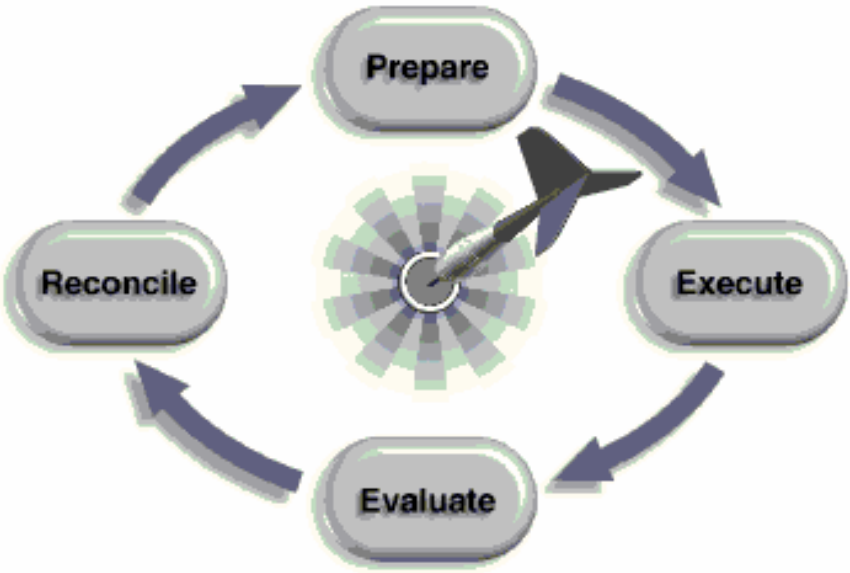

A Training Program Leading to the Certification of Business Forecasters and Demand Planners

CPDF – Certified Professional in Demand Forecasting

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The CPDF qualification will address multidimensional roles in product/service demand forecasting such as data validation, database management, data display, quantitative and qualitative projection technique creation, model execution, forecast accuracy measurement, model and forecaster performance analysis, organization, and collaborative planning. A certification can be earned at three levels:

BASIC (*Silver Dart*) – (65 classroom hours/50 independent hours) – in-class quizzes – **Delphus Silver Certificate of Basic Forecasting Practice**
MASTER (*Platinum Dart*) – completion of Basic + Master Curriculum (additional 35 classroom hours/25 independent hours) – one case study - one exam – **Delphus Platinum Certificate of Forecasting Improvement**
ELITE (*Gold Dart*) – completion of Basic + Master + Elite curriculum (additional 15 classroom hours/10 independent hours) – one case study and one self-administered exam – **Delphus Gold Certificate in Forecasting Excellence and IIF Certificate of Forecasting Practice**.

Certification Schedule (based on a 200 hour program)

Processes	Breakdown Percent	Contact Hours	Self Study Hours	Units	Topics	Basic Contact Hours	Master Contact Hours	Elite Contact Hours
Preparing & validating data	25	15	35	5	10	10	4	-
Executing modeling tasks	35	60	10	4	34	25	25	15
Evaluating models and forecaster performance	15	20	10	4	10	15	3	-
Reconciling forecasts	25	20	30	3	4	15	3	-
Totals	**100%**	**115**	**85**	**16**	**58**	**65**	**35**	**15**

Course Objectives

- Establish the foundation of forecasting as a structured process
- Teach the most accurate, reliable and relevant techniques for forecasting demand in a corporate setting
- Introduce data analysis, model building and diagnostic analysis as the core steps for creating effective forecasting models
- Complement nontraditional methods with established approaches in forecast model development
- Refocus the attention of practitioners away from the mechanical execution of software programs and to a greater understanding of data and the processes generating data
- Embrace collaborative forecasting as a key ingredient to realizing excellence in forecasting and planning among organizations and trading partners.

The Target Audience

- Forecasters with some forecasting experience and exposure to the marketplace and product dynamics
- Managers requiring to supervise and guide the demand planning process
- Job titles of persons also benefiting from this course include brand/product managers, operations managers, inventory and logistics professionals, sales directors, strategic planners, and business development managers.

