SAS Predictive Modeling

SAS Enterprise Guide: ANOVA, Regression, and Logistic Regression

Duration: 3 Days

This course is designed for SAS Enterprise Guide users who want to perform statistical analyses. The course is written for SAS Enterprise Guide 7.1 along with SAS 9.4, but students with previous SAS Enterprise Guide versions will also get value from this course. An e-course is also available for SAS Enterprise Guide 5.1 and SAS Enterprise Guide 4.3.

Learn how to

- generate descriptive statistics and explore data with graphs
- perform analysis of variance
- perform linear regression and assess the assumptions
- use diagnostic statistics to identify potential outliers in multiple regression
- use chi-square statistics to detect associations among categorical variables
- fit a multiple logistic regression model.

Who should attend
Statisticians and business analysts who want to use a point-and-click interface to SAS

Prerequisites
Before attending this course, you should

- be familiar with both SAS Enterprise Guide and basic statistical concepts
- have completed an undergraduate course in statistics covering *p*-values, hypothesis testing, analysis of variance, and regression
- be able to perform analyses and create data sets with SAS Enterprise Guide software. You can gain this experience by completing the *SAS Enterprise Guide 1: Querying and Reporting* course.

Software Addressed

SAS Analytics Pro, SAS Enterprise Guide, SAS/STAT This course also addresses Base SAS software and touches on SAS/GRAPH and SAS/STAT software. You benefit from this course even if SAS/GRAPH software is not installed at your location.

Course Contents

- discussing descriptive statistics
- discussing inferential statistics

- listing steps for conducting a hypothesis test
- discussing basics of using your SAS software

Getting Started in Enterprise Guide 7.1

- introducing to the SAS Enterprise Guide 7.1 environment

Introduction to Statistics

- discussing fundamental statistical concepts
- examining distributions
- describing categorical data
- constructing confidence intervals
- performing simple tests of hypothesis

Analysis of Variance (ANOVA)

- performing one-way ANOVA
- performing multiple comparisons
- performing two-way ANOVA with and without interactions

Regression

- using exploratory data analysis
- producing correlations
- fitting a simple linear regression model
- understanding the concepts of multiple regression
- building and interpreting models
- describing all regression techniques
- exploring stepwise selection techniques

Regression Diagnostics

- examining residuals
- investigating influential observations and collinearity

Categorical Data Analysis

- describing categorical data
- examining tests for general and linear association
- understanding the concepts of logistic regression and multiple logistic regression
- performing backward elimination with logistic regression

Applied Analytics Using SAS Enterprise Miner

Duration: 3 Days

This training is appropriate for SAS Enterprise Miner 14.1. This course covers the skills that are required to assemble analysis flow diagrams using the rich tool set of SAS Enterprise Miner for both pattern discovery (segmentation, association, and sequence analyses) and predictive modeling (decision tree, regression, and neural network models).

Learn how to

- define a SAS Enterprise Miner project and explore data graphically
- modify data for better analysis results
- build and understand predictive models such as decision trees and regression models
- compare and explain complex models
- generate and use score code
- apply association and sequence discovery to transaction data.

Who should attend
Data analysts, qualitative experts, and others who want an introduction to SAS Enterprise Miner

Prerequisites
Before attending this course, you should be acquainted with Microsoft Windows and Windows software. In addition, you should have at least an introductory-level familiarity with basic statistics and regression modeling. Previous SAS software experience is helpful but not required.

Software Addressed

SAS Enterprise Miner

Course Contents

Introduction

- introduction to SAS Enterprise Miner

Accessing and Assaying Prepared Data

- creating a SAS Enterprise Miner project, library, and diagram
- defining a data source
- exploring a data source

Introduction to Predictive Modeling: Predictive Modeling Fundamentals and Decision Trees

- cultivating decision trees
- optimizing the complexity of decision trees
- understanding additional diagnostic tools (self-study)
- autonomous tree growth options (self-study)

Introduction to Predictive Modeling: Regressions

- selecting regression inputs
- optimizing regression complexity
- interpreting regression models
- transforming inputs
- categorical inputs
- polynomial regressions (self-study)

Introduction to Predictive Modeling: Neural Networks and Other Modeling Tools

- introduction to neural network models
- input selection
- stopped training
- other modeling tools (self-study)

Model Assessment

- model fit statistics
- statistical graphics
- adjusting for separate sampling
- profit matrices

Model Implementation

- internally scored data sets
- score code modules

Introduction to Pattern Discovery

- cluster analysis
- market basket analysis (self-study)

Special Topics

- ensemble models
- variable selection
- categorical input consolidation

- surrogate models
- SAS Rapid Predictive Modeler

Case Studies

- banking segmentation case study
- website usage associations case study
- credit risk case study
- enrollment management case study