



## SAS A00-231 Certification Exam Syllabus



This page is a one-stop solution for any information you may require for SAS Certified Specialist - Base Programming Using SAS 9.4 (A00-231) Certification exam. The SAS A00-231 Exam Summary, Syllabus Topics and Sample Questions provide the base for the actual SAS Base Programming Specialist exam preparation, we have designed these resources to help you get ready to take your dream exam.

The SAS Certified Specialist - Base Programming Using SAS 9.4 credential is globally recognized for validating SAS Base Programming knowledge. With the SAS Base Programming Specialist Certification credential, you stand out in a crowd and prove that you have the SAS Base Programming knowledge to make a difference within your organization. The SAS Certified Specialist - Base Programming Using SAS 9.4 Certification (A00-231) exam will test the candidate's knowledge on following areas.

### SAS A00-231 Exam Summary:

Exam Name	SAS Certified Specialist - Base Programming Using SAS 9.4
Exam Code	A00-231
Exam Duration	135 minutes
Exam Questions	40-45
Passing Score	725 / 1000
Exam Price	\$180 (USD)
Books	SAS Programming 1: Essentials SAS Programming 2: Data Manipulation Techniques
Exam Registration	Pearson VUE
Sample Questions	SAS Base Programming Certification Sample Question
Practice Exam	<b>SAS Base Programming Certification Practice Exam</b>

### SAS A00-231 Exam Topics:

Objective	Details
<b>Access and Create Data Structures</b>	
Create temporary and permanent SAS data sets.	- Use a DATA step to create a SAS data set from an existing SAS data set.
Investigate SAS data libraries using base SAS utility procedures.	- Use a LIBNAME statement to assign a library reference name to a SAS library. - Investigate a library programmatically using the CONTENTS procedure.

Objective	Details
Access data.	<ul style="list-style-type: none"> <li>- Access SAS data sets with the SET statement.</li> <li>- Use PROC IMPORT to access non-SAS data sources.</li> </ul> <p>Read delimited and Microsoft Excel (.xlsx) files with PROC IMPORT.</p> <p>Use PROC IMPORT statement options (OUT=, DBMS=, REPLACE)</p> <p>Use the GUESSINGROWS statement</p> <ul style="list-style-type: none"> <li>- Use the SAS/ACCESS XLSX engine to read a Microsoft Excel workbook.xlsx file.</li> </ul>
Combine SAS data sets.	<ul style="list-style-type: none"> <li>- Concatenate data sets.</li> <li>- Merge data sets one-to-one.</li> <li>- Merge data sets one-to-many.</li> </ul>
Create and manipulate SAS date values.	<ul style="list-style-type: none"> <li>- Explain how SAS stores date and time values.</li> <li>- Use SAS informats to read common date and time expressions.</li> <li>- Use SAS date and time formats to specify how the values are displayed.</li> </ul>
Control which observations and variables in a SAS data set are processed and output.	<ul style="list-style-type: none"> <li>- Use the WHERE statement in the DATA step to select observations to be processed.</li> <li>- Subset variables to be output by using the DROP and KEEP statements.</li> <li>- Use the DROP= and KEEP= data set options to specify columns to be processed and/or output.</li> </ul>
<b>Manage Data</b>	
Sort observations in a SAS data set.	<ul style="list-style-type: none"> <li>- Use the SORT Procedure to re-order observations in place or output to a new dataset with the OUT= option.</li> <li>- Remove duplicate observations with the SORT Procedure.</li> </ul>
Conditionally execute SAS statements.	<ul style="list-style-type: none"> <li>- Use IF-THEN/ELSE statements to process data conditionally.</li> <li>- Use DO and END statements to execute multiple statements conditionally.</li> </ul>
Use assignment statements in the DATA step.	<ul style="list-style-type: none"> <li>- Create new variables and assign a value.</li> <li>- Assign a new value to an existing variable.</li> <li>- Assign the value of an expression to a variable.</li> <li>- Assign a constant date value to a variable.</li> </ul>
Modify variable attributes using options and statements in the DATA step.	<ul style="list-style-type: none"> <li>- Change the names of variables by using the RENAME= data set option.</li> <li>- Use LABEL and FORMAT statements to modify attributes in a DATA step.</li> <li>- Define the length of a variable using the LENGTH statement.</li> </ul>
Accumulate sub-totals and totals using DATA step statements.	<ul style="list-style-type: none"> <li>- Use the BY statement to aggregate by subgroups.</li> <li>- Use first. and last. processing to identify where groups begin and end.</li> <li>- Use the RETAIN and SUM statements.</li> </ul>

