

# EAST ASIA TRAINING & CONSULTANCY PTE LTD

3 Raffles Place, #07-01, Bharat Building, Singapore 048617

Fax : (65)-62506369 Tel: (65)-62199062

[URL:http://www.eastasiatc.com.sg](http://www.eastasiatc.com.sg)

## Time Series Forecasting with R

*(3 - day Professional Development Workshop)*

### Objective

The objective of this course is to make you familiar with a very powerful software program which allows you to carry out almost all your statistical analysis.

### Prerequisite

R is an open source programming language and software environment for statistical data analysis and graphical presentations. R language is widely used by data analysts, forecasters, statisticians, financial analysts, modelers and students. It is a very convenient and powerful programming language that helps users to analyze, test and forecast economics and financial data.

### Who Should Attend

This course is an excellent start for researchers, data analysts, graduate students, risk managers, forecasters who expect to learn basics of R to forecasting models.

### Registration

Please email your completed registration form to us to reserve your seat.

If you need assistance in locating hotel accommodation in the area, please contact us at [administrator@eastasiatc.com.sg](mailto:administrator@eastasiatc.com.sg)

This is a “hands-on” workshop and attendees are required to bring their own pre-installed laptops with the latest version of the software.

## Course Outline

(subject to minor changes)

### DAY 1

Familiar with R programing tools and techniques

- Installing R on your computer
- Understanding the use of in-built packages and built-in datasets
- Use of basic statistical tools in analyzing data
- Plotting data- various types of charts
- Saving output and graphs
- Importing data and reading different type of variables
- Analyzing by subgroups
- Creating charts for associations
- Calculating correlations
- Creating charts and statistics for three or more variables
- Writing functions and short programs
- Basic Regression model

### DAY 2

Modeling and Forecasting Data

- Characteristics of economics and financial data
- Reading time series data and familiar with time series plots
- Understanding basic time series modeling techniques including Box-Jenkins
- Use of moving averages and exponential smoothing for forecasting
- Basics of AR, MA and ARMA models and forecasting time series data
- Modeling and analyzing seasonal time series data
- Understanding the characteristics of non-stationary data
- Modeling and forecasting data using ARIMA and SARIMA models

### DAY 3

Modeling and forecasting using univariate and multivariate models

- Estimating Vector Auto Regression models and forecasting
- Use of Vector Error correction models to forecast data
- Risk management using volatility models

Some case studies and examples will be used. At the end of the course, you will be able to use the techniques discussed during the course to analyze your own data sets and do forecasting and even further analysis.

### **Course Materials Supplied**

- ✓ Course materials with case studies
- ✓ Solution files for all case studies and exercises
- ✓ Certificate of Completion

### **General Notes**

- ✓ The data sets discussed in the case studies will be provided. However, attendees are encouraged to bring their own data sets.
- ✓ All case studies and examples will use real data sets, which were taken from industrial applications.