



# UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

BIOMETRY AND LAB	
Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	MED/01 (MEDICAL STATISTICS)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOLOGICAL SCIENCES
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	2nd semester (01/03/2022 - 14/06/2022)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	WRITTEN TEST
Teacher	VERDERIO PAOLO (titolare) - 6 ECTS
Prerequisites	Basic knowledge of mathematics provided in upper secondary school.
Learning outcomes	the course aims at providing the basic concepts of the descriptive and inferential statistics for a proper understanding and interpretation of biological data and results arising from their analysis.
Course contents	<p>DESCRIPTIVE STATISTICS</p> <p>Introduction to statistics, descriptive and inferential statistics, population and sample, variables and types of data; frequency distributions (absolute, relative and cumulative) and data representation (tables and graphs); location and dispersion indexes.</p> <p>PROBABILITY</p> <p>Probability theory and type of events;</p>

	<p>random variables, discrete and continuous probability distributions, statistical tables.</p> <p><b>INFERENCEAL STATISTICS</b>  Sampling distribution of the mean, the central limit theorem, point and interval estimation;  hypothesis testing, null and alternative hypothesis, type I and II errors;  comparing two means: parametric and non-parametric tests (for paired and independent data);  comparing more than two means: analysis of variance (ANOVA) and adjustment for multiple comparisons;  contingency tables and association analysis;  correlation and simple linear regression;  introduction to experimental design.</p>
<b>Teaching methods</b>	Lectures with examples from real practice
<b>Reccomended or required readings</b>	MC Whitlock, D Schluter. ANALISI STATISTICA DEI DATI BIOLOGICI. Zanichelli Editore
<b>Assessment methods</b>	Written examination consisting of multiple choice question, open questions and practical exercises
<b>Further information</b>	Written examination consisting of multiple choice question, open questions and practical exercises
<b>Sustainable development goals - Agenda 2030</b>	<a href="#">\$lbl_legenda_sviluppo_sostenibile</a>