Brief Contents – Units (Topics)

Course Agenda

- **BASIC** – completion of Basic Curriculum (65 classroom hours/50 independent hours) – each topic is a one-hour session.

Overview – Module I

Module1	Day 1	Day 2	Day 3
	Introduction	Displaying and summarizing time series	How do we measure forecast accuracy?
	Who uses the forecast?	How do we smooth data?	How do we select models and credible forecasts?
	What do you need to forecast?	Workshop 2 – Plotting and Smoothing	How do we design a model building strategy for forecasting?
	Using a structured approach to gather data	How do we use components of a time series	
	Creating drivers of the forecasting process	Workshop 3 – Time Series Components	
	How are factors classified and evaluated?	What are univariate projection techniques?	
	Workshop 1 - Factors	Workshop 4 – Univariate Time Series	

Overview – Module 1

Lesson 1	Who uses the forecast?
Lesson 2	What do you need to forecast?
Lesson 3	Using a structured approach to gathering data
Lesson 4	Creating drivers of the forecasting process
Lesson 5	How are factors classified?
Workshop 1	Thinking about factors in forecasting
Lesson 6	Displaying and summarizing time series
Lesson 7	How do we smooth data?
Workshop 2	Plotting and smoothing time series
Lesson 8	How do we use components of a time series?
Workshop 3	Identifying components in a time series
Lesson 9	What are univariate projection techniques?
Workshop 4	Applying univariate time series techniques
Lesson 10	How do we measure forecast accuracy?
Lesson 11	How do we select models and credible forecasts?
Lesson 12	How do we design a model building strategy for forecasting?

Overview – Module II

Module2	Day 1	Day 2	Day 3
	Review01	How do we create a multiple linear regression model?	What are some typical regression models for forecasting?
	Where do we find sources of information?	How do we interpret the output of a linear regression model?	How do we create models with data?
	How do we acquire and maintain data?	Workshop10	Workshop14
	What are the basic statistical tools for forecasting?	How do we make inferences about model parameters?	
	How do we measure linear and autocorrelation?	Workshop12	
	Workshop08	How do we incorporate qualitative variables?	
	How do we construct a simple linear regression model?	How do we create projections and prediction limits?	
	Workshop09	Workshop13	

Overview – Module 2

Lesson 13 Where do we find sources of information?
Lesson 14 How do we acquire and maintain data?
Lesson 15 What are the basic statistical tools for summarizing data?
Lesson 16 How do we measure linear and autocorrelation?
Workshop 5 Measuring correlations among variables
Lesson 17 How do we construct simple linear regression models?
Workshop 6 Analyzing simple linear regression models
Lesson 18 How do we create a multiple linear regression model?
Lesson 19 Interpreting the output of a linear regression model
Workshop 7 Analyzing multiple linear regression models
Lesson 20 How do we use inferences from regression models?
Workshop 8 Validating linear regression models
Lesson 21 Incorporating qualitative variables into a model
Lesson 22 How do we create projections and prediction limits in regression models?
Workshop 9 How to forecast with qualitative variables
Lesson 23 What are some typical regression models used for forecasting?
Lesson 24 How do we select forecasting models based on historical data?
Workshop 10 Creating regression models for forecasting applications

Overview – Module III

Module3	Day 1	Day 2	Day 3
	Review02	What is the role of demand modes in forecasting I?	Game presentations
	What resources should be devoted to the forecast?	What are the major approaches to forecasting?	Game presentations
	What are the key qualities of a good data source?	Workshop 13 – Choosing demand models	What is the Sales & Operations process?
	How do we find data sources for the factors?	How do we deal with seasonality in forecasting models?	Workshop 15 – Time-phased order forecasts
	Workshop 11 – Identifying data	How do we deal with events and promotions in models?	Why we recommend documentation for ongoing communication with management
	What is a structured approach to forecasting?	Workshop 14 – Seasonality and promotion modeling	
	How, when and by whom are forecasts used?	How do we eveluate multiple metrics?	
	Workshop 12 – Identify users	How do we track and monitor forexcasts?	
		Forecasting Game- Introduction	

