Multilevel Modeling of Hierarchical and Longitudinal Data using SAS®

Duration
3 days

Delivery
Classroom

Course code
BHLM92

Online registration
www.sas.com/uk/education/courses/bhlm92.html

UK CONTACT INFORMATION

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THE POWER TO KNOW®

This course teaches students how to identify complex and dynamic patterns within multilevel data to inform a variety of decision-making needs. The course provides a conceptual understanding of multilevel linear models (MLM) and multilevel generalised linear models (MGLM) and their appropriate use in a variety of settings

Learn how to:

- use basic multilevel models
- use three-level and cross-classified models
- use generalised multilevel models for discrete dependent variables.

Who should attend:

Researchers in psychology, education, social science, medicine, and business, or others analysing data with multilevel nesting structure.

Prerequisites

Before attending this course, you should:

- preferably, be familiar with the basic structure and concepts of SAS® (for example, the DATA step and procedures)
- be familiar with concepts of linear models such as regression and ANOVA and with generalised linear models such as logistic regression
- be familiar with linear mixed models to enhance understanding, although this is not necessary to benefit from the course.

It is recommended that you complete *SAS Programming 1: Essentials* and *Statistics 2: ANOVA and Regression*, or have equivalent knowledge before taking this course.

Course contents:

Introduction to Multilevel Models

- nested data structures
- ignoring dependence
- methods for modeling dependent data structures
- the random-effects ANOVA model.

Basic Multilevel Models

- random-effects regression
- centering predictors in multilevel models
- model building
- a comment on notation (self-study)
- intercepts as outcomes.

Slopes as Outcomes and Model Evaluation

- slopes as outcomes
- model assumptions
- model assessment and diagnostics
- maximum likelihood estimation.

The Analysis of Repeated Measures

- the conceptualisation of a growth curve
- the multilevel growth model
- modeling nonlinear change
- time-invariant predictors of growth
- multiple groups models.

Three-Level and Cross-Classified Models

- three-level models
- three-level models with random slopes
- cross-classified models.

See over for Training Path

Multilevel Models for Discrete Dependent Variables

- discrete dependent variables
- generalised linear models
- multilevel generalised linear models
- additional considerations.

Generalised Multilevel Linear Models for Longitudinal Data

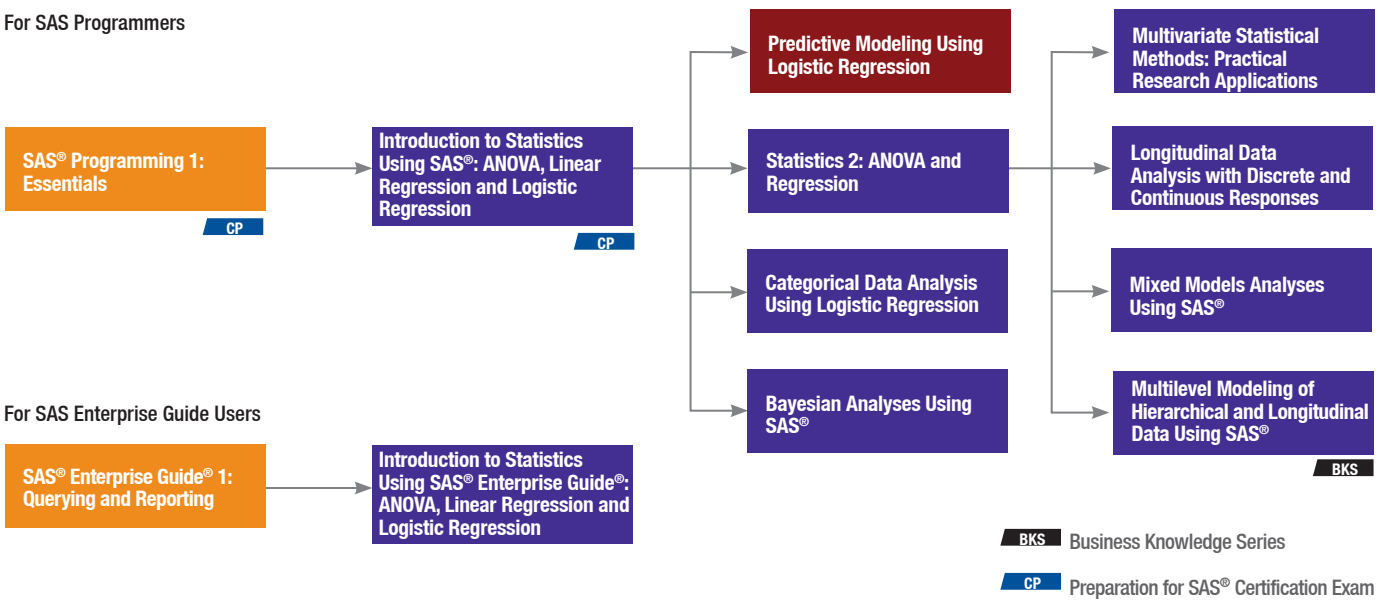
- complexities of longitudinal data structures
- the unconditional growth model for discrete dependent variables
- conditional growth models for discrete dependent variables.

Software addressed:

This course addresses:

- SAS/STAT® software.

Training Path for Statistical Analysts



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