XXXXXX	**Introduction to Statistics** [2.5 ECTS – OBL.]	**Joan C. Mora**

Course Description

The main aim of the course is to acquaint students with research methods in the processing and analysis of linguistic data, as well as with basic statistical methods and concepts. The first part of the course deals with issues regarding data collection and processing (data management, coding). The second part is an introduction to descriptive statistics (exploring data through descriptive statistics) that includes basic concepts and terminology used in linguistic research as well as descriptive data analysis. Students will be familiarised with basic concepts of inferential statistics needed for the interpretation of results reported in scientific journal articles.

Syllabus

1. Introduction to experimental research methods and designs
    - Identifying and defining groups and factors in research design.
    - Control groups and conditions.
    - Planning the statistical analysis of a study.
    - Data collection: populations and samples.
    - Types of data for analysis: variables and data coding and management.

2. From experiments to data analysis
    - Types of statistical analysis.
    - Overview of descriptive statistics
    - Assessing normality of distribution.
    - Data screening: normalizing and dealing with outliers (removing, trimming and winsorizing).
    - Transforming variables.
    - Using tables and graphs to report descriptive statistics.

3. Descriptive statistics
    - Measures of central tendency: Mean, median and mode.
    - Measures of variability: Range, standard deviation, dispersion.
    - Normality of distribution, skewness and kurtosis.
    - Exploring data through frequencies.
    - Transforming continuous data into categorical data.
    - Median split.
    - Cluster analysis.
    - Principal components analysis (PCA).

4. Reporting and interpreting statistics
    - Reporting descriptive statistics.
    - Interpreting descriptive statistics.
    - Interpreting inferential statistics.

Methodology

This is a practical course structured along three types of task:
(1) Introductory tasks that include: identifying variables in research design, basic exercises of data management in SPSS (20% of final mark).

(2) Applying statistical tools to report and present descriptive statistics (20% of final mark).

(3) Data analysis task. In this task students will be given a raw linguistic data set and its description and will be asked to explore it and present it descriptively in terms of its main factors and conditions (50% of final mark).

Assessment

Continuous assessment: Active participation in class (10%), homework (40%) and the data analysis task (50%).

Non-continuous assessment and "second sitting" o "reavaluació" (if a students fails): Final piece of work (50% of the mark) and final exam (50% of the mark).

Bibliography

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Mackey, A, and Gass, S.M. (2005) Second Language Research: Methodology and Design. New York: Routledge.

Pallant, J. (2010) *The SPSS Survival Guide* (5th ed). Maidenhead: Open University Press.

Urdan, T.C (2010). Statistics in Plain English (3rd Ed). New York: Routledge.