Introduction to Statistics Using SAS® 9.2: ANOVA, Regression, and Logistic Regression

Duration

3 days

Delivery

Classroom

Course code

ST092

Online registration

www.sas.com/uk/education/courses/st092.html

UK CONTACT INFORMATION

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This three-day course is an excellent follow-on to the *SAS Programming 1: Essentials* course for anyone using, or wanting to use, statistics in a business environment. It covers a range of introductory statistical topics including the best way to describe your data, statistical inference, analysis of variance, simple and multiple linear regression, categorical data analysis, and an introduction to binary logistic regression.

For a more in-depth learning of logistic regression please see the *Categorical Data Analysis using Logistic Regression* course.

Learn how to:

- see how statistics can be used to answer business problems
- construct graphs to explore, summarise and interpret data,
- assess the precision of your statistics,
- examine ways of testing business questions,
- examine relationships between variables,
- produce predictions of continuous target variables by fitting simple and multiple linear regression models explain why categorised data are treated differently,
- know what to do if your target variable is binary (e.g. Yes/No, Default/Repay).

Who should attend:

Anyone who would like to learn or know more about using statistical tests within their work environment. This course is not industry specific and emphasis will be placed on using SAS® to carry out data investigation, analyses and the interpretation of the results to answer business problems.

Prerequisites:

Before attending this course, you should be able to execute SAS programs, create SAS data sets and understand SAS procedures. This knowledge can be gained by attending the *SAS Programming 1: Essentials* course. No prior knowledge of statistics is necessary.

Course contents:

Business Problems and Statistical Solutions

- understanding the purpose of statistics
- calculating some simple summary statistics
- interpreting output from the UNIVARIATE procedure.
- examining the variability of data, why can we never be sure?

Testing Business Questions:

- introduction to terminology for testing questions
- what is a t-test and when is it used?
- how can i obtain and interpret a p-value?
- interpreting output from the TTEST procedures
- what is analysis of variance (ANOVA).

Linear Regression

- exploring the relationship between two continuous variables
- measuring a linear relationship using correlation
- interpreting the output from the CORR procedure
- understanding the misuses of correlation.

See over for Training Path

THE POWER TO KNOW.

Using Simple Linear Regression

- is our target variable related to more than one variable?
- can we get better predictions by using more variables (Multiple Linear Regression)?
- how can we select the 'best' variables?

Logistic Regression

- examining categorised data with the FREQ procedure
- examining and testing for an association between two variables
- calculating and interpreting the chi-square test for association
- why do we need to do something different?
- what is logistic regression and how does it work?
- how can I interpret the results from the LOGISTIC procedure?
- what is an odds ratio and why is it useful?

Additional Topics (self study)

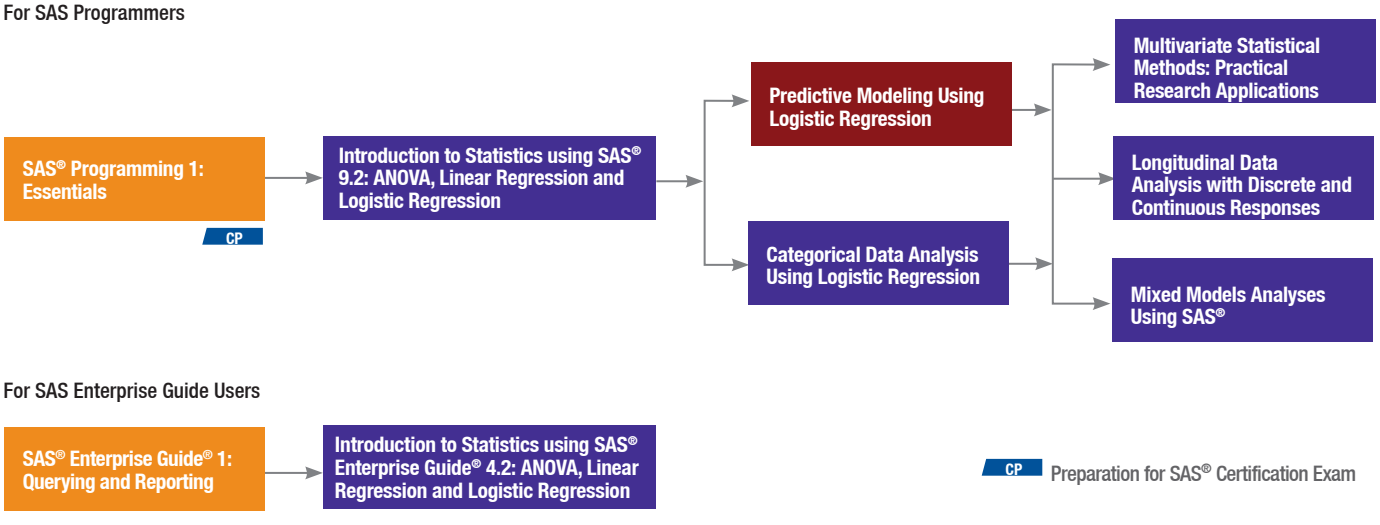
- ODS Statistical Graphics
- paired T-test
- Fishers exact p-values
- non-parametric ANOVA
- partial Leverage plots
- interaction Plots.

Software addressed:

This course addresses the following software products:

- SAS/STAT®
- SAS/GRAPH®.

Training Path for Statistical Analysts



THE POWER TO KNOW.

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