



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Multivariate Data Analysis

2122-1-F5104P001

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#### Learning area

Techniques and methodologies for psychosocial research

#### 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
- 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 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 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
- Implicit and explicit measures
- Validity and reliability
- 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; regression and correlation; t-test

## **Teaching methods**

Theoretical and practical classes. In the theoretical lessons the foundations of the statistical techniques are \_\_\_\_\_

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

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.

Lessons will be held in presence unless further COVID-19 related restrictions are imposed.

## **Assessment methods**

Written final test with multiple-choice questions and open-end questions based on data analyses. Optional oral \_\_\_\_

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During the Covid-19 emergency, exams will be conducted according to the University's regulations regarding the \_\_\_\_

## **Textbooks and Reading Materials**

textbook: Gallucci, M. Leone L Berlingeri, M (2017). Modelli statistiche per le scienze sociali. Milano: Pearson \_

In addition to the textbook, learning materials is available on the course page in the elearning platform

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