

# SAS® Programming 1: Essentials

## Course Description

This course is for users who want to learn how to write SAS programs to access, explore, prepare, and analyze data. It is the entry point to learning SAS programming for data science, machine learning, and artificial intelligence. It 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 for SAS 9, SAS Certified Specialist: Base Programming Using SAS 9.4, SAS Certified Associate: Programming Fundamentals Using SAS 9.4.

## Learn how to

- Use SAS Studio and SAS Enterprise Guide to write and submit SAS programs.
- Access SAS, Microsoft Excel, and text data.
- Explore and validate data.
- Prepare data by subsetting rows and computing new columns.
- Analyze and report on data.
- Export data and results to Excel, PDF, and other formats.
- Use SQL in SAS to query and join tables.

## Course Prerequisites

Before attending this course, you should have experience using computer software. Specifically, you should:

- Understand file structures and system commands on your operating systems.
- Be able to access data files on your operating systems.

No prior SAS experience is needed.

## Who Should Attend?

Anyone starting to write SAS programs

## Course Contents

### Essentials

- The SAS programming process.
- Using SAS programming tools.
- Understanding SAS syntax.

## Accessing Data

- Understanding SAS data.
- Accessing data through libraries.
- Importing data into SAS.

## Exploring and Validating Data

- Exploring data.
- Filtering rows.
- Formatting columns.
- Sorting data and removing duplicates.

## Preparing Data

- Reading and filtering data.
- Computing new columns.
- Conditional processing.

## Analyzing and Reporting on Data

- Enhancing reports with titles, footnotes, and labels.
- Creating frequency reports.
- Creating summary statistics reports.

## Exporting Results

- Exporting data.
- Exporting reports.

## Using SQL in SAS

- Using Structured Query Language in SAS.
- Joining tables using SQL in SAS.

## Course Duration

3 days

## Software Addressed:

Base SAS software, SAS/ACCESS Interface to PC Files.