Objective	Details
Use SAS functions to manipulate character data, numeric data, and SAS date values.	<ul style="list-style-type: none"> <li>- Use SAS functions such as SCAN, SUBSTR, TRIM, UPCASE, and LOWCASE to perform tasks such as the tasks shown below. <ul style="list-style-type: none"> <li>Replace the contents of a character value.</li> <li>Trim trailing blanks from a character value.</li> <li>Search a character value and extract a portion of the value.</li> <li>Convert a character value to upper or lowercase.</li> </ul> </li> <li>- Use SAS numeric functions such as SUM, MEAN, RAND, SMALLEST, LARGEST, ROUND, and INT.</li> <li>- Create SAS date values by using the functions MDY, TODAY, DATE, and TIME.</li> <li>- Extract the month, year, and interval from a SAS date value by using the functions YEAR, QTR, MONTH, and DAY.</li> <li>- Perform calculations with date and datetime values and time intervals by using the functions INTCK, INTNX, DATDIF and YRDIF.</li> </ul>
Use SAS functions to convert character data to numeric and vice versa.	<ul style="list-style-type: none"> <li>- Explain the automatic conversion that SAS uses to convert values between data types.</li> <li>- Use the INPUT function to explicitly convert character data values to numeric values.</li> <li>- Use the PUT function to explicitly convert numeric data values to character values.</li> </ul>
Process data using DO LOOPS.	<ul style="list-style-type: none"> <li>- Explain how iterative DO loops function.</li> <li>- Use DO loops to eliminate redundant code and to perform repetitive calculations.</li> <li>- Use conditional DO loops.</li> <li>- Use nested DO loops.</li> </ul>
Restructure SAS data sets with PROC TRANSPOSE.	<ul style="list-style-type: none"> <li>- Select variables to transpose with the VAR statement.</li> <li>- Rename transposed variables with the ID statement.</li> <li>- Process data within groups using the BY statement.</li> <li>- Use PROC TRANSPOSE options (OUT=, PREFIX= and NAME=).</li> </ul>
Use macro variables to simplify program maintenance.	<ul style="list-style-type: none"> <li>- Create macro variables with the %LET statement</li> <li>- Use macro variables within SAS programs.</li> </ul>
<b>Error Handling</b>	
Identify and resolve programming logic errors.	<ul style="list-style-type: none"> <li>- Use the PUTLOG Statement in the Data Step to help identify logic errors.</li> <li>- Use PUTLOG to write the value of a variable, formatted values, or to write values of all variables.</li> <li>- Use PUTLOG with Conditional logic.</li> <li>- Use temporary variables N and ERROR to debug a DATA step.</li> </ul>

Objective	Details
Recognize and correct syntax errors.	<ul style="list-style-type: none"> <li>- Identify the characteristics of SAS statements.</li> <li>- Define SAS syntax rules including the typical types of syntax errors such as misspelled keywords, unmatched quotation marks, missing semicolons, and invalid options.</li> <li>- Use the log to help diagnose syntax errors in a given program.</li> </ul>
<b>Generate Reports and Output</b>	
Generate list reports using the PRINT procedure.	<ul style="list-style-type: none"> <li>- Modify the default behavior of PROC PRINT by adding statements and options such as <ul style="list-style-type: none"> <li>use the VAR statement to select and order variables.</li> <li>calculate totals with a SUM statement.</li> <li>select observations with a WHERE statement.</li> <li>use the ID statement to identify observations.</li> <li>use the BY statement to process groups.</li> </ul> </li> </ul>
Generate summary reports and frequency tables using base SAS procedures.	<ul style="list-style-type: none"> <li>- Produce one-way and two-way frequency tables with the FREQ procedure.</li> <li>- Enhance frequency tables with options (NLEVELS, ORDER=).</li> <li>- Use PROC FREQ to validate data in a SAS data set.</li> <li>- Calculate summary statistics and multilevel summaries using the MEANS procedure</li> <li>- Enhance summary tables with options.</li> <li>- Identify extreme and missing values with the UNIVARIATE procedure.</li> </ul>
Enhance reports system user-defined formats, titles, footnotes and SAS System reporting options.	<ul style="list-style-type: none"> <li>- Use PROC FORMAT to define custom formats. <ul style="list-style-type: none"> <li>VALUE statement</li> <li>CNTLIN= option</li> </ul> </li> <li>- Use the LABEL statement to define descriptive column headings.</li> <li>- Control the use of column headings with the LABEL and SPLIT=options in Proc Print output.</li> </ul>
Generate reports using ODS statements.	<ul style="list-style-type: none"> <li>- Identify the Output Delivery System destinations.</li> <li>- Create HTML, PDF, RTF, and files with ODS statements.</li> <li>- Use the STYLE=option to specify a style template.</li> <li>- Create files that can be viewed in Microsoft Excel.</li> </ul>
Export data	<ul style="list-style-type: none"> <li>- Create a simple raw data file by using the EXPORT procedure as an alternative to the DATA step.</li> <li>- Export data to Microsoft Excel using the SAS/ACCESS XLSX engine.</li> </ul>

The SAS has created this credential to assess the knowledge and understanding of a candidate in the area as above via the certification exam. The SAS Base Programming (A00-231) Certification exam contains a high value in the market being the brand value of the SAS attached with it. It is highly recommended to a candidate to do a thorough study and also get a hand full of the practice to clear SAS Certified Specialist - Base Programming Using SAS 9.4 exam without any hiccups.

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