UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

## Laboratory of Quantitative Methods - A

**2122-1-F5106P008-F5106P009M-A**

### Learning area

Experiential learning

### Learning objectives

*Knowledge and understanding*

- Identifying the correct analysis to be performed among a Principal Component Analysis, a Regression, and Analysis of Variance to test an hypothesis
- Identifying variables to run analysis

*Applying knowledge and understanding*

- Running a Principal Component Analysis, a Regression, and Analysis of Variance in SPSS
- Interpreting Results

### Contents

We will use the SPSS statistical package to perform Principal Component Analysis for questionnaire data, Regression Analysis and simple Analyses of Variance for experimental data. During laboratories, students will learn how to perform these statistical techniques on different data sets and how to interpret results.

## Detailed program

- Brief Introduction to SPSS
- Principal Component Analysis
- Linear Regression (simple, multiple including mediation and moderation analyses)
- Analysis of Variance (between-subject, within-subject, Mixed models)

## Prerequisites

Students should have basic knowledge of SPSS to be able to perform basic operations (data entry, creation of variables,…). Furthermore, they should attend or having attended the Course of Quantitative Methodologies, because it provides theoretical knowledge regarding these techniques of analysis.

## Teaching methods

Presentation of a series of examples of analyses and students perform similar analyses.

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

## Assessment methods

In theory, as part of the laboratory, students will perform specific exercises regarding the the topics they studied (PCA, Regression, ANOVA) to test their abilities in examining the validity of a series of hypotheses by conducting the adequate analyses and interpreting results.

## Textbooks and Reading Materials

Barbaranelli, C., & D'Olimpio. (2007). Analisi dei dati con SPSS - I-Le analisi di base. LED Edizioni (Capitoli 1,2,3).

Gallucci, M., Leone, L., & Berlingeri, M. (2017). Modelli statistici per le scienze sociali. Pearson