

Multivariate Data analysis Course Announcement

Agro ecology - thematic focus area under Building Stronger Universities Project (BSU II) is announcing a short course on

MULTIVARIATE DATA ANALYSIS

November 14 to 18, 2016 at SUA main Campus

LEARNING OUTCOMES

The course will enable the participants to:

- . Structure multivariate data and identify relevant analytical approaches.
- . Use multivariate analytical methods to address environmental research questions.
- . Critically evaluate the results of multivariate analyses.

ABOUT THE COURSE

Biological datasets are often complex and difficult to analyse statistically. Multivariate analytical approaches are useful for gaining insight into data structures and the underlying ecological processes that controls them. Furthermore they enable the researcher to summarize biological data in an efficient way. The participants will be introduced to the most important multivariate techniques and get an opportunity to apply them on their own data sets. The computer exercises will mainly be based on the software package PC-ORD, which is widely used for environmental studies. We will emphasize critical interpretation of the results obtained and discuss how inferential statistics can be used to further test for significance of the data structures identified.

COURSE PLAN

The course will consist of nine sessions that each will focus on one or two multivariate methods. Individual session will be organized in three separate parts:

- A lecture giving a theoretical presentation of the method(s)
- An in-class demonstration of selected PC-ORD facilities
- A computer exercise based on test-datasets and/or the participant's own data

The duration of the course is five days (Monday to Friday, November 14-18, 2016) at SUA Main Campus

Day	Morning	Afternoon
Monday	Sampling design	Data management
Tuesday	Measures of association	Cluster analysis, Indicator Species Analysis (ISA)
Wednesday	Principal component analysis	Principal Coordinate Analysis (PCoA)
Thursday	Correspondence Analysis (CA or RA) and Detrended Correspondence Analysis (DCA)	Canonical Correspondence Analysis (CCA)
Friday	Non-metric Multidimensional Scaling (NMS)	Analysis of own data

PARTICIPANTS

SUA-postgraduate students. There is an upper limit of 20 participants. Priority will be given to PhD students who have already assembled a dataset that can be analysed during the course.

MATERIALS

Text book: Lecture notes and lab manuals will be produced specifically for this course

Software: PC-ORD (will be available to the participants during the course).

Come with your Laptop and your data.

FACILITATORS

Dr. Telemu Kassile -Biometry and Mathematics Department and Dr. Damas Philip-Agricultural Economics Department

HOW TO APPLY

Interested participants should submit their applications with a **justification for the need to participate in the course** to the BSU II Project – Agro ecology focus area through the following email addresses: sangedaaz@gmail.com and copy to telemuk@yahoo.com . Please describe briefly the kind of multidimensional data that you are using in your study (how many samples and which kind of variables). Deadline for application: **01 November, 2016**.