



## COURSE OF STUDY Attività Motorie e Sportive

### ACADEMIC YEAR 2023/2024

### ACADEMIC SUBJECT Epidemiology and Statistics

General information	
Year of the course	1 Year
Academic calendar (starting and ending date)	1 Term
Credits (CFU/ETCS):	2 CFU
SSD	MED/42
Language	Italian
Mode of attendance	Not Mandatory

Professor/ Lecturer	
Name and Surname	Francesco Paolo Bianchi
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Department and address	Istituto di Igiene AOUC Policlinico Bari
Virtual room	Google meet
Office Hours (and modalities: e.g., by appointment, on line, etc.)	By appointment

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
50	20		30
CFU/ETCS			
2	2		

Learning Objectives	
	<ol style="list-style-type: none"> <li>1. Provide students with a fundamental understanding of the concepts of epidemiology and statistics applied to health and physical activity.</li> <li>2. To illustrate the importance of epidemiology in the evaluation and analysis of patterns of disease and the effects of physical activity on health.</li> <li>3. Present the main epidemiological research methods used in the study health and well-being in contexts related to the sports sciences.</li> <li>4. Introducing students to the fundamental principles of statistics, including data collection and analysis techniques, necessary to correctly interpret epidemiological studies.</li> <li>5. Teaching students how to critically evaluate and interpret literature scientific in the field of epidemiology and motor sciences.</li> <li>6. Provide students with the necessary skills to conduct surveys epidemiological and statistical analyses related to health and physical activity.</li> </ol>



	<p>7. Promote students' ability to apply epidemiological principles and statistics acquired for planning, implementation and evaluation of interventions aimed at improving health and well-being through physical activity.</p> <p>8. Integrate theory with practical experience through the analysis of real data and development of epidemiological research projects in the context of motor science.</p> <p>9. Stimulate students' critical awareness of importance scientific evidence in guiding decisions and practices in the field of health and physical activity.</p> <p>10. Prepare students to competently face challenges and challenges opportunities in epidemiology and statistics applied to sciences motor vehicles, thus contributing to the promotion of health and the improvement of quality of life through physical activity.</p>
<b>Course prerequisites</b>	Good knowledge of Italian and mathematics and possession of adequate learning and reasoning skills

<b>Teaching strategie</b>	lectures
<b>Expected learning outcomes in terms of</b>	
<b>Knowledge and understanding on:</b>	Students should be able to understand the theoretical and applications related to the subject, knowing how to recognize their gaps and identify effective strategies for acquiring new knowledge and skills
<b>Applying knowledge and understanding on:</b>	Students will have to demonstrate to identify the countless applications of statistics and epidemiology in vocational training so as to acquire independently updated skills.
<b>Soft skills</b>	I/Students/students must have the ability to collect and interpret data (normally in your field) Students will be able to interpret the information critically and take decision-making on health issues public, explaining the social worker's level of decision-making autonomy related responsibilities and the logical process underpinning this path.
<b>Syllabus</b>	
<b>Content knowledge</b>	<p>Medical statistics</p> <p>Introduction to Medical Statistics.</p> <p>Statistics, epidemiology and demography.</p> <p>Descriptive statistics and statistical inference.</p> <p>Concept of variable.</p> <p>Qualitative and quantitative variables.</p> <p>Central trend indices.</p> <p>Dispersion indices.</p> <p>Proportions.</p> <p>Managing databases. Introduction to using Excel.</p> <p>Calculation of the average, standard deviation and proportions in Excel.</p> <p>Techniques of sampling.</p> <p>Sampling with Excel.</p> <p>Graphical representations: histograms, bar diagrams, pie charts.</p> <p>Using Excel in graphical representations.</p> <p>Confidence interval concept. Average confidence interval.</p> <p>Confidence interval for proportions.</p> <p>Principle of hypothesis verification.</p> <p>Hypothesis verification: comparison between two averages for paired and non paired samples</p>



	<p>paired, comparison between two proportions, parametrically and not parametric. Comparison of multiple averages. Concept of correlation. Epidemiology Incidence, prevalence, rates. Epidemiological studies. Cohort studies. Control case studies. Evaluation of a test: sensitivity, specificity, predictive value. A guide to bibliographical research and the reading of a scientific article.</p>
<b>Texts and readings</b>	<p>Norman G, Streiner D, Capelli G, d'Abramo G. Biostatistica. Casa editrice ambrosiana, Milano, 2000. J.F.Osborn. Manuale di Statistica Medica. Società Editrice Universo, Roma, 1999. Lopalco PL, Tozzi A. Epidemiologia facile. Il Pensiero Scientifico Editore, 2005.</p>
<b>Notes, additional materials</b>	
<b>Repository</b>	Teams Class

<b>Assessment</b>	
Assessment methods	
Assessment criteria	<p>The student must demonstrate the basics for the identification and critical reading of updated sources based on quantitative studies. Please provide the basis for statistics useful to the work of the thesis and any applied research activities in the field of motor and sports sciences.</p> <p>Knowledge and understanding skills: Students should be able to understand the theoretical and applications relating to the subject, to be able to recognize one's own gaps and identify effective strategies for acquiring new knowledge and skills</p> <ul style="list-style-type: none"> <li>• Knowledge and understanding applied: Students will need to demonstrate to identify countless applications statistics and epidemiology in vocational training independently acquire up-to-date skills.</li> <li>• Autonomy of judgment: Students will be able to interpret the information critically and take the decision-making paths on public health, explaining the assistant's level of decision-making autonomy</li> </ul> <p>The European Commission's White Paper on social policy, social policy, social policy, social policy and social policy.</p> <ul style="list-style-type: none"> <li>• Communication skills: Students will have to convey information and ideas clearly and formally corrected, by expressing them in terms appropriate to specialist or non-specialist interlocutors.</li> <li>• Ability to learn: o Students should be able to understand and acquire the</li> </ul>



	useful information to improve their work through evidence based medicine and the analysis of scientific literature.
Final exam and grading criteria	The student must demonstrate knowledge of the topics under study and have understood the issues related to them, as well as to have reached a level of knowledge to develop independently interpretative arguments 1) Failure to pass the test: insufficient knowledge of the course contents, insufficient evaluation and reasoning skills, lack of basic knowledge. 2) 18 to 21: sufficient or barely sufficient preparation; minimum knowledge of the institutions and of the problems tackled during the course; presence of minor gaps; 3) 22 to 24: average preparation characterized by no particular deepening and by gaps that can be filled in the continuation of the overall training; 4) 25 to 27: generally good preparation even if not particularly thorough; technical language and adequate expressive ability; 5) 28 to 30: excellent or excellent preparation; precise and precise technical language and expressive ability; 6) 30 e lode: preparation, technical language, expressive and argumentative skills of the highest level
<b>Further information</b>	
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