Syllabus

Course Description

Course Title	Statistics and communication
Course Code	17330
Course Title Additional	
Scientific-Disciplinary Sector	STAT-03/B
Language	Italian
Degree Course	Bachelor in Communication Sciences and Culture
Other Degree Courses (Loaned)	
Lecturers	Prof. Giulia Cavrini, GCavrini@unibz.it https://www.unibz.it/en/faculties/education/academic-staff/person/13718
Teaching Assistant	
Semester	First semester
Course Year/s	3
CP	6
Teaching Hours	30
Lab Hours	15
Individual Study Hours	105
Planned Office Hours	18
Contents Summary	The course, which also includes a lab component, aims to provide the foundational knowledge needed to support the acquisition of both the basic conceptual framework for designing opinion surveys and the inferential methodological tools to minimize sampling errors and to understand and analyze social phenomena through quantitative methods. The program includes an introduction to probabilistic and inferential logic, as well as the basic methodologies for designing a survey in the social research field. The lab module aims to provide a practical introduction to the analysis of social data using SPSS or similar software.

Course Topics	The course, structured into three parts, will cover the following topics: Part One: DESIGNING A STATISTICAL SURVEY - Nature and origin of sample surveys. - The main stages of a sample survey. - Key measurement tools in social research: interviews and questionnaires. - Questionnaire design and administration techniques - Sampling methods. Part Two: DATA ANALYSIS - Probability calculation: introductory concepts. - Binomial and Normal distributions. - Statistical inference: confidence intervals. - Statistical inference: hypothesis testing. Part Three: COMPUTER LAB - A total of 15 hours of lab activities are scheduled, during which students will learn how to analyse data and indicators from official data sources, using the statistical software SPSS.
Keywords	Statistical survey; questionnaire structure; probability; confidence interval; hypothesis testing.
Recommended Prerequisites	Elements of descriptive statistics.
Propaedeutic Courses	
Teaching Format	The course consists of 30 hours of in-person lectures during which the instructor will present the various topics. Additionally, 15 hours of lab work are scheduled. The lecture topics will be presented using PowerPoint, and the presentations will be made available to students on TEAMS. A mixed teaching approach is adopted, combining theoretical lectures with practical exercises and interactive activities, with a greater emphasis on active student involvement during the laboratory sessions.
Mandatory Attendance	In accordance with the regulation
Specific Educational Objectives and Learning	The course aims to provide students with a solid mastery of the main methodological and inferential contents of statistics necessary

Outcomes	for the quantitative study of social phenomena. In particular, the teaching intends to develop analytical skills useful for understanding, designing, and conducting statistical surveys, as well as correctly applying statistical analysis tools and techniques in the reading and interpretation of socio-economic data. Students will be able to identify, select, and appropriately use the most suitable statistical tools for describing individual phenomena or analyzing relationships among multiple variables. Moreover, they will develop the ability to critically evaluate the results of the analyses conducted, also considering the quality and reliability of the sources used. Knowledge and understanding: By the end of the course, students will have acquired familiarity with the fundamental concepts of inferential statistics. They will be able to understand the logic underlying the generalization of results from a sample to a population, recognizing the conditions for valid inference and the possible presence of errors. Specifically, they will be able to: - Understand the principles of probability and their applications in inferential statistics; - Understand the meaning and usefulness of confidence intervals and hypothesis testing for comparisons between groups and variables. Ability to apply knowledge and understanding: Students will be able to apply the methodologies learned to real socio-economic data, drawn from official sources or field surveys. In particular, they will be able to: - Design a simple statistical survey, with particular attention to defining objectives, variables, and data collection techniques; - Use software tools for data management, processing, and representation; - Apply inferential statistical techniques to test hypotheses and draw conclusions based on empirical evidence. Autonomy of judgment: Students will develop solid autonomy of judgment in interpreting data and choosing the most appropriate statistical techniques depending on the type of phenomenon analyzed and the research objectives. They will be able to critically assess the reliability of the results obtained, recognize

	methodological limitations of the analyses performed, and formulate well-founded considerations based on empirical evidence. Particular emphasis will be placed on the ability to discern between alternative approaches and to select the most appropriate solution for the given context. Communication skills: Students will acquire appropriate technical language and will be able to effectively communicate the results of statistical analyses both in written and oral form. They will be able to present tables, graphs, and numerical summaries clearly and coherently, adapting the communicative style to the context. Learning ability: The course will provide students with the necessary foundation to autonomously continue their learning path in statistics. They will be capable of exploring more complex topics, consulting advanced texts, and using digital tools for data analysis.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	The course exam consists of two parts: - Theoretical: Assessed through a written test with questions and exercises aimed at evaluating the student's knowledge and understanding of the course topics, as well as their ability to apply these skills to practical cases. In addition, a lab test using SPSS software is also required. - Practical: Assessed through a short paper in which the student must design a questionnaire and provide a brief description of the underlying hypothetical statistical survey.
Evaluation Criteria	The final grade will be the weighted average of the written test (5/6) and the lab test (1/6). Both parts must be passed to pass the final exam. Additionally, two midterm tests will be administered during the course (not mandatory). Successfully passing both midterms (one of which will include the lab component) will count as the final exam grade, calculated as the weighted average of the two tests, following the same criteria outlined above. - Evaluation criteria for the written test include: accuracy of the answers, appropriateness of personal comments in the relevant

	sections, and knowledge of the methods needed to solve the proposed exercises. - Evaluation criteria for the lab test include: knowledge of the software and techniques required to solve the assigned task, and the adequacy of the interpretation and commentary of the results obtained.
Required Readings	M.K. Pelosi, T.M. Sandifer, P. Cerchiello, P. Giudici *Introduzione alla statistica*, McGraw Hill, 2009 seconda edizione (chapters 5, 7, 8). Lecture notes prepared by the teacher will also be provided.
Supplementary Readings	D. F. Iezzi *Statistica per le scienze sociali*, Carrocci 2009 (capp. 1-6 e 11).
Further Information	
Sustainable Development Goals (SDGs)	Quality education