



**StatSoft**<sup>®</sup> PACIFIC

## Training Schedule August 2006 – September 2006

StatSoft Pacific offers standard introductory and advanced training courses (seminars) as well as programming and custom system design services to help corporate customers integrate *STATISTICA* into enterprise-wide computing environments (or to develop specialised extensions to the *STATISTICA* system).

### Seminars

**Introduction to *STATISTICA*** - A two-day course with instruction on how to take advantage of the numerous data management, statistical, and graphical tools in *STATISTICA*.

**Statistical Process Control** - A one-day course that provides users with an understanding of the tools offered in *STATISTICA QC Charts* and *STATISTICA Process Analysis*.

**Design of Experiments** - A one-day course that provides users with an understanding of the tools offered in *STATISTICA DOE*.

**Survey Analysis** - A one-day course with instruction on the tabular, statistical, and graphical tools in *STATISTICA* for analysing survey data.

**Multivariate Analysis** - A two-day course with instruction in multivariate analytical methods, including MANOVA, Discriminant Function Analysis, Factor Analysis, and Canonical Correlation.

**Languages: *STATISTICA* Visual BASIC Introduction** - A one-day course that introduces users to the Visual Basic programming language as used in *STATISTICA*.

**Languages: *STATISTICA* Visual BASIC Advanced** - A two-day course that introduces users to the Visual Basic programming language as used in *STATISTICA*. This course also focuses on the development and customisation available using Visual Basic.

**Time Series Analysis** - A one-day course that introduces participants to techniques that are useful in analysing time series data and the functionality of the Time Series/Forecasting module in *STATISTICA*.

**Linear Models** - A one-day course that introduces the participants to the basic assumptions, data setup, and interpretation of analysis results for linear regression and analysis of variance models.

### Custom Application Development

Custom applications of *STATISTICA* can be developed using *STATISTICA Visual BASIC* for both turn-key applications and special/customised extensions to the *STATISTICA* system. Contact [Australia@statsoft.com](mailto:Australia@statsoft.com) for more information.

## Introductory Course Introduction to *STATISTICA*

### Objectives

- To provide users with an understanding of the general conventions, data management, basic statistics, and graphics capabilities of *STATISTICA*.
- To offer users hands-on instruction in data management, basic statistics, and creating and customising graphs.
- To provide participants with an overview of fundamental statistical concepts in an applied setting.
- To expose participants to the graphical methods available for exploring data and supporting statistical analysis.
- Expert tips on how to optimise the use of *STATISTICA* will be shared.

### Description

This two-day course is designed to instruct the student on how to take advantage of the numerous statistical and graphical tools available in *STATISTICA*. Step-by-step examples will be given on how to enter and manipulate data (including importing from other file formats such as spreadsheets), perform complete statistical analyses and interpret tabular and graphical results, and create and customise many graph types. The user will be advised on how to optimise the use of *STATISTICA*. Participants are encouraged to bring a data set of interest.

### General Conventions

- User-interface
- Customisation options
- Creating reports, documents (OLE)

### Data Management

- Creating, modifying, and saving data
- Importing data from other applications
- Using Windows features: DDE, Clipboard
- File structure manipulation

### Statistics

- Descriptive Statistics
- t-Tests
- ANOVA
- Correlations
- Multiple Regression
- Frequency Tables
- Cross-Tabulations

### Graphics

- Creating graphs
- Customising graphs
- Brushing techniques
- Curve-fitting

### Automation

- Introduction to *STATISTICA Visual BASIC*

## Advanced Courses

Advanced courses are designed to enhance knowledge and understanding of advanced statistical tools in *STATISTICA*. A working knowledge of *STATISTICA* is required (Note: these courses are usually scheduled following introductory classes).

### Statistical Process Control (SPC)

**Objective** - To introduce participants to the SPC capabilities in *STATISTICA QC Charts* and *STATISTICA Process Analysis*.

### SPC

- Gage Repeatability and Reproducibility Analysis
- X-Bar and R/S/S<sup>2</sup> Charts
- CUSUM Charts
- X and Moving Range Charts
- Attribute Charts
- Moving Average (MA) and Exponentially Weighted Moving Average (EWMA) Charts
- Pareto Analysis
- Process Capability Analysis (e.g., Cp, Cpk)

### Design of Experiments (DOE)

**Objective** - To provide participants with an overview of DOE fundamentals, terms, concepts and methods involved in generating and analysing experimental designs and to introduce the participants to the DOE capabilities in *STATISTICA DOE*.

