



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

**PFG0041 MODEL SELECTION AND MULTIMODEL INFERENCE,
1.5 credits**

Syllabus approved

2011-02-11

Subjects

Mathematic Statistics

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

Attendees should have a reasonable background in applied statistics. Beyond the basic concepts of measures of variation, covariation, natural logarithms, and subscripted variables, people need a decent understanding of least squares "regression" (e.g., i_3 values, residual variance, residual sum of squares, R-sq, residuals), goodness-of-fit issues, sampling applications, and

simple experimental designs. Ideally, attendees would have some experience with Fisher's likelihood (e.g., logistic regression).

Objective, including learning outcomes

The course is on the general subject of information-theoretic methods in the analysis of empirical data in science. There is information in the data and such information can be partially extracted from the data by a mathematical model. This leads to the very large and well known concept of "model based inference;" that is, the inference (answer or conclusion) must be based on a model. This thinking was prevalent over much of the last century and continues to the present time. In complex settings (e.g., ecology, economics, industry) it is not clear what model is best to use in data analysis (or even what is meant by "best"). In many cases, prediction is a goal and making predictions from all the models in the set has several substantial advantages. In many cases, a ranking of the relative importance of the predictor variables is of key interest. Both of these issues are addressed by a set of procedures called multimodel inference.

Content

See literature and objectives.

Requirements for examination

Assignments

Additional information

Held in Umeå between 10-11 Maj 2011.

Responsible department

Department of Wildlife, Fish, and Environmental Studies