SAS Programming I : Essentials

Duration: 2.0 days

This Level II course is designed for those who want to learn to write SAS programs to accomplish typical data processing tasks and is a prerequisite to many other SAS courses.

Course Description [Click to register ONLINE]

This foundation course focuses on the following key areas: reading raw data files and SAS data sets and writing the results to SAS data sets; subsetting data; combining multiple SAS files; creating SAS variables and recoding data values; and creating listing and summary reports. If you do not plan to write SAS programs and prefer a menu-driven, point-and-click approach, you should consider taking the Querying and Reporting Using SAS Enterprise Guide course.

Prerequisites

Before attending this course, you should have experience programming in some language and an understanding of basic computer concepts. Specifically, you should be able to

- understand file structures and system commands on your operating system
- use a full-screen text editor
- write system commands to create and access system files
- understand programming logic concepts.

If you do not feel comfortable with the prerequisites or are new to programming and think that the pace of this course may be too demanding, you can take the Introduction to Programming Concepts Using SAS Software course before attending this course. Introduction to Programming Concepts Using SAS Software is designed to introduce you to computer programming and covers a portion of the SAS Programming I: Essentials material at a slower pace.

Course Contents

Getting Started with the SAS System

- accessing the SAS System
- navigating among the SAS programming windows
- understanding the difference between batch mode and interactive mode
- opening and submitting a program in the Program Editor window
- checking the SAS log for program errors
- examining your program's output
- understanding data sets, variables, and observations
- understanding DATA and PROC steps
- diagnosing and correcting programming errors
- explaining SAS syntax and SAS naming conventions

Getting Familiar with SAS Data Sets

- explaining the concept of a SAS data library
- differentiating between a permanent library and a temporary library
- investigating a SAS data library using the CONTENTS procedure

Producing List Reports

- generating simple list reports using the PRINT procedure

- displaying selected columns and rows in a list report
- displaying a list report with column totals
- sorting observations in a SAS data set
- controlling page breaks for subgroups
- identifying observations using the ID statement

Enhancing Output

- customizing report appearance
- formatting data values
- creating HTML reports

Creating SAS Data Sets

- reading raw data files using column input and formatted input
- examining data errors
- assigning variable attributes
- reading Microsoft Excel spreadsheets (self-study)

Programming with the DATA Step

- reading SAS data sets and creating variables
- executing statements conditionally using IF-THEN logic
- controlling the length of character variables explicitly with the LENGTH statement
- selecting rows to include in a SAS data set
- selecting variables to include in a SAS data set
- using SAS date constants
- reading date fields from Microsoft Excel spreadsheets (self-study)

Combining SAS Data Sets

- using the SET statement to concatenate two or more SAS data sets
- using the RENAME= data set option to change the names of variables
- using the SET and BY statements to interleave two or more SAS data sets

Producing Summary Reports

- creating one-way and two-way frequency tables using the FREQ procedure
- generating simple descriptive statistics using the MEANS procedure
- using the REPORT procedure to create a listing report
- using the RBREAK statement to produce a grand total
- creating tabular summary reports using the TABULATE procedure (self-study)

Introduction to Graphics (Optional)

- producing bar and pie charts
- enhancing output with titles, footnotes, color, and fonts
- producing plots
- controlling appearance of the axes

Classroom Course Materials

Students attend classroom courses in one of our public training centers. You receive a hardcopy of the course notes.