### DOE

- Advantages and disadvantages of various design types (e.g., factorial and fractional factorial designs, central composite designs, etc.)
- Interpreting tabular and graphical results
- Concepts involved in generating and analysing designed experiments
- Analysis of residuals
- Introduction to the simultaneous optimisation of multiple response variables

### Multivariate Analysis

**Objective** - To introduce participants to the several multivariate analytical methods available in *STATISTICA*.

### Canonical Correlation

- Analysis of relationships between sets of variables
- Determining number of significant canonical roots/variates
- Interpreting canonical roots/variates

### MANOVA

- Repeated measures
- Analysis of Covariance
- Unbalanced designs
- Contrast analysis & Post Hoc tests

### Discriminant Analysis

- Assessing discriminatory power
- Analysing nature of discrimination numerically and graphically
- Modeling prediction of group membership

### Factor Analysis

- Component vs. Factor Models
- Rotation methods
- Confirmatory Factor Analysis
- Interpreting canonical roots/variates

### Survey Analysis

**Objective** - To introduce participants to the tabular, statistical, and graphical tools available in *STATISTICA* for analysing survey data.

### Frequency Tables

- Producing and customising frequency tables and corresponding histograms

### Log-Linear Analysis

- Analysing crosstabulations
- Fitting models to frequency data
- Graphical results

### Crosstabulation and Multiple Response Tables

- Producing crosstabulations for raw/aggregated data, stub-and-banner tables
- Calculating *Chi-square* tests
- 3D histograms and interaction plots

### Time Series Analysis

**Objective** - To introduce participants to techniques useful in analysing time series data and the functionality of the Time Series/Forecasting module in *STATISTICA*.

### Identifying Patterns in Time Series

- Systematic pattern and random noise
- Transformations
- Trend analysis
- Analysis of seasonality

### ARIMA

- Two common processes
- Three phases of Box-Jenkins ARIMA approach
- Single series ARIMA interface

### Interrupted Time Series ARIMA

- Impact patterns
- Seasonal and Non-Seasonal exponential smoothing
- Exponential Smoothing models
- X-11 Census Method II Seasonal Adjustment
- The Census II Method
- Interpreting results

### Distributed Lags Analysis

- Interpreting lagged effects and identifying relationship

## Languages: *STATISTICA Visual BASIC*

**Objective** - To introduce participants to the comprehensive data- management language (*STATISTICA Visual BASIC*).

### *STATISTICA Visual BASIC* Introductory One-day Course

- Overview of the general conventions
- Programming environment and VB Object Model
- Accessing Reference Libraries and Macros
- Recording Simple Macro Programs
- Editing and customising Recorded Macro programs
- Calling *STATISTICA* from Visual Basic in other applications

### *STATISTICA Visual BASIC* Advanced Two-day Course

This two-day course includes the sections that are covered in the one-day course plus the following:

- Opening new Applications, Opening Files, Printing
- Basic Functions for Editing Objects (Spreadsheets, Graphs, etc)
- Custom Dialogs, Custom User Interfaces
- Controlling *STATISTICA* Events with SVB Programs
- Customising Toolbars and Menus via *STATISTICA* Visual Basic
- *STATISTICA* Matrix and Statistical Function Libraries

## Linear Models

**Objective** - To introduce participants to regression and analysis of variance techniques available in the following *STATISTICA* Models: Multiple Regression, ANOVA/MANOVA, and Variance Components.

### Regression Analysis

- Standard Analysis
- Stepwise Regression Techniques
- Verifying assumptions/Residual Analysis

### Variance Components

- Introduction to variance components
- Analysis of mixed models

### Analysis of Variance (ANOVA)

- One-way ANOVA
- Multi-way ANOVA
- Complex Designs
- Analysis of Covariance

## Course Schedule

August 2006	7&8	Introductory Course
	9	SPC
	10	DOE
	11	Linear Models
	21&22	Introductory Course
	23	Survey
	24	Time Series
September 2006	25	Languages (One-day)
	28&29	Languages (Two-day)
	4&5	Introductory Course
	6	SPC
	7	DOE
	8	Multivariate
	18&19	Introductory Course
September 2006	20	Survey
	21	Time Series
	22	Languages (One-day)
	25&26	Languages (Two-day)



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