



S+SPATIAL STATS

Spatial Data Analysis using S-PLUS and S+SpatialStats

2-Day Professional Development Training Course

[East Asia Training & Consultancy Pte Ltd](http://www.eastasiatc.com.sg) invites you to attend a two-day professional development workshop, using the latest version of S-PLUS & S+SpatialStats module to create and build models.

Course Programme

This course is designed to show how **S-PLUS** can be used in the analysis of spatial data. Illustrations rely on methods available with the latest version of **S-PLUS** and **S+SPATIALSTATS** toolbox, as well as a set of tools developed by others. Case studies include applications of EDA to Geostatistical Data; Lattice Data and Point Patterns. This course will provide participants with a strong foundation for conducting analyses of spatial data.

The participants need not have familiarity with **S-PLUS**. However, the knowledge of some fundamentals of any statistical software will be useful. Basic knowledge of elementary statistics will be assumed. This course is not meant to teach the theory of statistical models or spatial statistics, but rather to use them and show how S-Plus can be used to fit and analyze them.

Who Should Attend

The course is intended for geographers, social and environmental scientists, biostatisticians, medical and other data analysts who need to analyze spatial data

Fee

The fee covers extensive course materials and databases, luncheons, and opportunities to meet and network with S-PLUS researchers and forecasters from different industries across Asia. This is a “hands-on” workshop. Participants are required to bring their own laptops.

Registration

The number of participants is restricted. Please register early to guarantee your place. Please complete the official registration form and email it to us at training@eastasiatc.com.sg to reserve your place. Confirmation will only be made upon receiving full course payment. Further instructions will be sent to confirmed participants.

Financial Assistance

Participants may be eligible for MAS Financial Sector Development Fund (FSDF) support on a case by case basis. Interested applicants should submit their applications to the FSDF Secretariat directly. For enquiries, please contact the FSDF secretariat at 65- 6229 9396 or via email at fsdf@mas.gov.sg.

Course Outline

Day 1

❖ **Basics of S-Plus**

- Overview of Statistical Models in S-Plus
- S-Plus Objects
- Manipulating Data

❖ **Introduction to Spatial Data and S+SPATIALSTATS**

- Types of Spatial Data
- Analysis of Spatial Data
- Stochastic Model for Spatial Data
- Spatial Analysis Tools in S+SPATIALSTATS

❖ **Getting Started with S+SPATIALSTATS**

- Starting and Quitting S+SPATIALSTATS
- Using Trellis Graphics in S+SPATIALSTATS
- Importing and Exporting Spatial Data

❖ **Visualizing Spatial Data**

- Exploratory Data Analysis (EDA) Tools
- Applications of EDA to Geostatistical Data
- Applications of EDA to Lattice Data
- Applications of EDA to Point Patterns

Day 2

- ❖ **Analyzing Geostatistical Data**
 - Variogram Estimation
 - Modeling the Empirical Variogram
 - Kriging

- ❖ **Analyzing Lattice Data**
 - Spatial Neighbors
 - Spatial Autocorrelation
 - Spatial Regression Models

- ❖ **Analyzing Spatial Point Patterns**
 - Measures of Spatial Randomness
 - Examining First- and Second-Order Properties

- ❖ **S+SPATIALSTATS and GIS**
 - ARC/INFO Coverages and Spatial Data Analysis
 - Analysis of a Point Coverage
 - Analysis of a Polygon Coverage
 - Analysis of a Grid

- **General Notes**
 - All sessions will have 45 minutes of discussion on the topic and S-Plus functions and 45 minutes of hands-on tutorial with data sets.

 - The data sets discussed in the examples will be provided. However, participants are encouraged to bring their own data sets.