Syllabus

Course Description

Course Title	Quantitative Research Methods
Course Code	64221
Course Title Additional	
Scientific-Disciplinary Sector	STAT-03/B
Language	Italian
Degree Course	Bachelor for Social Education
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	1
CP	7
Teaching Hours	30
Lab Hours	20
Individual Study Hours	125
Planned Office Hours	21
Contents Summary	The course, which also includes a lab module, aims to provide the foundations of statistical and demographic reasoning, offering the tools to understand and analyze social phenomena using quantitative methods. The program includes an introduction to the logic of statistics, the classification of variables, techniques for summarizing and comparing data, the analysis of relationships between variables, and the use of social and demographic indices and indicators. The course will also explore technical aspects related to the study of population, with reference to its structure, the events that affect it, and its dynamics.

	The lab module is designed to provide a practical introduction to the analysis of social and demographic data using Excel.
Course Topics	During the course, the following topics will be covered: • Introduction to statistical methodology and descriptive statistics. • Statistical survey and creation of a questionnaire. • Definition of variable, statistical unit, population, and sample. • Statistical description of a group: from data collection to the data matrix. • Frequency distribution of a variable and its graphical representation. • Measures of central tendency and position. • Measures of variability. • Analysis of the association between two variables: the contingency table.
Keywords	Definition of variable; Simple and joint frequency distributions; Means; Variability; Definition of Association.
Recommended Prerequisites	Basic mathematics knowledge acquired during high school.
Propaedeutic Courses	
Teaching Format	The course consists of in-person 30 hours of lectures and 20 hours of lab sessions, during which the professor will present the various topics. The lecture content will be delivered using PowerPoint presentations, which will be made available to students on TEAMS. All sessions follow a mixed approach: traditional lecture-based teaching alternates with interactive learning moments, with proportions varying depending on the topic and the type of activity carried out. Typically, the interactive component will be more prominent during in-class exercises and lab sessions.
Mandatory Attendance	In accordance with the regulation
Specific Educational Objectives and Learning Outcomes	The aim of the course is to ensure that students acquire a solid understanding of both the methodological and applied fundamentals of statistics, relevant to the statistical study of social phenomena. Students will develop the ability to identify and apply the appropriate statistical tools for describing individual phenomena or the relationships between multiple phenomena. Knowledge and Understanding Students will gain knowledge of and understand the fundamental concepts of descriptive statistics in order to produce data

	summaries that highlight the key features of the data. Applying Knowledge and Understanding Students will learn to apply the methodologies introduced during the course to socio-demographic data. Independent Judgment Students will develop strong independent judgment skills and learn to identify the most methodologically appropriate techniques to answer specific questions, based on empirical evidence provided by the data. Communication Skills Students will learn to use technical statistical terminology appropriately and effectively, in order to clearly communicate the conclusions drawn from their data analyses. Learning Skills A solid understanding of fundamental statistical concepts will enable students to independently continue their learning in this discipline.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	The course examination consists of two parts: • A theoretical part, which will be assessed through a written test containing questions and exercises aimed at verifying both the knowledge and understanding of the course topics, as well as the ability to apply this knowledge to practical cases. • A practical part, assessed through a lab test in which the student will be required to analyse a dataset, answer the given questions, and describe the results obtained.
Evaluation Criteria	The final grade will be the weighted average of the written exam (5/7) and the lab assessment (2/7). Both parts must be passed in order to pass the exam. Additionally, two in-course (optional) assessments will be held during the semester. Passing both of these (one of which will include the lab part) will count as the final grade, which will be calculated as the weighted average of the two assessments,

	according to the criteria outlined above. If one of the two partial assessments is not passed, it may be retaken during the final exam. In any case, students may take the final exam if the grades from the in-course assessments are not considered satisfactory. • The evaluation criteria for the written exam are: accuracy of the answers provided, appropriateness of comments in sections requiring personal interpretation, and knowledge of the methods needed to solve the proposed exercises. • The evaluation criteria for the lab assessment are: knowledge of the software and techniques required to solve the proposed task, and the adequacy of the interpretation 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 0 to 4). A. Rosina e A. De Rose. *Demografia*. Egea. Milano. 2017 P. Poli *EXCEL 2019. Formule e analisi dei dati*. Hoepli Informatica. Lecture notes prepared by the teacher will also be provided.
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Quality education

