

Business Forecasting: Techniques, Applications and Best Practices

This comprehensive three-day course covers all aspects of business forecasting. Numerous real-world examples drawn from a wide range of industries are used throughout to illustrate key concepts. The seminar includes computer workshops, allowing you to immediately apply what you've learned to your own data.



By the end of the seminar you will not only have gained considerable insight into business forecasting, but will also have had the opportunity to solve your own forecasting problems with state-of-the-art software and expert instructors.

“The seminar exposed me to various forecasting models, enabling me to determine what best fits our business.”

Val Pulgar
Forecast Analyst, OPI Products, Inc.

Course Overview

- ✓ **Introduction to Forecasting:** Properties of Data ★ Overview of Methods ★ Evaluating Forecast Accuracy
- ✓ **Time Series Decomposition:** Components of Data ★ Business Cycle Indicators ★ Census X-11
- ✓ **Exponential Smoothing Models:** Simple One, Holt Two and Winters Three Parameter ★ Damped Trend Models ★ Event Models
- ✓ **Box-Jenkins Models:** Advantages and Disadvantages ★ Automatic Identification Procedure ★ Differencing ★ Diagnostics
- ✓ **Batch (Multi-Series) Forecasting:** Data Characteristics ★ A-B-C Classifications ★ Measures of Accuracy ★ Top Down vs. Bottom Up
- ✓ **Dynamic Regression:** When to Use ★ Standard OLS ★ Lagged Variables ★ Cochrane-Orcutt Models ★ Hypothesis Tests
- ✓ **Computer Workshops:** Structured Forecasting Exercises ★ Analysis of Attendee's Data

ForecastPRO

Software Discount: Attendees of the three-day seminar receive \$100 discount on the purchase of any Forecast Pro Software product.

Who should attend

Product managers, marketing managers, business managers, corporate planners, market researchers, utility forecasters, production planners, supply chain analysts or those who prepare or analyzes forecasts as part of their job responsibilities. Some prior knowledge of statistics is helpful but not essential.

Business Forecasting: Techniques, Applications and Best Practices

This document provides information about our 3-day seminar, *Business Forecasting: Techniques, Applications and Best Practices*. This seminar is designed to provide insight into all aspects of business forecasting. Day one and day two of the seminar run from 9 AM to 5 PM. Day three runs from 9 AM to 3:30 PM. Lunch is provided on each day for all attendees as part of the course and at no extra expense.

Course topics are covered using a combination of lectures, real-world examples drawn from a wide array of industries and hands-on sessions. Course handouts include a comprehensive booklet containing copies of all slides presented during the course. The course covers some of the underlying theory behind the forecasting models, however, it is by no means the main emphasis of the course.

The following agenda provides a general overview of the content of the seminar. The actual schedule varies from seminar to seminar based on the dynamics of the group. Thus all times and topics are approximate and subject to change.

Agenda - Day One (9:00 - 5:00)

Introduction to Forecasting

A broad overview of business forecasting and its various uses in the corporation. Topics include approaches to forecasting, features of data, and selection of appropriate forecasting methods for varied data sets.

Forecasting Accuracy

A detailed look into evaluating the accuracy of forecasting methods. Topics include a summary of findings from forecasting competitions and how to use out-of-sample testing as a predictor of model performance.

Morning Break

Time Series Decomposition

An in depth look at time series decomposition routines including classical decomposition and Census X-11. Discussion addresses the components of data, business cycle indicators, and reasons for decomposing data.

Lunch

Exponential Smoothing

A survey of exponential smoothing techniques with particular emphasis on the Holt-Winters family of models. Topics include pros and cons of using these models, when they are best used, how they work, identifying model components, parameter optimization and model diagnosis.

Event Models

Event models extend the functionality of exponential smoothing models by providing adjustments for promotions, strikes and other noncalendar based events. This unit addresses how these models work, how and when they should be used, and how to customize their design to best suit your needs.

Afternoon Break

PC Workshop

This first hands-on session is intended to familiarize attendees with the use of the Forecast Pro software package and reinforce the first day's topics. Students will be guided through sample exercises applying ideas discussed during the lecture sections.

Agenda - Day Two (9:00 - 5:00)

Batch Forecasting

A discussion of issues pertaining to forecasting large volumes of data. Topics include evaluating and forecasting SKU data, ABC (pareto) classification of data, measuring accuracy across multiple time series, and the role of forecasting in Demand/Supply Chain Management solutions.

Morning Break

Multiple Level Forecasting

An extension of batch forecasting, this section explores hierarchical forecasting techniques. Lesson topics include discussion of the need for forecasting at various levels, product vs. geographical hierarchies, reconciliation strategies, top down vs. bottom up approaches, and adjustment for seasonality.

Lunch

Box-Jenkins (ARIMA) Models

An exploration into the use of ARIMA models for business forecasting. Topics include advantages/disadvantages of using these models, how and when they should be applied, automatic identification procedures, differencing, and model diagnostics.

Afternoon Break

PC Workshop

In this session, attendees will be guided through forecasting exercises intended to reinforce the day's topics. In addition to structured exercises, time will be allotted for students to work with their own data with the help of the course instructors.

Agenda - Day Three (9:00 - 3:30)

Dynamic Regression

A detailed look into the ins and outs of regression forecasting. Topics include when regression models are best applied, how to build the model, Ordinary Least Squares, leading indicators, lagged variables, Cochrane-Orcutt models, hypothesis testing, and the use of "dummy" variables.

Morning Break

Dynamic Regression (continued)

Lunch

PC Workshop

This final session consists of a regression example followed by time for attendees to work with their own data. This hands-on session is generally longer than those on the prior two days and is an ideal time to begin applying some of what you have learned to your own data.

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