Statistics 2: ANOVA and Regression

Duration

3 days

Delivery

Classroom

Course code

ST292

Online registration

www.sas.com/uk/education/courses/st292.html

UK CONTACT INFORMATION

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THE POWER TO KNOW®

This course teaches you how to analyse continuous response data and discrete count data. Linear regression, Poisson regression, negative binomial regression, gamma regression, analysis of variance, linear regression with indicator variables, analysis of covariance, and mixed models ANOVA are presented in the course.

Learn how to:

Learn how to use the ODS Graphics facility and the new SG graphical procedures in SAS® 9.2 to:

- fit polynomial regression models using the REG procedure
- select models based on several statistics and automatic model selection methods using PROC REG
- evaluate model fit and model assumptions using the REG, GLM, GENMOD, and UNIVARIATE procedures
- fit Poisson, negative binomial, and gamma regression models using the GENMOD procedure
- perform analysis of variance using the GLM procedure
- write CONTRAST and ESTIMATE statements in PROC GLM
- fit regression models with dummy variables using PROC REG and ANCOVA models using PROC GLM
- fit models with random effects using the MIXED procedure
- create a variety of statistical graphs.

Who should attend:

Data analysts and researchers with some statistical training. Students should have completed the *SAS Programming 1: Essentials* and *Introduction to Statistics using SAS: ANOVA, Linear Regression and Logistic Regression* courses, or have equivalent experience.

Prerequisites:

Before attending this course, you should:

- have some experience creating and managing SAS data sets, which you can gain from the *SAS Programming 1: Essentials* course
- be able to fit simple and multiple linear regression models using the REG procedure
- be able to analyse a one-way analysis of variance using the GLM procedure
- understand the statistical concepts of normal distribution, sampling distributions, hypothesis testing, and estimation
- have completed a graduate-level course in regression and analysis of variance methods or the *Introduction to Statistics using SAS: ANOVA, Linear Regression and Logistic Regression* course.

Course contents:

Regression

- building and evaluating multiple polynomial regression models
- dealing with violations of model assumptions

Analysis of Variance

- performing n-way ANOVA
- interpreting significant interactions
- writing CONTRAST and ESTIMATE statements
- understanding issues associated with unbalanced data.

See over for Training Path

Regression Using Indicator Variables and Analysis of Covariance

- using and interpreting indicator variables in the REG procedure
- building and interpreting analysis of covariance models using the GLM procedure
- comparing regression using indicator variables with analysis of covariance.

Generalised Linear Models

- using the GENMOD procedure to fit Poisson, negative binomial, and gamma regression models.

Linear Mixed Models

- performing linear mixed model analysis.

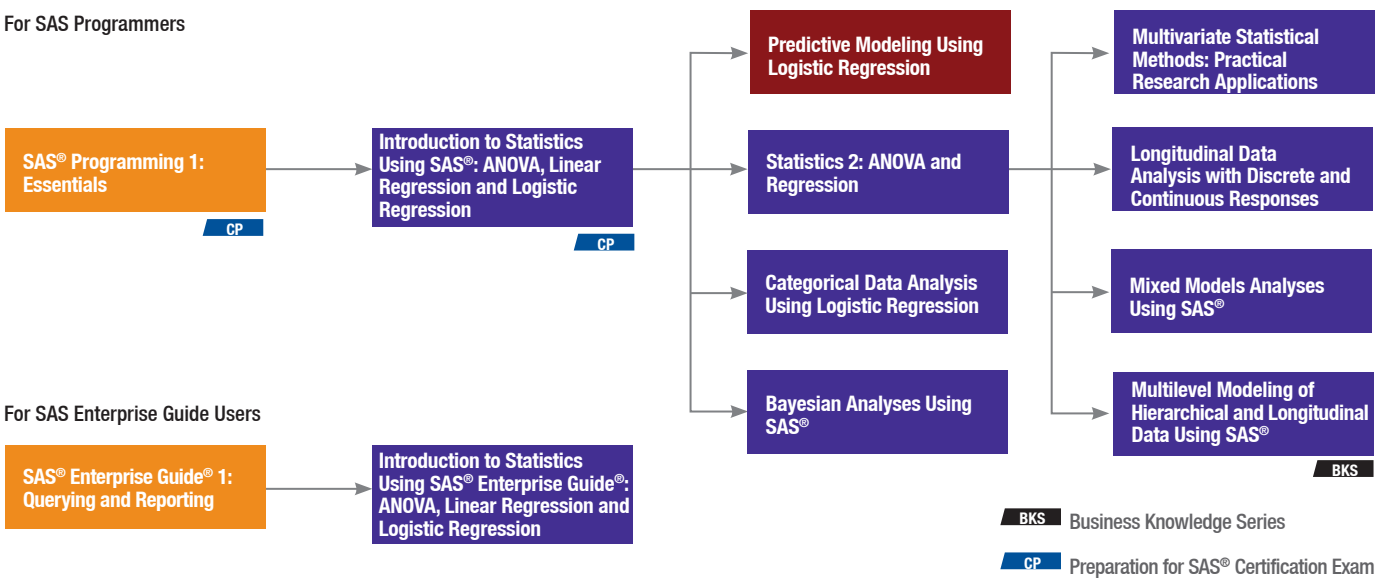
Software addressed:

This course addresses the following software products:

- SAS/GRAPH®
- SAS/ETS®
- SAS/STAT®.

You benefit from this course even if SAS/GRAPH software is not installed at your location.

Training Path for Statistical Analysts



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