Forecasting with Time Series Training Course

Professional Development Training Course Outline

Category	Logistics and Supply Chain Management	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s data-driven business environment, organizations face increasing pressure to anticipate future trends accurately. Forecasting with Time Series Training Course provides a comprehensive exploration of techniques, models, and tools necessary to make reliable predictions from historical data. Participants will learn how to identify patterns, trends, and seasonality in data, enabling strategic planning, risk mitigation, and data-informed decision-making. The course emphasizes practical application, equipping learners with skills in both classical and modern forecasting methods, including ARIMA, exponential smoothing, and machine learning approaches. By leveraging real-world datasets, participants will gain hands-on experience in forecasting demand, sales, inventory, and financial performance, ensuring their organizations maintain a competitive edge.

This training course integrates statistical rigor with practical business insights, providing participants with a robust understanding of time series analysis. Attendees will explore data preprocessing, model evaluation, and performance metrics to select the most suitable forecasting approach. The course is designed to enhance analytical thinking, improve operational efficiency, and support informed strategic decisions. Through case studies, participants will understand the application of time series forecasting in diverse sectors such as retail, finance, healthcare, and logistics. By the end of the course, participants will be confident in their ability to transform raw data into actionable insights, driving organizational success and innovation.

Programme Curriculum

Forecasting with Time Series Training Course

Introduction

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Course Objectives

1. Understand the fundamentals of time series data and its components.
2. Learn classical forecasting techniques including moving averages and exponential smoothing.
3. Gain proficiency in ARIMA and SARIMA models for trend and seasonality analysis.
4. Explore machine learning approaches to time series forecasting.
5. Master data preprocessing, transformation, and cleaning for accurate predictions.
6. Apply model evaluation metrics such as RMSE, MAE, and MAPE.
7. Identify patterns, trends, and anomalies in historical data.
8. Forecast demand, sales, inventory, and financial performance effectively.
9. Integrate forecasting models into business decision-making processes.
10. Conduct scenario planning and risk analysis using forecasting results.
11. Utilize visualization tools to present forecasts to stakeholders.
12. Develop actionable strategies from predictive insights.
13. Implement end-to-end forecasting workflows using real-world datasets.

Organizational Benefits

- Enhanced accuracy in demand and sales planning.
- Improved inventory management and reduced stockouts.
- Informed financial and strategic decision-making.
- Identification of emerging trends and business opportunities.
- Optimized resource allocation and operational efficiency.
- Data-driven risk mitigation and scenario planning.
- Increased collaboration between analytics and business teams.
- Ability to forecast market behavior and customer demand.
- Strengthened competitive advantage through predictive insights.
- Enhanced analytical capability and workforce skill development.

Target Audiences

1. Business analysts and data analysts.
2. Financial analysts and planners.
3. Operations managers and supply chain professionals.
4. Marketing analysts and demand planners.
5. Statisticians and econometricians.
6. IT and data science professionals.
7. Decision-makers seeking data-driven strategies.
8. Graduate students in analytics or business fields.

Course Duration: 5 days

Course Modules

Module 1: Introduction to Time Series Data

- Understanding time series components: trend, seasonality, and noise
- Types of time series data: univariate and multivariate
- Data collection and data integrity for forecasting
- Introduction to visualization techniques
- Real-world case study: Retail sales pattern analysis
- Hands-on practical exercises

Module 2: Classical Forecasting Techniques

- Moving averages and weighted moving averages
- Simple and double exponential smoothing
- Trend and seasonal adjustments
- Selection of smoothing parameters
- Case study: Inventory demand smoothing in FMCG
- Practical exercises with historical datasets

Module 3: ARIMA Modeling

- Autoregressive, Integrated, and Moving Average concepts
- Stationarity and differencing
- Model identification and parameter selection
- Forecast evaluation metrics
- Case study: Financial time series forecasting
- Hands-on ARIMA modeling

Module 4: Advanced Time Series Models

- Seasonal ARIMA (SARIMA)
- Exponential smoothing state space models
- Introduction to Prophet and other modern tools
- Handling non-stationary and intermittent data
- Case study: Energy consumption forecasting
- Model implementation exercises

Module 5: Machine Learning for Forecasting

- Regression models for time series prediction
- Random forests and gradient boosting
- Feature engineering and lag variables
- Cross-validation techniques
- Case study: E-commerce demand forecasting
- Hands-on ML forecasting exercises

Module 6: Data Preprocessing and Transformation

- Handling missing values and outliers
- Scaling and normalization techniques
- Seasonal decomposition and detrending
- Data aggregation and resampling
- Case study: Healthcare patient flow forecasting
- Practical preprocessing exercises

Module 7: Forecast Evaluation and Accuracy

- Metrics: RMSE, MAE, MAPE, and others
- Comparing model performance
- Backtesting and rolling forecasts
- Model improvement strategies
- Case study: Sales forecasting error analysis
- Evaluation exercises

Module 8: Application and Integration

- Implementing forecasts in business decisions
- Scenario planning and risk management
- Visualization and reporting of forecasts
- Communicating results to stakeholders
- Case study: Multinational supply chain forecasting
- Capstone project: End-to-end forecasting workflow

Training Methodology

- Instructor-led sessions and interactive lectures
- Hands-on exercises with real datasets
- Step-by-step model building and evaluation
- Case study analysis across industries
- Group discussions and problem-solving sessions
- Capstone project implementation and presentation

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.
f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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