UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

## Psychometrics With Software Lab 2 - T1

**2021-2-E2401P132-T1**

### Learning area

Statistics and methodology

### Learning objectives

*Knowledge and understanding*

- Statistics for correlation data
- Statistics for experimental data
- Simple and complex relationships among different types of variables
- Basics of measurement in psychology

*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 relationships among variables.

- Employing and evaluating different types of psychological measures
- Use of SPSS software

## 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 statistical techniques are presented, with emphasis on the interpretation of results. Fundamental concepts related with measurement in psychology are also discussed.

## Detailed program

- Statistical models and inferential statistics
- The general linear model
- Mediation and moderation
- Reliability analysis
- Factor analysis

#### Practice Labs

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

## Prerequisites

Descriptives statistics (measures of central tendency and dispersion); Basics of inferential statistics;

## Teaching methods

Theoretical and practical classes. 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 mathematical backgrounds should be able to understand what is needed to carry out and interpreting the statistical analyses discussed in the course.

Practice sections in the computer labs with analyses of real data and discussion.

Lessons will be held in presence or through online video lessons, according to the University's regulations regarding the COVID-19 emergency situation. In both cases, all lessons will be video recorded and made available to the students.

## Assessment methods

Written final test with multiple-choice questions and open-end questions based on data analyses. Optional oral exam. Multiple-choice questions will assess particularly the understanding of the theoretical models underlying psychometric measurement and data analysis techniques. Open-ended questions will assess the ability to apply this knowledge for developing research projects and for analyzing data. The possibility of an oral exam is offered to students who consider that the result of the exam does not reflect their real competence and it will assess both theoretical knowledge and practical abilities.

Students will also have the possibility to take simulation test, equivalent to the final test . The aim of the simulation is to acquaint students to the test environment and to give them feedback before the take the exam.

The specific procedures for the exams will be defined and updated according to the University's regulations regarding the COVID-19 emergency situation.

## Textbooks and Reading Materials

textbook: Gallucci, M. & Leone L , Berlingeri M. (2012). *Modelli statistiche per le scienze sociali.II Edizione* Milano: Pearson Education.

Additional learning materials is posted on the course page of the elearning platform