Overview – Module 3

Lesson 25 What resources should be devoted to the forecast?
Lesson 26 What are the key qualities of a good data source?
Lesson 27 How do we find data sources for the factors?
Workshop 11 How to identify data for demand forecasting?
Lesson 28 What is a structured approach to demand forecasting?
Lesson 29 How, when and by whom are forecasts used?
Workshop 12 How to identify users of demand forecasting?
Lesson 30 What is the role of demand models in the supply chain?
Lesson 31 What are the major approaches to forecast modeling?
Workshop 13 How to choose demand models for forecasting
Lesson 32 How do we deal with seasonality in forecasting models?
Lesson 33 How do we deal with events and promotions in models?
Workshop 14 How to model seasonality and promotions in regression models
Lesson 34 How do we evaluate multiple metrics?
Lesson 35 How do we track and monitor forecasts?
Lesson 36 What is Sales & Operations planning?
Workshop 15 How to create a time-phased order forecast?
Lesson 37 Why we recommend documentation for ongoing communication with users and management?

MASTER – completion of Basic + Master Curriculum (35 classroom hours/25 independent hours) – each topic is a 1.5 hour session.

Module 4	Day 1	Day 2
	Review – BASIC Modules	What are ARIMA models?
	Creating subjective forecasts	Workshop 18 - ARIMA
	Workshop 16 – Subjective forecasting	What are dynamic regression models?
	What are data- and model-based seasonal adjustment methods?	Interpreting and forecasting with dynamic regression models
	Models for large volume forecasting	Workshop 19 – Dynamic regression models
	Workshop 17 – Automated ES	

Overview – Module 4

Lesson 38 Review of the BASIC modules
Lesson 39 What are subjective approaches to forecasting?
Workshop 16 Subjective forecasting
Lesson 40 What are data- and model-based seasonal adjustment methods?
Lesson 41 Models for large-volume forecasting applications
Workshop 17 Automated exponential smoothing
Lesson 42 What are ARIMA models?
Workshop 18 Using ARIMA models for automated forecasting
Lesson 43 What are dynamic regression models?
Lesson 44 Interpreting and forecasting with dynamic regression models
Workshop 19 Dynamic linear regression models for forecasting

Module5	Day 1	Day 2
	What are Logit regression models?	Forecasting with ARIMA transfer function models
	Interpreting and using logit models	How to combine forecasts
	Workshop 20 – Consumer choice models/ Market segmentation	How to evaluate forecaster performance?
	What are multi-equation models?	How to establish forecast ranges
	How to use econometrics for forecasting	Workshop 22 – Evaluating forecast and forecaster performance
	Workshop 21 Working with econometric models	

Overview – Module 5

Lesson 45 What are logistic regression models?
Lesson 46 Interpreting and using logit models
Workshop 20 Consumer choice and market segmentation modeling
Lesson 47 What are multi-equation models?
Lesson 48 How to use econometrics for forecasting
Workshop 21 Working with econometric models
Lesson 49 How to forecast with ARIMA transfer function models?
Lesson 50 How do we combine forecasts?
Lesson 51 How do we evaluate forecaster performance?
Lesson 52 How do we establish forecast ranges and scenarios?
Workshop 22 Evaluating forecast and forecaster performance

ELITE – completion of Basic + Master + Advanced curriculum (15 classroom hours/10 independent hours) – each topic is a 1.5 hour session - one case study. IIF Certificate of Forecasting Practice.

Module 6	Day 1	Day 2
	What is intermittent demand?	How do we select an appropriate FSS?
	Workshop 23 - Intermittent demand for forecasting	How to make top-down and bottom-up forecasts
	What are neural nets?	Workshop 25 – Multi-level forecasting
	Workshop 24 – Neural nets	

Overview – Module 6

Lesson 53 What is intermittent demand?
Workshop 23 Dealing with intermittent demand in forecasting
Lesson 54 What are neural nets?
Workshop 24 Forecasting with neural nets
Lesson 55 What are Forecast Support Systems and how do we select them?
Lesson 56 How to make multi-level (top down and bottom up) forecasts
Workshop 25 Adjusting multi-level forecasts

