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Short course on

Statistics using



Monday 05.03.17 and Tuesday 06.03.2017
09:15 – 12:15 and 13:15 – 17:00 h

Location: Hörsaal Anatomie HA, Länggassstr. 122

Lecturers from VPH Institute, Vetsuisse Bern

- Easy to use statistical software package (spreadsheet based, menu-driven) with good report and graphics capabilities
- Course mainly intended for graduate students and researchers starting to analyze their own data
- Some statistical theory and many applications are presented
- Basic computer literacy is required, some spreadsheet and introductory statistics knowledge helpful
- Course fees
 - Individuals from VPHI and Swiss Federal Food Safety and Veterinary Office (BLV): free of charge
 - Students and researchers from the Vetsuisse Faculty (BE, ZH) and affiliated institutions: 50 SFr.
 - External participants: 100 SFr.

The fees cover costs for course administration and a 2-year license of one of the most recent versions of NCSS.

Participants should bring along a Laptop PC with XP/Vista/Win7 or Mac or Unix/Linux OS with a full Windows emulation, <http://www.ncss.com/support/windows-on-a-mac>.

The NCSS installation requires local administrator rights.

Please use <http://www.vphibern.ch/limesurvey/index.php/792158?lang=en> to register for the course.

For additional information on the course or registration process please contact:

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Proposed course topics (modifications of order are possible)

Module 1 - Data import, data management and descriptive statistics

- Learning objectives
- Different types of variables (numerical, ordinal, categorical), variable coding, missing values
 - Opening, creating and importing data (bases) into NCSS (**File open, import, save, export**)
 - Data management, recoding and transformations in NCSS (**Data sort, recode, transform, recalc**)
 - Descriptive statistics: frequencies, histogram, means and variances, various graphs & box plots (**Analysis descriptive statistics**)

Module 2 – Simple data analysis, cross tabulation, t-tests

- Learning objectives
- Basic knowledge of the statistical comparison (association) of frequencies and means between groups; identification of the „right“ statistical test; assumptions and hypothesis testing;
 - T tests (**Analysis** / parametric and non-parametric tests)
 - Frequency comparison (**Analysis / Descriptive Statistics / Cross Tabulation; Analysis / Mantel-Haenszel- test**)
 - Comparison of means/medians between groups (**Analysis / ANOVA / Analysis of Variance, Repeated-measures ANOVA**)

Module 3 – Correlation, simple linear and logistic regression

- Learning objectives
- Knowledge on the correlation between continuous variables and basic regression models
 - Identification of the correct statistical test, assumptions, hypotheses
 - Modules **Analysis Regression / Correlation / Correlation Matrix, Linear Regression, Logistic Regression**

Module 4 – Reviews and Exercises

- Learning objectives
- Use of the descriptive and analytic methods available within the NCSS package on selected (presented) or own data sets

- Prerequisites
- Basic PC knowledge (Windows OS, MS-Excel ...)

- Teaching tools
- Short presentations
 - PC exercises (small group work) and discussion

Recommended books (on which most exercises are based): Hüsler & Zimmermann "Statistische Prinzipien..." 4. Auflage 2006, and Dawson & Trapp "Basic & Clinical Biostatistics" 4th Ed. 2004. More details on the course schedule etc. will be provided for registered course participants in the week before the course.