

Data Analytics and Machine Learning for Supply Chain Analytics using Python

Duration: 05 days

Software Requirements: Excel, Anaconda, Spyder

Module 01: Introduction to Supply Chain Analytics and Python

- Overview of supply chain analytics
- Introduction to Python in the context of supply chain management

Module 02: Python Programming for Supply Chain

- Python programming fundamentals
- Data structures, control flows, and functions relevant to supply chain data

Module 03: Data Management in Supply Chain using Python

- Importing, cleaning, and manipulating supply chain data
- Working with dates and handling time-series data

Module 04: Data Visualization for Supply Chain using Python

- Descriptive statistics and probabilistic analysis in supply chain
- Visualization with matplotlib and seaborn for supply chain insights

Module 05: Advanced Supply Chain Analytics using Python

- Segmentation and forecasting basics in supply chain
- Time-series modeling and forecasting segmentation

Module 06: Inventory Management and Optimization using Python

- Linear programming for supply chain optimization
- Inventory management with uncertainty and seasonal variations
- Multi-product optimization and markdown strategies

Module 07: Consumer Behavior, Pricing, and Machine Learning

- Analyzing consumer behavior and pricing strategies (Logit price response function)
- RFM analysis for customer segmentation
- Introduction to machine learning in supply chain
- Forecasting-OTB-AutoML problem solving with Pandas and PyCaret

Module 08: Simulation and Scenario Analysis

- Supply chain simulations for decision-making
- Inventory and demand simulations under different scenarios

