

PNS0074, Multivariate methods for ecologists, 4.5 Hp

Syllabus

Valid from: VT2011

Level within study regulation:

Third cycle

Subject:

- Mathematical Statistics

Grading scale:

Pass / Failed

Course language:

Swedish

Entry requirements:

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

Objectives:

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.

Modes of assessment:

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. - If a student has failed an examination, the examiner has the right to issue supplementary assignments. This applies if it is possible and there are grounds to do so.

- The examiner can provide an adapted assessment to students entitled to study support for students with disabilities following a decision by the university. Examiners may also issue an adapted examination or provide an alternative way for the students to take the exam.
- If this syllabus is withdrawn, SLU may introduce transitional provisions for examining students admitted based on this syllabus and who have not yet passed the course.
- For the assessment of an independent project (degree project), the examiner may also allow a student to add supplemental information after the deadline for submission. Read more in the Education Planning and Administration Handbook.

Organisation:

Department of Aquatic Science and Assessment

Supplementary information

Other information:

- The right to participate in teaching and/or supervision only applies for the course instance the student was admitted to and registered on.
- If there are special reasons, students are entitled to participate in components with compulsory attendance when the course is given again. Read more in the Education Planning and Administration Handbook.