



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# SLUkurs

## Syllabus

**PNG0049 Statistics in Practice, 3.0 credits**

## Syllabus approved

2013-05-27

## 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

Preferably knowledge of statistics given in MS0037 Statistics for Biologists I and MS0038 Statistics for Biologists II. Priority is given to PhD students, especially from FoSW.

## Objective, including learning outcomes

The aim of the course is to give PhD- students an overview of statistical methods used in ecology with a focus on research in soil and water, and an insight in the

problems and pleasures of statistics.

The course setup is similar as for the course given by the Research School Ecology (see [http://www2.ekol.slu.se/wiki/index.php/Statistics\\_in\\_practice](http://www2.ekol.slu.se/wiki/index.php/Statistics_in_practice)), but has a special focus on statistical methods chosen by PhD students from FoSW.

## **Content**

This course will focus on the practical usage of statistical methods in ecology, and should be seen as a complement to more theoretical and thorough statistical courses available at SLU and Uppsala University. PhD-students have been asked to suggest methods they would like to learn more about, and the themes covered in this course are largely based on their suggestions. The course will comprise six seminars where researchers present and discuss statistical methods used in their published papers. Each seminar will also include a practical exercise. Participating students are expected to read the paper(s) that will be discussed before the seminar, plus some more general literature about the statistical method. Students are also expected to bring their own data (problems) for the practical exercises.

## **Schedule**

Each seminar will be half a day, running approximately between 9:00 – 12:30. Students can attend individual seminars or the whole seminar series.

The six seminars are:

Autumn 2013: Ulf Grandin: The first look at your data – overview and quality check and how to proceed eventually (including difference of parametric and non-parametric methods)

Autumn 2013: Martyn Futter: ANOVA designs – what is appropriate? Data mining techniques such as regression trees (including before-after data)

Autumn 2013: Brendan McKie: ANOVA and more (split plot ANOVAs, Tukey's post-hoc and possible "treatment of residuals", ANCOVA, multiple regression)

Autumn 2013: Claudia von Brömmssen (Dept. of Economy, SLU): Time series analysis – what is this? When to do it and not.

Autumn 2013: Ulf Olsson (Dept. of Economy, SLU) Structural Equation Modelling – what is this? When to do it and not.

5th October: Bayesian modeling overview – Tord Snäll (Dept. of Ecology, SLU)

## **Requirements for examination**

Active participation in seminar and approved report from exercise.

## **Additional information**

**Responsible department**

Department of Aquatic Sciences and Assessment