Advanced Certification Review – The Language of SAS

Please read our Terms and Conditions and our Privacy Policy.

Duration: 22 – 24 hours (plus additional time for exercises)

Learning Overview:

The Advanced Certification Review course is useful to refresh your knowledge of Macros, PROC SQL and learn Advanced Programming techniques in the Language of SAS to help you attain SAS Advanced certification.

With access to our exam preparation product MemoTrainer™ and walkthrough of practice exam questions, this course will close any gaps in knowledge and provide a great chance of attaining certification.

There are comprehensive exercises throughout to help assess and reinforce your learning with the opportunity to join an end of day Q&A session with the Instructor.

Learning Outcomes:

By the end of this course you will be able to:

1. Use PROC SQL syntax to Combine and Manage Tables
2. Define Macro Programs using Global and Local Symbol Tables
3. Create Macro Variables in DATA Step and PROC SQL
4. Apply Conditional and Iterative Macro Processing
5. Perform Table Lookups using a variety of Advanced Programming Methods
6. Combine and Modify Data using Advanced Programming Techniques
7. Use Advanced Functions and create Custom Functions with Proc FCMP
8. Code PERL Regular Expressions to Match, Change and Validate data

Delivery Schedule:

On day 1 we invite you to join a short online welcome to meet your instructor, introduce you to our Digital Learning platform and get you started on the Advanced Programming learning of this course

When learning is complete you will be signposted to practice exam questions and given access to our certification exam preparation product MemoTrainer™

Each day finishes with an opportunity for you to join an open Q&A session with the instructor if you need any additional support.

	09:00 - 12:00	13:00 - 17:00
Day 1	Welcome and Advanced Programming (Live Online Class 1)	Advanced Programming (Live Online Class 2)
Day 2	Advanced Programming (Live Online Class 3)	Advanced Programming (Live Online Class 4)
Day 3	PROC SQL/ Macro / Advanced Programming Learning Consolidation	PROC SQL/ Macro / Advanced Programming Learning Consolidation
Day 4	Advanced Certification Exam Prep (Mock Exam/MemoTrainer)	Advanced Certification Exam Prep (Mock Exam/MemoTrainer)
Day 5	Advanced Certification Exam Prep (Mock Exam/MemoTrainer)	Advanced Certification Exam Prep - 30 min individual session with instructor

Pre-requisites:

To get the most out of this course, it is vital that you already have:

- an in-depth knowledge of data step functions and programming syntax to generate efficient code
- the ability to generate and interpret queries using the SQL procedure
- experience of creating macro variables and macro programs using the Macro Processing facility

For the hands-on practice activities in the course, you will need access to an environment that runs the programming Language of SAS. On our courses, we signpost you to some of the free tools available.

Check out the link below to review system requirements:

- SAS® OnDemand for Academics

Learning Modules:

Sorting Datasets

Learning Objective: Describe methods to improve sort performance

- Review of the PROC SORT procedure
- Parallel Processing
- Space Requirements for Sorting
- Selecting Observations

Selecting Observations

Learning Objective: Explain techniques for selecting observations

- Using the DISTINCT keyword in PROC SQL
- BY-Group processing
- Using FIRST. and LAST. in the DATA step

Lookup Tables: Formats

Learning Objective: Create, Maintain and Use Formats as Lookup Tables

- Create and Use Formats
- Use Formats as lookup tables
- Create and Maintain Formats from a dataset
- Picture Formats

Lookup Tables: Arrays

Learning Objective: Define and Use Arrays as Lookup Tables

- One-Dimensional Arrays – Definition and Usage

- DIM Function
- One-Dimensional Array Lookup Tables
- Multi-Dimensional Array Lookup Tables
- Create a Multi-Dimensional Array from a Dataset

Lookup Tables: Hash and Hiter Objects

Learning Objective: Define, Load and Use Hash Objects as Lookup Tables

- Define a Hash Object
- Load Data into a Hash Object
- Lookup Data using Hash Object Methods
- Chained Lookups
- Hiter Objects

Lookup Tables: Combining Data

Learning Objective: Combining Data using Data Step and PROC SQL

- Data Step Merges
- PROC SQL Joins
- Multiple SET Statements
- Combining Data using an Index
- Combining Detail and Summary Data

Modifying Data

Learning Objective: Modify/Update Data Values using the MODIFY Statement

- The MODIFY Statement
- Master and Transaction Datasets
- Using an Index
- Control Statements
- Handling Errors

Advanced Functions

Learning Objective: Creating and Using Advanced Functions

- Using the LAG function
- Using the COUNT, COUNTC and COUNTW functions
- Using the FIND, FINDC and FINDW functions
- Creating custom functions with Proc FCMP

PERL Regular Expression

Learning Objective: Use PERL Regular Expressions to Match, Change and Validate data

- PERL Regular Expressions – PRXMATCH, PRXPARSE and PRXCHANGE
- Metacharacters
- PRX#Functions
- Use PERL Regular Expressions to validate data