



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# SLUkurs

## Syllabus

**PNSo190 Multivariate methods for ecologists, 3.0 credits**

## Syllabus approved

2019-11-20

## 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

Basic course in statistics, 7.5 credits, or the equivalent.

## Objective, including learning outcomes

The course aims to illustrate a number of factors which should be considered in multivariate analysis of ecological data. The course will concentrate more on the selection of relevant methodology (e.g. application of multivariate methods), than

on the underlying mathematical aspects of the various statistical procedures. After completing the course, the student will be able to apply multivariate methods for analysing their own data, as well as to understand and assimilate more advanced literature.

### **Content**

Lectures focus on developing a fundamental understanding of how multivariate methods are applied in ecological research; specifically, selection of the most appropriate method(s) to use with different sampling designs and strategies. A number of ordination and classification procedures will be demonstrated, such as cluster analysis, canonical correspondence and redundancy analyses (CCA/RDA), principle components analysis (PCA), and partial least square-analysis (PLS). All theory will be exemplified and exercised during computer labs using a standard dataset.

### **Requirements for examination**

During computer labs there will be repeated individual oral tests of understanding and acquired knowledge.

### **Additional information**

Applications are handled by the responsible department. Applicants fulfilling the prerequisites will be accepted in the order applications are received after the course invitation is sent out.

### **Responsible department**

Department of Aquatic Sciences and Assessment