Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PVG0005 Generalised Linear Models applied to the study of animals, 4.5 credits

Syllabus approved

2006-04-25

Subjects

Statistics, Computer Science and Systems Science/Mathematics

Education cycle

Third cycle

Grading scale

Pass / Failed
The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

English

Prior knowledge

Basic probability theory and inferential statistics corresponding to atleast 5 graduate credits. Some knowledge and/or experience from general linear models (GLM).

Objective, including learning outcomes

After having passed the course, the attendees will be able to:
- Understand the fundamental need for a generalised theory of statistical inference

in the
interpretation of data related to animal sciences.
• Utilize generalised principles for statistical inference in the study of animal sciences.
• Strategically plan and implement advanced statistical support into research projects of animal
sciences.

Content

Repetition of general linear models (GLM), exponential distributions and the transition to generalised linear models (GLIM), the diagnostics of a GLIM, continuously distributed responses, binary and binomial responses, counts and frequencies, ordinal responses, repeated
measurements, mixed GLIM.

Requirements for examination

Presentation of project based group exercises.
Exam requirements: Approved presentation of project based group exercises.

Additional information

The course generalises normal statistical inference into a class of probability distributions (including the normal distribution) that apply particularly to the study of animal sciences.
It considers hierarchical structures of repeated measurements and mixed models, and is implemented
in the SAS-procedure GENMOD (but also in STATISTICA and SPSS). The course is problem based
where the attendees are expected to develop skills regarding the utilisation of generalised linear models within the framework of their regular research. It will require some capacity for unsupervised
work.

Responsible department

Department of Animal Environment and Health