COURSE OF STUDY *Statistical Sciences*

ACADEMIC YEAR *2023-24*

ACADEMIC SUBJECT *Statistics for social and health planning*

General information	
Year of the course	*Second year*
Academic calendar (starting and ending date)	*Ist semester*
Credits (CFU/ETCS):	6
SSD	*Statistics for social research-SECS-S/05*
Language	Italian
Mode of attendance	*Attendance at the course is strongly recommended*

Professor/ Lecturer	
Name and Surname	*Angela Maria D'Uggento*
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Telephone	*080/5049239*
Department and address	*Economics and Finance*
Virtual room	
Office Hours (and modalities: e.g., by appointment, on line, etc.)	*Tuesday and Thursday, 9:00 am to 11:00 am. May change depending on class schedule and specific needs of professor or students.*

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	*34*	*8*	*108*
CFU/ETCS			
6			

Learning Objectives	*The goal of the course is to provide students with knowledge of methodological and programmatic tools for analyzing epidemiological and biomedical data and for evaluating the performance of health care organizations. The laboratory section is devoted to the analysis of official data using statistical software.*
Course prerequisites	*There are no formal prerequisites, but mastery of basic Statistics and Inferential Statistics is strongly recommended.*

Teaching strategies	*Lessons with PC exercises and slides. Seminars for in-depth analysis of specific topics using software.*
Expected learning outcomes in terms of	
Knowledge and understanding on:	*Students must acquire knowledge of the phenomenon being studied and demonstrate that they know how to organize and process social and health data using the technique of appropriate analysis in relation to the problem being addressed, model and propose solutions, and interpret the results.*
Applying knowledge and understanding on:	*given the complexity and multidimensionality of social phenomena and public health, students need to acquire professional tools to address and solve problems of organizing, processing, and analyzing data useful for operational support of*

	decision-making processes.
Soft skills	*- students must develop independent judgment and skills in data collection, including from official national and international sources, data analysis and interpretation. The use of official documents and scientific articles will support learning. The use of statistical software will allow for a better understanding of what is learned in the course.* *- students must be able to identify the most appropriate methods for communicating the results of the analyzes performed.*
Syllabus	***Health statistics and recalls of statistical methodology****: Definition and purpose of health statistics. Information systems and sources of health data. Nosological nomenclatures. Morbidity statistics: influencing factors and indices. Mortality statistics: Generalities, surveys, death. Lethality: definition and indices. Pathological conditions: general and special cases. Accidental pathologies. Epidemiology: sources, indicators, instruments and methods, sensitivity and specificity. Relative risk and odds ratio. Survival analysis. Actuarial and Kaplan-Meier methods. Comparisons between groups: the logrank test and the Wilcoxon test. The semi-parametric model of Cox.* ***Operational tools for social and health planning:*** *Quality in health care. DRGs and case mix index. Relationship between cost-effectiveness of health services and optimal use of existing resources (Nomogram of Barber). The assessment of hospital mobility (Gandy's Nomogram). Tools for the detection and subjective evaluation of hospital quality. The tools of planning and control in health care companies. The Balanced scorecard. The Clinical Risk Analysis in health care institutions.*
Content knowledge	
Texts and readings	*Teaching material of the lecturer (A. M. D'UGGENTO - F. D. D'OVIDIO. Course notes), available at http://dief.osel.it with password provided by the instructor at the beginning of the course or upon request by the student.* *DELVECCHIO F. - Survival analysis (notes for students).* Bergeron, B. P.Performance Management in Healthcare. Taylor&Francis. CRC Press.2018
Notes, additional materials	
Repository	*http://dief.osel.it*

Assessment	
Assessment methods	*The profit test is conducted through an oral interview supplemented by exercises conducted simultaneously with the oral exam. The assessment of knowledge contributes equally to the ability to analyze, the theoretical knowledge acquired and the ability to solve problems in the field of social and health care.*
Assessment criteria	*Based on the above expected learning outcomes, the following are expected:* *- Knowledge and skills of comprehension: Students must acquire the knowledge and be able to organize research to investigate phenomena.* *- Applied Knowledge and Skills: Students must know how to apply the correct statistical tools to study the phenomenon and correctly interpret the results of the analyzes conducted.* *- Critical skills and judgment: students must be able to define the possible*

	research hypotheses while demonstrating the ability to collect and interpret data. *- Ability to communicate what has been learned: students must be able to understand the research hypotheses and rationale for the methods used and write a report analyzing and interpreting the results obtained.* *- Ability to continue studies independently: with the acquired methodological knowledge, students must be able to carry out further studies with a high degree of independence.*
Final exam and grading criteria	*The final grade is given in thirtieths. The exam is considered passed if the grade is greater than or equal to 18.*
Further information	