UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistical Methods for Clinical and Healthcare Psychology

2627-1-F5111P001

Learning area

Models and techniques for treatment and rehabilitation

Learning objectives

Knowledge and understanding

· Statistics for correlational data

· Statistics for experimental data

· Simple and complex relationships among different types of variables

· Basics of measurement in psychology

· Psychological measures properties

Applying knowledge and understanding

· Ability to analyze data collected in different research designs

· Understanding and evaluating third-party statistics and their quality

· Estimating and understanding simple and complex relationships among variables.

· Employing and evaluating different types of psychological measures

· Mastering of Jamovi software

Making judgment
Students will gain the ability to independently integrate methodological and theoretical skills when using statistical tecniques for psychology and to apply them to critically judge previous studies and analyzing new data in different subfields of psychology, taking into account the specific critical aspects of each technique and various operational situations. This will be achieved through class discussions and laboratory sessions.

Communication skills
Students will acquire skills that allow to communicate effectively statistical analyses and results, in line with the most recent requirements of the American Psychological Associations, thus being able to effectively interact with professionals from different backgrounds.

Learning skills
The course will promote the ability to critically read recent literature in Psychology employing quantitative methods. The ability to learn new developments and innovations emerging from international scientific literature in Psychology will also be stimulated by providing papers as suggested readings, allowing students to update their skills to the rapid evolution of the field.

Contents

An overview of several statistical techniques and methodological concepts is provided, giving the student the ability to collect and analyze data in a wide range of research situations. Univariate and multivariate statistical techniques are presented, with emphasis on the interpretation of results. Fundamental concepts related with measurement in psychology are also discussed.

Detailed program

Class activities

· Statistical models and inferential statistics

· The general linear model

· Mediation and moderation

· Statistics for repeated-measures designs

· Generalized linear model

· Measurement theory

· Validity and reliability

· Factor analysis

Practice Labs

Practice with Jamovi statistical software and hands-on exercises with real data.

Prerequisites

Descriptives statistics (measures of central tendency and dispersion); Basics of inferential statistics; t-test, correlation, simple linear regression.

Teaching methods

Both theoretical lectures (42 hours) and practical lab sessions (18 hours). The lectures and lab sessions will be taught in presence.

In the theoretical lessons the foundations of the statistical techniques are presented and discussed, their applicability, with special focus on the interpretation of the results. Using several examples found in the psychological literature, students with different backgrounds should be able to understand what is needed to carry out and interpreting the statistical analyses discussed in the course. The discussion of data-analysis examples is an important part of the lectures.

Practice sections in the computer labs with data-analyses.

Although this course is held in Italian, for Erasmus students, the course material is available also in English, and students can take the exam in English if they wish to do so.

Assessment methods

There are no ongoing (in-itinere) assessments.

Written final test with multiple-choice questions (20 questions - 1 point each) and open-end questions (2 to 3, 13 points overall) based on data analyses. Scores above 30 correspond "30 and praise". Only those who answer to at least 10 multiple-choice questions will be allowed to attempt to answer open-end questions.

Multiple-choice questions will assess particularly the understanding of the theoretical models underlying psychometric and data analysis techniques.

Open-ended questionswill assess the ability to apply this knowledge for developing research projects and for analyzing data. The student will be assessed on their ability to understand a research design, select the statistical techniques useful to answer the researcher questions, execute them with the statistical software, interpret and report the results following international standard (APA)

The final evaluation takes into account the following grading scale:
• **18**: barely sufficient knowledge, minimal applicative and interpretive abilities;
• **19-22**: sufficient knowledge of the fundamental content, with some uncertainties in application;
• **23-26**: fairly good knowledge, good applicative ability with some imprecision;
• **27-30**: solid knowledge, good to excellent command of the content and critical ability;
• **30 cum laude**: fully adequate knowledge, full command, excellent command of language.

Textbooks and Reading Materials

Learning materials is available consists of the lectures slides and the textbook. Papers regarding specific topics can be also indicated. Lecture slides and papers will be made available in the University’s online elearning platform.

Textbook 1: Gallucci, M. Leone L Berlingeri, M (2017). Modelli statistiche per le scienze sociali. Milano: Pearson Education.

Sustainable Development Goals

QUALITY EDUCATION