



# SAS® Programming 1: Essentials

## Duration

3 days

## Delivery

Classroom

## Course code

UK\_PRG1

## Online registration

[www.sas.com/uk/education/courses/uk\\_prg1.html](http://www.sas.com/uk/education/courses/uk_prg1.html)

## UK CONTACT INFORMATION

▶▶ [www.sas.com/uk/education](http://www.sas.com/uk/education)

▶▶ 0845 402 9902

▶▶ [education@suk.sas.com](mailto:education@suk.sas.com)

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.

### 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.

### Prerequisites:

Before attending this class, 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 experience of SAS is necessary.

### Course 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

- examining data errors when reading raw data files
- validating data with the PRINT
- 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.

## Producing Summary Reports

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

## Enhancing Reports

- using global statements
- adding labels and formats (self-study review)
- creating user-defined formats
- subsetting and grouping observations (self-study review)
- directing output to external files

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

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

## Learning More

- SAS resources
- beyond this course.

## Software addressed:

This course addresses the following software products:

- Base SAS
- SAS/ACCESS to PC Files
- SAS/GRAPH.

This course is appropriate for learners who are using SAS®9 software.

## Training Path for Programmers/Analysts

