Course of Study in

"Psychological Sciences of Human Resources, Organisations and Enterprises' - [L-24].

a.y. 2021/2022

SUBJECT
PSYCHOMETRY

SDS: MPSI/03 - ECT:9
YEAR; II SEMESTER

Lecturer: Prof. **Caterina Primi**
Disciplinary tutor: Dr. **Francesco Sanson**

Qualification and scientific background of the lecturer	Associate Professor of Psychometry NEUROFARBA (University of Florence). Director of the Psychometrics Laboratory of the Neurofarba Department (University of Florence). President of the Master's degree course "Ciclo di vita e dei contesti" School of Psychology (University of Florence). She teaches "Psychometrics" and "Psychological Tests" at the School of Psychology. She is also Director of the postgraduate course "Item Response Theory Models**".** Her research interests include psychological assessment, test construction and adaptation through the application of Classical Test Theory and Item Response Theory models. She also studies the cognitive processes involved in probabilistic reasoning. As a Statistics teacher, she is interested in the study of factors related to learning statistics and seeks to transfer research findings into teaching practice in order to promote the learning of probabilistic and statistical reasoning. She has also worked on the study of reasoning errors responsible for the formation of stereotypes and prejudices, in particular related to gender and mathematics. In recent years, her research activity has also focused on the study of anxiety in mathematics, investigating the factors responsible for this through the construction of special instruments. Finally, she has launched a project

	on the study of the factors involved in pathological gaming behaviour in adolescents by developing a specific training activity.
Description of contents and subdivision of the programme into teaching modules	Psychometrics is the discipline that deals with the detection and measurement of psychological phenomena. It therefore deals with issues related to measurement in psychology and the basic concepts for dealing with problems of quantification and processing of psychological data. It plays an important role in the psychologist's training, since in the performance of the profession it is necessary to know how to use instruments such as tests and questionnaires, to conduct analyses on the data collected and to know how to communicate them. Finally, it helps to understand the results presented in the scientific journals of the sector, which are a source for the continuous updating required within the profession. In the **first module** of the course (Measurement in Psychology), the process of measuring psychological variables will be introduced by describing its characteristics and measurement scales and their properties will be presented. In the **second module** (Describing Data), descriptive analysis techniques will be introduced as a useful tool for understanding the performance of collected data. In particular, frequency distributions, indices of central tendency, variability and position will be presented. The explanations are accompanied by examples, with data from different application areas, in order to better understand the calculation procedure. Finally, graphical representations and their properties are described, so that the type of representation can be chosen appropriately according to the variable being measured. In the **third module** (Association between variables) the relationships between two variables will be addressed. In the case of qualitative variables, the contingency table is introduced and the way to calculate both simple and conditional frequencies is presented. In the case of quantitative variables, the correlation coefficient is presented as a measure of association. By means of examples with data from the field of psychology, the calculation procedures will be shown.
Abstract	The measurement in psychology. Introduction to descriptive statistics applied to psychological data. Introduction to the use of the JASP

	software. Methods for describing how to report the results of a psychological research.
Learning objectives	The course in Psychometrics aims to develop theoretical/operational skills related to the methods and techniques of scientific investigation in psychology. In particular, the course aims to illustrate to the student the statistical and IT procedures necessary for planning the data collection of a psychological research and for the descriptive presentation of the results obtained.
Expected learning outcomes	**A. Knowledge and understanding** To develop knowledge, from an elementary level, useful for statistical analysis and interpretation of data in psychological research and intervention contexts. **B. Applied knowledge and understanding** The student will be able to deal with the analysis of psychological data through the use of the statistical software JASP. **C. Autonomy of judgement** The course will stimulate the student to acquire autonomy in reading graphs and tables. **D. Communication skills** The course will provide students with the necessary knowledge to produce a psychological research report, both written and oral. **E. Learning ability** The topics covered in the Psychometrics course are indispensable for successfully following the subsequent courses in the degree course and for preparing for the final examination.
Skills to be acquired	**EXPECTED RESULTS** **A.** Being able to use the statistical software JASP independently. **B.** Ability to collect and interpret data useful for making independent judgments in the field of study.

	C. Ability to communicate effectively and critically discuss the results of statistical analyses in the light of the research question and the relevant literature. **D.** To acquire the ability to learn from one's environment by analysing scientific articles, reports and results of experiments.
Didactics organisation	**DIDACTICS PROVISION** ➢ 6 hours of recorded video lessons available on the platform. ➢ 3 synchronous meetings on the platform. ➢ Podcasts of all the above-mentioned video lessons. **INTERACTIVE DIDACTICS** ➢ 1 course orientation forum on the use of the software: how to install Jasp and features. ➢ 3 thematic in-depth forums: Operations with Jasp (Module I); Descriptive analysis with Jasp (Module II) Associations between variables with Jasp (Module III) ➢ 3 structured *e-activities* (as described in the section **"*in itinere* assessment methods"**). **SELF-LEARNING** Teaching materials are provided for each module: lecturer's slides, open access readings, data files, reference bibliography.
Recommended examination texts	➢ Primi C. & Chiesi F. (2005). Introduzione alla psicometria. Laterza, Bari ➢ Chiorri, C. (2010). *Fondamenti di psicometria*. McGraw-Hill.
In itinere assessment methods	Access to the final examination is subject to the following **3 *e-activities:*** ➢ **Etivity 1 -** Data analysis with Jasp software: describing the sample qualitative variables. ➢ **Etivity 2 -** Data analysis with Jasp software: describing the sample quantitative variables. ➢ **Etivity 3 -** Data analysis with Jasp software: relationships between variables.

Procedure for the final examination	The assessment of learning will take the form of an oral interview on the course contents and a final report summarising the activities carried out during the course with the software. The grade (min 18, max 30 with possible honours) is determined by the level of performance for each of the following dimensions of the oral interview: mastery of contents, appropriateness of definitions and theoretical references, clarity of argument, command of specialist language.
Language of instruction	Italian