Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PNS0074 Multivariate methods for ecologists, 4.5 credits

Syllabus approved

2010-09-24

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. The course is given in two parts: The first part involves lectures and supervised computer exercises, and the second involves supervised individual work with the students own data. Participants may register for either only the first or both parts of the course.

Requirements for examination

For part 1, during computer labs there will be repeated individual oral tests of understanding and acquired knowledge. For part 2, each student needs to produce an approved written and oral presentation of their working process and conclusions during the individual project.

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