Course Module

Course Constituent Title	Quantitative Methods in Educational and Social Research
Course Code	64221A
Scientific-Disciplinary Sector	STAT-03/B
Language	Italian
Lecturers	Prof. Giulia Cavrini, GCavrini@unibz.it https://www.unibz.it/en/faculties/education/academic-staff/person/13718

Teaching Assistant	
Semester	First semester
CP	5
Responsible Lecturer	
Teaching Hours	30
Lab Hours	0
Individual Study Hours	95
Planned Office Hours	15
Contents Summary	The course aims to provide the foundations of statistical and demographic reasoning, offering the tools to understand and analyze social phenomena using quantitative methods. The program includes an introduction to the logic of statistics, the classification of variables, techniques for summarizing and comparing data, analysis of relationships between variables, and the use of social and demographic indices and indicators. The course will also explore technical aspects related to the study of the population, with reference to its structure, the events that modify it, and its dynamics.
Course Topics	During the course, the following topics will be covered: • Introduction to statistical methodology and descriptive statistics. • Statistical survey and questionnaire design. • Definition of variable, statistical unit, population, and sample. • Statistical description of a group: from data collection to the data matrix. • Frequency distribution of a variable and its graphical representation. • Measures of central trend and position. • Measures of variability. • Analysis of the association between two variables: the contingency table. • Elements of demography.
Teaching Format	The course consists of 30 hours of in-person lectures during which the instructor will present the various topics. The lecture content will be delivered using PowerPoint presentations, which will be made available to students on TEAMS. All lessons will follow a "blended" approach, where traditional lecture-based teaching will alternate with interactive teaching

	moments, in varying proportions depending on the topic and the type of activity being conducted. Typically, the "interactive component" will be more prominent during in-class exercises.
Required Readings	M.K. Pelosi, T.M. Sandifer, P. Cerchiello, P. Giudici *Introduzione alla statistica*, McGraw Hill, 2009 seconda edizione (chapters 0 to 4). A. Rosina e A. De Rose. *Demografi*a. Egea. Milano. 2017. Lecture notes prepared by the teacher will also be provided.
Supplementary Readings	

Course Module

Course Constituent Title	Quantitative Methods in Educational and Social Research (LAB)
Course Code	64221B
Scientific-Disciplinary Sector	STAT-03/B
Language	Italian
Lecturers	Prof. Giulia Cavrini, GCavrini@unibz.it https://www.unibz.it/en/faculties/education/academic-staff/person/13718
Teaching Assistant	
Semester	First semester
CP	2
Responsible Lecturer	
Teaching Hours	0
Lab Hours	20
Individual Study Hours	30
Planned Office Hours	6
Contents Summary	The lab module of the Quantitative Social Research course aims to provide a practical introduction to the analysis of social and demographic data using Excel. It will focus on the application of descriptive statistical techniques to the study of social and demographic phenomena, as covered in the theoretical module, with particular attention to the interpretation of results and their

	communication.
Course Topics	The topics covered in this part of the course, which includes the use of EXCEL, are: - Setting up the data matrix. - Manipulating variables and cases: recoding, case selection, and separate analyses. - Univariate analysis: descriptive statistics, frequency distributions, and charts. - Bivariate analysis: cross-tabulations.
Teaching Format	The lessons include hands-on computer use by the students, who will be introduced to the use of EXCEL. Only a few hours will be delivered through traditional lectures, while the majority will involve students working in small groups to analyse datasets provided by the professor.
Required Readings	P. Poli *EXCEL 2019. Formule e analisi dei dati*. Hoepli Informatica. Lecture notes prepared by the teacher will also be provided.
Supplementary Readings	