



# UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Culture e società
ACADEMIC YEAR	2022/2023
BACHELOR'S DEGREE (BSC)	GLOBAL STUDIES. HISTORY, POLICIES, CULTURES
SUBJECT	QUANTITATIVE METHODS FOR HISTORIC AND SOCIAL RESEARCH
TYPE OF EDUCATIONAL ACTIVITY	C
AMBIT	10723-Attività formative affini o integrative
CODE	21582
SCIENTIFIC SECTOR(S)	SECS-S/05
HEAD PROFESSOR(S)	OLIVERI ANTONINO      Professore Associato      Univ. di PALERMO MARIO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	120
COURSE ACTIVITY (Hrs)	30
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	<b>OLIVERI ANTONINO MARIO</b> Tuesday    15:30    17:30    Piattaforma Microsoft Teams o incontri in presenza, da concordare via email e se le condizioni sanitarie lo renderanno possibile.

<b>PREREQUISITES</b>	Basic knowledge of mathematics: the four operations, proportions. Expressions. Least common multiple and greatest common divisor. First-degree equations with one unknown.
<b>LEARNING OUTCOMES</b>	<p><b>KNOWLEDGE AND UNDERSTANDING:</b> students are expected to get the ability to understand written texts and professional practices, including statistical techniques for the study of human behaviors.</p> <p><b>APPLYING KNOWLEDGE AND UNDERSTANDING:</b> Students are expected to be able to use the basic statistical techniques within all the activities related to their professional duties. Direct reference is made to the analysis of environmental, technological, organizational and social contexts.</p> <p><b>MAKING JUDGEMENTS:</b> the nature and the contents of the course are the most appropriate to this goal: the step of the construction of data determines a variety of implications on data collection and processing. On the other hand, all these steps are constraints over the interpretation of research results. The research design steps are discussed in the course to help students acquire the skills that will enable them to critically select the most appropriate data analysis instruments, with reference to the nature of the phenomenon under scrutiny.</p> <p><b>COMMUNICATION:</b> L-42 graduates are supposed to be able to interpret and communicate the results of their work. In order to meet these fundamental expectations, they will get the essential elements of statistical language, along with the ability of producing short research reports.</p> <p><b>LIFELONG LEARNING SKILLS:</b> critical discussions about the use of statistics constitute a relevant area of the course. Within the humanities field, statistics is usually considered a major challenge and obstacle. Overcoming difficulties by the correct use of the instrumental logic is a necessary condition for passing the exam (short term goal), but also the premise for strengthening self-confidence. In turn, the last is the stimulus for further autonomous or academic learning.</p>
<b>ASSESSMENT METHODS</b>	<p>There are no different assessment methods between attending and non-attending students. A mid-term test will be carried out during the course. Except the student formally asks the opposite, the results of this test will contribute to the final mark given to him/her, through the calculation of the number-of-teaching-hours-before-the-test weighted average. The mid-term assessment consists of a written test.</p> <p>The final assessment consists of a written test with oral exam at the teacher's or the student's discretion.</p> <p>The written test integrates the presence of structured questions (true/false, completions, correspondences, multiple choices) and semi-structured or unstructured questions (open questions, exercises to be performed. In this last case, the procedure followed is more important than the results obtained).</p> <p>Structured questions tend to assess skills and knowledge related to the contents of the course, in addition to the ability to learn and apply knowledge and understanding. Structured questions consist of closed stimuli, each one having two or more closed answers. Skills and knowledge can be showed by students choosing the exact answer among those offered to every question. A score is assigned to each question before the instrument is administered, depending on correct, wrong or omitted answers.</p> <p>Semi-structured and unstructured questions tend to ensure the achievement of the autonomy of judgment, the ability of choosing among different statistical tools for the solution of exercises, and communication skills. Well-defined, distinct and uniquely open to interpretation stimuli are built so as to warrant comparability, using constraints that define a track for the reply (concepts to be addressed, level of generalization, logical and formal correctness of the proposed solutions).</p> <p>Open answers are supposed to meet constraints in order to make them comparable with the predetermined correction criteria. Also in this case the score assigned to every question is defined in advance, with reference to the fact that the responses are entirely correct, only partially correct, incorrect or missing.</p> <p>The written test results will be in general sufficient to give marks to students' performances (in thirtieths with possible honours). Any doubts should persist, however, the teacher will request an additional oral interview. Also students could use the interview, in case they should consider the mark obtained by the written test inconsistent with their perceived level of preparation. The interview is aimed to ascertain skills and knowledge related to the contents of the course and to its outcomes (Dublin descriptors). Both open and semi-structured questions will be organized so as to allow students to independently answer; questions will reflect all the theoretical and methodological elements of social statistics, although the starting point of all interviews will consist in wrong answers given by students to the written test. If not specifically requested by the teacher, students are free to access or not access the oral interview on their own accord. This way, they participate in the assessment process.</p> <p>Interviews will be the only exam type if this will be held at distance due to persistent COVID-19 health emergency.</p>
<b>EDUCATIONAL OBJECTIVES</b>	

