

SAS Programming II: Manipulating Data with the Data Step

Duration: 3.0 days

*This Level III course is designed for experienced SAS programmers. This course builds on the concepts presented in the [SAS Programming I: Essentials](#) course and is **not** recommended for beginning SAS software users.*

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

This intermediate course focuses on how to manage SAS data set input and output, work with different data types, and manipulate data. Specifically, the course discusses using the DATA step to control SAS data set input and output, combine SAS data sets, summarize data, process data iteratively with DO loops and arrays, and perform data manipulations and transformations.

Prerequisites

Before attending this course, you should have at least six months of experience writing SAS programs or have completed the [SAS Programming I: Essentials](#) course and used SAS for at least one month. Specifically, you should be able to

- create and access files in your operating environment
- explain the structure of a SAS program
- explore the structure and contents of a SAS data set
- distinguish between syntax and data errors
- debug a SAS program
- create a SAS data set from a fixed-format external file
- subset the rows and columns of a SAS data set
- create derived variables
- write conditional logic statements
- read and write SAS date values
- access SAS data libraries
- sort a SAS data set
- read one or more SAS data sets using a SET statement
- perform a simple merge using a MERGE statement
- create detail and summary reports from a SAS data set
- place titles and footnotes on reports.

Course Contents

Introduction

- review of SAS basics
- review of DATA step processing
- review of displaying SAS data sets
- working with existing SAS data sets

Controlling Input and Output

- outputting multiple observations
- writing to multiple SAS data sets
- selecting variables and observations
- writing to external files

Summarizing Data

- creating an accumulating total variable
- accumulating totals for a group of data

Reading and Writing Different Types of Data

- reading delimited raw data files
- controlling when a record loads
- reading hierarchical raw data files

Data Transformations

- manipulating character variables
- manipulating numeric variables
- manipulating numeric variables based on dates
- converting variable type

Processing Data Iteratively

- performing DO loop processing
- performing SAS array processing

Combining SAS Data Sets

- match-merging two or more SAS data sets
- performing simple joins using the SQL procedure (self-study)

Learning More

- identifying additional resources

Classroom Course Materials

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