

# Wizards Training Inc.

## SAS Course Curriculum

Duration: Four Weekends/ Sat & Sun: 9.00am – 1.00pm or 1.00pm – 5.00pm  
Weekdays - Mon, Wed, Fri: 6.30pm – 9.30pm or Tue, Thu: 6.30pm – 9.30pm

## SAS

### 1. Introduction to Programming Using SAS® Software

- Introduction to SAS software
- Using SAS in the Windowing Environment
- Methods of reading raw data

### 2. SAS Programming I: Essentials

- Creating and executing SAS programs in batch and interactive mode
- Understanding errors in SAS log
- Understanding SAS data set and library structure
- Understanding SAS syntax and SAS naming conventions
- Overview of Base SAS Procedures
- Creating DATA and PROC steps
- SAS Data Step statements

### 3. SAS Programming II: Manipulating Data with the DATA Step

- Controlling Input and Output Data
- Summarizing Data
- Reading and Writing Different Types of Data
- Data Transformations
- Processing Data Iteratively
- Combining SAS Data Sets

### 4. SAS Macro Language

- Introduction to Macros
- Applying Macro Variables in SAS programs
- Incorporating SAS Macros in DATA Step
- Running Macro Programs in SAS Software
- Techniques for Storing Macros

### 5. SQL Processing with the SAS System

- Overview of SQL Procedure
- Displaying Query Results
- Subqueries
- SQL Joins and Set Operators
- Creating Indexes and tables in SQL
- PROC SQL as compared to the DATA Step
- SAS Dictionary tables and views
- Interfacing PROC SQL with the Macro language

**Training Location: 1039 Sterling Road, Ste. 103, Herndon-VA-20170. USA.**  
**Ph: 703-867-7699 Fax: 703-956-6769 [training@wizardstraining.net](mailto:training@wizardstraining.net)**  
**(Behind Fuddruckers @ Cross Roads of Dulles on Elden Street)**

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### 6. Output Delivery System (ODS)

- Basic Concepts of ODS
- Explore various ODS destinations like HTML, PDF, RTF, XML, PRINTER
- Using the Output Delivery System in the DATA Step
- TEMPLATE Procedure
- Customizing Table Templates
- Customizing Style Templates with ODS
- Using Options and ODS ESCAPECHAR

### 7. Creating Detail and Summary Reports

- Creating Detail Reports with the REPORT Procedure
- Creating Summary Reports with the REPORT Procedure
- Creating Summary Reports with the TABULATE Procedure
- Other Methods for Summarizing and Reporting using FORMATS

### 8. SAS Enterprise Guide™ : Querying and Reporting

- Access and Transform Data
- Creating Simple Queries
- Creating Summarized Output
- Working with Results and Automating Projects

### 9. Data Cleaning Techniques using DATA step programming and SAS procedures

- Checking values of Character Variables
- Checking values of Numeric Variables
- Checking for Missing Values
- Double Entry and Verification
- Looking for Duplicates and n Observations per Subject

### 10. Optimization Tips and Techniques in SAS Software

- Efficiency Techniques and Benchmarking
- SAS Dataset Modification and Space Reduction
- Table Lookup Techniques
- Sorting Techniques and Efficiencies for Large Data Sets

Base SAS, SAS/GRAPH, and SAS/STAT software will be used in this class.

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