SYLLABUS DEL CORSO

Elementi di Psicometria con Laboratorio Software 1 - 1

1920-1-E2401P131-T1

Learning area

KNOWLEDGE ABOUT QUALITATIVE AND QUANTITATIVE RESEARCH METHODOLOGY

Learning objectives

Knowledge and understanding

- Descriptive statistics
- Inferential statistics
- Univariate and bivariate statistical inference

Applying knowledge and understanding

- Using SPSS (or another statistical software) for data analysis
- Ability to choose the most adequate data analysis technique for the context
- How to report results of statistical analyses in conformity to the prevailing standards in psychology.

Contents

This course aims at providing the basic knowledge on descriptive and inferential statistics. Furthermore, it

addresses some techniques of statistical analysis and introduces the use of the SPSS or of another statistical software

Detailed program

- Descriptive statistics: measurement scales, central tendency and variability indices, standardized measures;
- Graphical synthesis and graphical exploration of the data;
- Introduction to probability;
- Basic inferential statistics: sampling distribution, hypothesis testing, confidence intervals;
- Parametric techniques: t-test for the difference between means (single sample, independent samples, paired samples); linear correlation (Pearson's)
- Non-parametric techniques: Chi-squared test (equally-probable categories, independence, test of a model), correlation (Spearman)
- Effect size and its use
- Introduction to the concepts of power analysis

Prerequisites

As this is a compulsory first year course, the only prerequisites are basic knowledge of mathematics/algebra and of computer use.

Possible specific lacunae will be handled during the lessons.

Teaching methods

Lectures in Italian, mostly split into blocks corresponding to the chapters of the coursebook. The statistical software will be discussed within the blocks, through exercises in class. Self-evaluation exercises may be available for some blocks (on the elearning platform).

In parallel to the lectures, "software laboratories" will be available, during which students will use the statistical software(s) to enhance their learning.

Assessment methods

The exam is in written form and consists of multiple-choice questions, open questions, and exercises of statistical analysis. SPSS (or another statistical software) will be used with a data file provided at the beginning of the examination. The questions aim to ascertain the effective acquisition of the theoretical knowledge and of the ability to execute statistical analyses (with and without statistical software) and understand the results.

Turn 1 (matr. 0-4): There will be no mid-term assessments, but instead there will be a simulation of the exam.

Turn 2 (matr. 5-9): Students attending the lessons can take mid-term assessments (two written assessment).

Interested students can request also an oral integration, on all the topics of the course. This oral integration can increase or decrease the vote of the written exam of up to 2 points.

Textbooks and Reading Materials

For lessons (theory):

- Slides
- Aron, A., Coups, E. J., & Aron, E. J. (2018). *Fondamenti di statistica. Introduzione alla ricerca in psicologia.* Milano: Pearson. [capp. 1 a 8, 9 parziale, 11, 13, 14]

A text chosen from among:

- Vanin, L. (2014). *SPSS pratico. Configurazioni, output e interpretazioni a colpo d'occhio.* Milano: Cortina.
- Barbaranelli, C., D'Olimpo, F. (2007). *Analisi dei dati con SPSS. Vol. I: Le analisi di base.* Milano: LED.
- Un qualunque libro (anche in inglese) su SPSS (versioni dalla 16 in avanti) purché includa gli argomenti del corso.