



...Maximizing your investment in the SAS® System...  
and those in your organization who use it...

**This internet-based course provides the core skills needed to successfully apply key SAS tools to your data. It is composed of six live half-day online sessions including instructor monitored hands-on exercises using sample data/problems provided after you register.**

After taking this seminar you will be able to:

- Understand core SAS System concepts such as data set, data step, procedure step and data set descriptor portion.
- Select records/rows from an existing data set and apply SAS programming language tools to them
- Apply PROCs PRINT and FREQ to create simple reports
- Add titles and footnotes to your output
- Understand ERRORS and WARNINGS shown in your SASLOG
- Write and submit SAS programs for execution
- Know when to use a Data Step and when to apply a Procedure Step in your programming/reporting tasks
- Access the SAS Software documentation to obtain answers to your questions
- Successfully complete the Summarizing and Reporting Data, and the SAS 201: Advanced SAS Programming seminars also offered by Sierra.

# SAS® 101 Online: Intro. to SAS Programming



## Presentation Format:

Six **half-day online sessions**, including instructor-guided hands-on exercises. Also available for delivery in traditional in-person classroom format.

## Overview

This live, six-part online seminar introduces you to the core concepts and tools available to manage, report and analyze data using BASE SAS Software. You connect via the internet for a combination of instructor presentations/demonstrations and hands-on exercises during each of the four-hour sessions. During the hands-on exercises your computer is monitored by the instructor, who gives “real time” advice and feedback to you as you complete the example tasks. **In order to take this class you must have your own licensed copy of SAS Software installed on the computer which you will use to connect to the internet.** Tuition includes voice access to the sessions via a toll-free number provided after you enroll. Please visit <http://www.regonline.com/intro2sas> for schedule and enrollment information.

## Intended Audience

This session is designed for attendees with little, or no prior experience with the SAS System, or for those who have not used SAS for an extended period who wish to re-acquaint themselves with the product. The materials presented assume a basic level of understanding, and familiarity with, computer concepts such as data set and the rows/columns of a data set as well as basic arithmetic concepts such as addition, multiplication and division.

## Seminar Topics:

### Overview of the SAS System

- Core concepts of the SAS System
  - Data Step, Procedure Step
  - Interplay/relationship between Data and Procedure Steps

### The SAS Data Set: rows, columns and descriptor portion

### Looking at SAS Data Sets

- The PRINT and CONTENTS Procedures
- The SAS Viewtable™

### Applying BASE SAS Programming Tools

- Creating SAS Data Sets
  - Extracting Observations and Variables (rows and columns) from an Existing SAS Data Set
- Selecting Random Samples from a SAS Data Set
- Key SAS Programming Language Functions
- Applying SAS-Supplied Formats to Your Variables
- Creating Your Own Formats with PROC FORMAT
- Working with Date and Time Variables in the SAS System
- Joining/Merging SAS Data Sets
- Exporting Data from SAS to other file formats

### Interpreting NOTES, ERROR and WARNING Messages in the SASLOG

### Applying SAS Procedures to Your SAS Data Sets

- PROC FREQ: generating frequency tables and “cross tabs” from your data sets
- PROC PRINT: displaying the rows/columns of your data set
- PROC MEANS: analysis and summary of numeric data variables

**Contact Sierra Information Services for More Information**

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## About the Instructor

This seminar is written and presented by Andrew Karp, Principal Consultant at Sierra Information Services, based on his extensive experience applying—and teaching others how to apply—SAS Software tools to data. Andrew is a 28-year SAS Software user and SAS Certified Professional™ who for 21 of those years has been teaching others to use SAS for data analysis, management, and reporting. A well-known presenter at events for SAS users, he has been selected as an invited speaker at 16 consecutive SAS Global Forum (formerly SUGI) events and to share his expertise at other SAS user events in eleven countries, including the People's Republic of China and the former Soviet Union.

Prior to starting Sierra in 1994 Andrew applied SAS to projects while employed at Federal Express Corporation, Kaiser Foundation Health Plan and Pacific Gas & Electric Company. Since starting his own firm he has been an analytics consultant to, among others, Wells Fargo Bank, Blue Shield of California, the Sacramento Municipal Utilities District, Bear Creek Corporation (the parent company of Harry & David's), American Honda Motor Company, IBM's Storage Systems Division, and the Victoria's Secret division of Limited Brands.

Andrew has held leadership roles with the Pacific NW and Western regional users groups, and is currently chair of the Sacramento Valley SAS Users Group. He is also the founder of the Virtual SAS Users Group (VirtualSUG), an online free resource for the SAS user community.

Andrew earned undergraduate and graduate degrees from The George Washington University and taught semester-length courses in SAS topics for UC Berkeley's Extension Division from 1989 to 1995. He been a visiting lecturer in the Department of Experimental Statistics at Louisiana State University, the Department of Decision Sciences at The George Washington University, the University of Auckland in New Zealand, and for the statistics departments at California Polytechnic Univ. San Luis Obispo and California State University East Bay (formerly Cal State Hayward).

## About Sierra Information Services

Sierra Information Services is a leading independent provider of consulting and training services in the intelligent application of SAS tools to data. We provide a wide range of analytic and data management services to clients in many industry sectors, as well as a broad array of SAS software training solutions delivered on-site, at public venues, and via the internet.

Please visit our web site at [www.SierraInformation.com](http://www.SierraInformation.com) or call us (707) 360 5383 to learn more about how we can assist you. We look forward to hearing from you soon!



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