	In their daily work, L-42 graduates meet statistics in several key moments: for example when analyzing citizens' needs and opinions as well as the social-economic background, also compared to previous historical periods. The course has been designed to provide students with basic statistical techniques to help them understand and process data in the historical and social field. The course pays special attention to quantitative scientific inquiry.
<b>TEACHING METHODS</b>	Lectures and classroom exercises (even at distance, in case of persistent COVID-19 health emergency). Given the theoretical and practical nature of the subject taught, exercises will be tightly integrated into the program and carried out at each topic addressed, be this indicated in the detailed arguments list which is presented below or not. A self-assessment test will be administered at the very beginning of the course, aimed at ascertaining the basic math skills, and debunking preconceptions about the excessive use of math in statistics. At the end of the lessons, a final self-assessment test will be administered, consisting in a simulation of the real exam tests.
<b>SUGGESTED BIBLIOGRAPHY</b>	Rispetto al programma di studio, non si opererà distinzione tra la condizione di studente frequentante e studente non frequentante. (There is no difference between attending or non-attending students relating to the study program). Gli studenti Erasmus potranno contattare il docente per eventuali chiarimenti (Erasmus students are invited to contact professor Oliveri if additional guidance is required). Borra S., Di Ciaccio A., Statistica, metodologie per le scienze economiche e sociali, McGraw-Hill, 2014 (terza edizione). Dettaglio delle parti da studiare: CAPITOLO 1. CAPITOLO 2. CAPITOLO 3.: 3.1-3.2, 3.5-3.7. CAPITOLO 4: 4.1-4.3, 4.5, 4.6, 4.8 (solo indice di eterogeneità di Gini), 4.9 (solo la definizione di asimmetria). CAPITOLO 5. CAPITOLO 6: 6.1-6.5, 6.6 (solo Chi quadrato, Contingenza quadratica media e V di Cramer), 6.7 (solo indice rho di Spearman), 6.9. CAPITOLO 16: 16.1-16.4. Il docente integrerà il materiale con dispense, anche in lingua inglese.

## SYLLABUS

Hrs	Frontal teaching
2	Units, populations, variables. The construction of variables. Data matrices. Statistical data sources.
1	Quantifying in social sciences: the concept of measurement; levels of measurement.
2	Univariate statistical distributions: frequency distributions.
2	Charts: pictograms, pie charts, bar charts, dot plots, histograms. Radar charts, cartograms, line charts.
3	Measures of central tendency: the mode, the median and quartiles, the arithmetic mean. The properties of the arithmetic mean. The concept of asymmetry. The boxplot.
2	Variability, dispersion. Measures of variability: range, interquartile range, standard deviation, variance. Relative measures: the coefficient of variation.
2	Absolute and relative heterogeneity: Gini's heterogeneity index. Statistical ratios.
2	Time series, index numbers.
2	Introducing relations between two variables (existence, intensity, direction and shape). The scatterplot. Bivariate statistical distributions: crosstabs, marginal and conditional distributions; calculation and meaning of row, column and grand total percentages.
2	Relations between categorical variables. Measures of association: Pearson's X <sup>2</sup> statistic; Cramer's V index. The rank correlation: Spearman's rho.
2	Relations between quantitative variables: covariance, correlation, regression.
Hrs	Practice
1	Basic mathematics. Self-assessment test.
1	Univariate and bivariate statistical distributions: frequency distributions.
1	Charts: pictograms, pie charts, bar charts, dot plots, histograms. Radar charts, cartograms, line charts.
1	Measures of central tendency: the mode, the median and quartiles, the arithmetic mean. The properties of the arithmetic mean. The concept of asymmetry. The boxplot.
1	Variability, dispersion and measures of dispersion. Absolute and relative heterogeneity: Gini's heterogeneity index. Statistical ratios.
2	Relations between variables.
1	Self-assessment at the end of the course.