UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Quantitative Methods for Developmental Psychology

2526-1-F5113P005

Learning area

Area of experiential learning

Learning objectives

Knowledge and Understanding
Fundamental knowledge of Analysis of Variance (ANOVA) and multiple linear regression, as well as introductory concepts of more advanced techniques. This knowledge will be contextualized within the field of developmental psychology and empirical research.
Applying Knowledge and Understanding
Operational skills in applying the statistical techniques learned, using JAMOVI software to conduct analyses on real and simulated data. Students will be able to independently select and apply the most appropriate models to the available data and accurately interpret the results.
Making Judgements
Students will be encouraged to critically evaluate methodological choices, independently identifying the most suitable techniques for specific theoretical questions and research contexts, with attention to the conceptual implications of analytical decisions.
Communication Skills
The ability to clearly and effectively explain the rationale behind analytical choices and to present the obtained results, articulating the appropriate statistical inferences using technically accurate yet clear and accessible language.
Learning Skills
Through practical use of JAMOVI software and both individual and collaborative work, students will develop skills that can be autonomously applied in future academic and professional contexts, fostering continuous and selfdirected learning.

Contents

Using the statistical software JAMOVI, we will focus in particular on various ANOVA models and multiple linear regression models. During the laboratory meetings, students will learn to perform statistical analyses on different data and interpret the results, contextualized within the field of developmental psychology and empirical research.

Detailed program

Brief introduction to JAMOVI
Analysis of Variance models (between-subjects, within-subjects, mixed design)
Regression analysis (simple and multiple – mediation and moderation)
Brief overview of analysis models for frequency and ordinal variables

Prerequisites

Students should have a basic knowledge of software for creating and managing empirical data (e.g., Excel, SPSS, or similar), in order to be able to perform simple operations (data entry, variable creation,…). The main theoretical notions regarding the different statistical techniques used will be provided in the laboratory meetings.

Teaching methods

Presentation of the main notions of the statistical techniques addressed, examples of analysis, and individual performance by the students of similar exercises. Around 50% of the hours (14 hours) will be of traditional teaching and the remaining 50% (14 hours) will be of interactive teaching (practical sessions/exercises). The laboratory will be held in Italian and entirely in presence.

Assessment methods

During the meetings, students will carry out specific exercises on the two main topics studied (Analysis of Variance and Multiple Linear Regression) to improve their skills in examining the validity of some hypotheses by performing appropriate analyses and adequately interpreting results. There will be a final assessment session consisting of a mix of multiple choice questions and open answers based on data analyses. Students are expected to participate to at least 70% of the total hours (28 hours) of the laboratory.

Textbooks and Reading Materials

Gallucci, M., Leone, L., & Berlingeri, M. (2017). Modelli statistici per le scienze sociali. Pearson
Navarro DJ & Foxcroft DR (2025). Learning statistics with Jamovi: a tutorial for beginnes in statistical analyses.

Sustainable Development Goals

QUALITY EDUCATION