



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# SLUkurs

## Syllabus

**PFS0047 Statistical methods for research with focus on application,  
7.5 credits**

## Syllabus approved

2009-09-16

## Subjects

Statistics, Computer Science and Systems Science

## 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

Swedish

## Prior knowledge

Accepted PhD students with a basic knowledge of statistical concepts. Focus is on the needs of the students following the research school Sustainable Management and Utilization of Forest.

## **Objective, including learning outcomes**

After the course the student will

- have knowledge in methods for planning experiments
- have knowledge in standard Analysis of Variance, to understand models, perform analyzes and interpret results.
- have knowledge in Regression theory with emphasis on deriving regression functions.
- have knowledge in some commonly used multivariate statistical methods.

## **Content**

The content of the course is the statistical applications most common in forest research. Understanding of the underlying problems and the corresponding statistical formulations (models) is important and some time is spent on that but otherwise focus is on the applications. The course is more an overview of methods than a study in depth of a singular method. The students will train to use computer programs for most of the problems and models treated and can contribute with own data.

The course is mainly arranged as traditional two-hour lectures (with video) and home exercises. Two full-day meetings (each of two day) is planned for discussion, exchange of experiences and so forth, especially for students outside Umeå. An outline of the course content is

- Week 1: Planning experiments
- Week 2 and 3: Analysis of Variance (ending with a meeting)
- Week 4 and 5: Regression analysis
- Week 6 and 7: Multivariate analysis and other methods (ending with a meeting)

## **Requirements for examination**

Four assignments on four different subjects.

## **Additional information**

The course is given by an Environmental Certified Department (ISO 14001)

## **Responsible department**

Department of Forest Resource Management