & pattern identification
- Correlation analysis

Practical:

EDA using Matplotlib & Seaborn

Day 7 – Business Metrics & KPIs

- Revenue, Growth, Churn, CAC, ROI
- Dashboard metric design

Practical:

KPI calculation for a real company dataset

Day 8 – Data Visualization Principles

- Choosing the right chart
- Storytelling with data
- Visual perception rules

Practical:

Chart redesign for better insights

Day 9 – Power BI / Tableau Fundamentals

- Data import & modeling
- Relationships & measures
- Calculated fields

Practical:

First interactive dashboard

Day 10 – Advanced BI Dashboards

- Drill-down & filters
- Slicers & tooltips
- Time-series dashboards

Practical:

Sales performance dashboard

Day 11 – Business Case Study Analysis

- Problem definition
- Insight extraction
- Recommendation building

Practical:

Retail / Finance analytics case study

Day 12 – Forecasting & Trend Analysis

- Time series basics
- Growth prediction
- Business forecasting methods

Practical:

Sales trend forecasting using Python

Day 13 – Data-Driven Decision Making

- Turning insights into actions
- Business storytelling
- Executive reporting

Practical:

Create analytics presentation

Day 14 – Mini Project Development

- Dataset selection
- Dashboard + insights
- Business recommendations

Practical:

End-to-end BI project

Day 15 – Final Project Presentation

- Live dashboard demo
- KPI explanation
- Viva & feedback