

## *Applying Data Mining Techniques Using Enterprise Miner*

**Duration:** 3.0 days

### **Audience**

This Level III course serves as an introduction to data mining and Enterprise Miner software. It is designed for data analysts and qualitative experts as well as those with less of a technical background who want a general understanding of data mining.

### **Course Description** [\[ Click to register ONLINE \]](#)

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This three-day course provides extensive hands-on experience with Enterprise Miner. It covers the basic skills required to assemble analyses using the rich tool set of Enterprise Miner, and it teaches you how to perform cluster analysis and association and sequence analysis. The course also covers concepts fundamental to understanding and successfully applying data mining methods. You learn how to train, assess, and compare regression models, neural networks, and decision trees.

### **Prerequisites**

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Before attending this course, you should be familiar with Microsoft Windows and Windows-based software. No previous SAS software experience is necessary.

### **Course Contents**

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#### **Background**

- growth in computing power and operational databases
- challenges presented by massive, opportunistic data
- prediction and understanding of business outcomes
- contributing disciplines: statistics, machine learning, pattern recognition

#### **Problem Formulation**

- formulating business objectives that can be translated into suitable analytical methods
- applying predictive modeling to database marketing, credit scoring, fraud detection, and healthcare informatics
- applying and recognizing the pitfalls of cluster analysis and association rule discovery

#### **Data Difficulties**

- data structure and organization
- errors, outliers, and missing values
- sampling and oversampling
- dimension reduction and the curse of dimensionality

#### **Introduction to Enterprise Miner**

- exploring workspace components
- setting up projects
- constructing analysis flow diagrams
- conducting initial data exploration
- employing variable selection techniques
- imputing missing values

## Regression

- performing regression using a target marketing example
- examining stepwise regression methods

## Neural Networks

- constructing multilayer perceptrons
- visualizing network complexity
- performing stopped training

## Decision Trees

- constructing a decision tree using a credit scoring example
- examining the functionality of the Decision Tree node
- constructing decision trees with binary and multiway splits
- pruning and assessing decision trees

## Model Evaluation and Implementation

- comparing candidate models
- constructing simple ensemble models
- generating and using score code

## Cluster Analysis

- performing cluster analysis using sales data
- using the Clustering node for  $k$ -means cluster analysis
- clustering with self-organizing maps
- visualizing clusters using the Insight node

## Associations and Sequences

- using the Associations node in a consumer banking example
- quantifying the associations among items
- exploring sequences among items

## Software Addressed

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This course addresses the following software product(s): SAS Enterprise Miner.

## Course Materials

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You receive [Applying Data Mining Techniques Using Enterprise Miner](#) Course Notes.