SAS Programming 1: Essentials

This course is for users who want to learn how to write SAS programs. It is the entry point to learning SAS programming and is a prerequisite to many other SAS courses. If you do not plan to write SAS programs and you prefer a point-and-click interface, you should attend the SAS Enterprise Guide 1: Querying and Reporting course.

This course can help prepare you for the following certification exam(s): SAS Base Programming Exam for SAS 9.

Learn how to

- ✓ navigate the SAS windowing environment
- ✓ read various types of data into SAS data sets
- ✓ validate and clean SAS data sets
- ✓ create SAS variables and subset data
- ✓ combine SAS data sets
- ✓ create and enhance listing and summary reports.

Who should attend

Anyone getting started writing SAS programs

Before attending this course, you should have experience using computer software. Specifically, you should be able to

- ✓ understand file structures and system commands on your operating systems
- ✓ access data files on your operating systems.

No prior SAS experience is needed.

This course addresses Base SAS software.This course also addresses SAS/ACCESS to PC Files and SAS/GRAPH software. This course is appropriate for students who are using SAS 9 software.

Contents

Introduction

- ✓ course logistics
- ✓ overview of Foundation SAS

Getting Started with SAS

- ✓ introduction to SAS programs
- ✓ submitting a SAS program

Working with SAS Syntax

- ✓ mastering fundamental concepts
- ✓ diagnosing and correcting syntax errors

Getting Familiar with SAS Data Sets

- ✓ examining descriptor and data portions
- ✓ accessing SAS data libraries
- ✓ accessing relational databases (self-study)

Reading SAS Data Sets

- ✓ introduction to reading data
- ✓ using SAS data as input
- ✓ subsetting observations and variables
- ✓ adding permanent attributes

Reading Excel Worksheets

- ✓ using Excel data as input
- ✓ doing more with Excel worksheets (self-study)

Reading Delimited Raw Data Files

- ✓ using standard delimited data as input
- ✓ using nonstandard delimited data as input

Validating and Cleaning Data

- ✓ introduction to validating and cleaning data

- ✓ examining data errors when reading raw data files
- ✓ validating data with the PRINT and FREQ procedures
- ✓ validating data with the MEANS and UNIVARIATE procedures
- ✓ cleaning invalid data

Manipulating Data

- ✓ creating variables
- ✓ creating variables conditionally
- ✓ subsetting observations

Combining SAS Data Sets

- ✓ introduction to combining data sets
- ✓ appending a data set (self-study)
- ✓ concatenating data sets
- ✓ merging data sets one-to-one
- ✓ merging data sets one-to-many
- ✓ merging data sets with nonmatches

Enhancing Reports

- ✓ using global statements
- ✓ adding labels and formats
- ✓ creating user-defined formats
- ✓ subsetting and grouping observations
- ✓ directing output to external files

Producing Summary Reports

- ✓ using the FREQ procedure
- ✓ using the MEANS procedure
- ✓ using the TABULATE procedure (self-study)

Introduction to Graphics Using SAS/GRAPH (Self-Study)

- ✓ creating bar and pie charts
- ✓ creating plots
- ✓ enhancing output

Learning More

- ✓ SAS resources
- ✓ beyond this course